Appendix 1.0-1

NOTICE OF PREPARATION AND INITIAL STUDY

Notice of Preparation

To: **Office of Planning and Research, State Clearinghouse**
Responsible, Reviewing and Interested Agencies

From: **City of Shasta Lake (Lead Agency)**

Subject: **Notice of Preparation of a Draft Environmental Impact Report**

Contact: **Carla L. Thompson, AICP, Development Services Director**
City of Shasta Lake
P.O. Box 777 (Mail) / 1650 Stanton Drive
Shasta Lake, CA 96019
530.275.7460 **cthompson@cityofshastalake.org**

EIR Consultant: **Mark Teague, AICP,** Pacific Municipal Consultants (PMC)
6020 Cornerstone Court West, Ste. 350
San Diego, CA 92121
858.453.3602, Ext. 15201

Applicant: **Mountain Gate Meadows, LLC**
4241 Arnold Ave.
McClellan, CA 95652

Project Title: **Mountain Gate at Shasta Area Plan (GPA 11-01; Z 11-02; SD 11-01)**

Project Location: City of Shasta Lake, Shasta County; Assessor's Parcel Numbers: 007-400-037, -052, -053, -054; 307-210-028, -031, -032, -033, -034, -035, -036, -037; 307-220-001, -002, -003, -004; 307-240-001; 307-380-001, 002, -003

PROJECT DESCRIPTION:

General Plan Amendment (GPA 11-01) that would redesignate approximately 141 acres of the project area to Mixed Use (MU) consistent with the remaining 449 acres of the site. The remaining project area is currently designated MU consistent with proposed use of the site. **Rezone (Z 11-02)** that would change the zoning of the entire 590-acre project site from Planned Development-Specific Plan (PD/SP) to Planned Development (PD). **Tentative Map (SD 11-01)** for the creation of 21 parcels. Future development of the site will require additional tentative subdivision maps. An **Area Plan** will be developed for a mixed-use development on the 590-acre property with approximately 1,604 housing units, 195,584 square feet of commercial uses / professional offices, and 236 acres of open space, parks and trails.

AVAILABILITY OF PROJECT-RELATED DOCUMENTS:

Copies of project-related documents and technical studies associated with the project are on file and available for review Monday-Friday, 7:00 AM – 4:00 PM (closed from Noon-1:00 PM) in the City of Shasta Lake Planning Division, 1650 Stanton Drive, Shasta Lake, California 96019. Electronic copies are available on the City's website at www.cityofshastalake.org

The City of Shasta Lake, as Lead Agency, will prepare an Environmental Impact Report (EIR) for the project identified as the Mountain Gate at Shasta Mixed-Use Area Plan. An Initial Study has been prepared for the project. The project title, project description, location and applicant are included in the Initial Study (IS), which is attached to this Notice of Preparation (NOP). The IS lists anticipated environmental impacts, those issues that will require detailed analysis, and technical studies that will need to be evaluated and/or prepared as part of the EIR. The EIR will consider all potential environmental effects and will analyze those potential effects to the detail necessary to make a determination on the level of significance.

Those environmental issues that have been determined to be less-than-significant or have no impact will include a discussion that is limited to a brief explanation of why those effects are not considered potentially significant. In addition, the EIR may also consider those environmental issues which are raised by responsible agencies, trustee agencies, other interested agencies, and members of the public or related groups during the NOP process.

We need to know the views of your agency as to the scope and content of the environmental information which is pertinent to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by the City when considering your permit or other approval for the project. Specifically, the following information is requested:

1. If you are a public agency, state whether your agency will be a responsible or trustee agency for the project and list the permits or approvals from your agency that will be required for the project and its future actions;

2. Identify significant environmental effects and mitigation measures that you believe need to be explored in the EIR with supporting discussion of why you believe these effects may be significant;

3. Describe special studies and other information that you believe are necessary for the City to analyze the significant environmental effects, alternatives and mitigation measure you have identified;

4. Provide the name, title, telephone number and e-mail address of the contact person from your agency or organization whom we can contact regarding your comments.

DEADLINE TO RESPOND:

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but **not later than 30 days** after receipt of this notice. **The 30-day review period ends on May 4, 2012.**

A responsible agency, trustee agency or other public agency may request a meeting with the City of Shasta Lake in accordance with California Code of Regulations Section 15082(c).

SCOPING MEETING NOTICE:

The City of Shasta Lake will hold a public scoping meeting for individuals and agencies to learn more about the project and to receive comments regarding the appropriate scope and content of the EIR. The meeting will be held:

Monday, April 16, 2012
6:00 PM
John Beaudet Community Center
1525 Median Avenue
Shasta Lake, California

Please send your responses and any direct questions to **Carla L. Thompson, AICP**, Development Services Director, P.O. Box 777 (Mail), 1650 Stanton Drive (In person), Shasta Lake, CA 96019.

Carla L. Thompson

Date: April 3, 2012

Carla L. Thompson, AICP
Development Services Director

Telephone: **530.275.7460** **E-mail: cthompson@cityofshastalake.org**

Mountain Gate at Shasta Area Plan

General Plan Amendment (GPA 11-01); Rezone (Z 11-02); Tentative Subdivision Map (SD 11-01); Area Plan

Initial Environmental Study

Prepared for:

City of Shasta Lake (Lead Agency)
P. O. Box 777
1650 Stanton Drive
Shasta Lake, CA 96019

Prepared by:

PMC
PACIFIC MUNICIPAL CONSULTANTS

6020 Cornerstone Court West, Ste. 350
San Diego, CA 92121

April 2012

1.0 BACKGROUND

A similar project was proposed on this property in 2005 (SCH#2005102074). An initial study/notice of preparation (IS/NOP) was circulated from October 21, 2005 to November 21, 2005, and a scoping meeting was held on November 9, 2005. Most of the technical studies were completed and an administrative draft environmental impact report was prepared. However the EIR for the project was neither fully completed nor circulated publically and the original project applicant is no longer involved.

This proposed project is smaller in terms of housing units and commercial space than the 2005 submittal. Because of the length of time between the 2005 IS/NOP and the current submittal, and the change in the project and applicant, the City has elected to circulate a new initial study and notice of preparation. Since the previous project was not approved, this new project will be the sole project included in the IS/NOP and EIR, and no comparison between the 2005 project and this proposed project will be included in the documentation except as needed to support the use of previously prepared technical studies.

1.1 INTRODUCTION AND REGULATORY GUIDANCE

This document is an Initial Environmental Study (IS) for the proposed **Mountain Gate at Shasta Area Plan** project (proposed project or project) prepared by the City of Shasta Lake. The IS, along with supporting documentation, prepared in accordance with the California Environmental Quality Act (CEQA) Guidelines, provides justification for an Environmental Impact Report (EIR).

Through the Initial Study, the City has determined that the project may have significant impacts on the environment and an EIR must be prepared before action can be taken on the proposed project. Although the proposed project may have a significant effect on the environment, some of the environmental impacts are less than significant and need not be addressed in the EIR. The initial study explains the scope of the EIR and eliminates issues determined to be less than significant.

This document is divided into the following sections:

1.0 Introduction and Project Summary - This section provides an introduction and describes the purpose and organization of this document. It also provides general information regarding the project, including the project title, lead agency, contact person, brief description of the project location, general plan and zoning designations, surrounding land uses, and list of other public agencies whose review, approval, and/or permits may be required.

2.0 CEQA Determination - This section concludes that an EIR will be prepared for this project.

3.0 Project Description - This section provides a detailed description of the proposed project. The project description includes a site map and figures illustrating specific characteristics of the project.

4.0 Environmental Checklist - This section describes the environmental setting/overview for each of the environmental subject areas and evaluates a range of impacts.

5.0 Documents Referenced – This section provides a list of documents referenced in preparation of the Initial Study.

1. Project Title:	**Mountain Gate at Shasta Area Plan (GPA 11-01; Z 11-02; SD 11-01)**
2. Lead Agency Name and Address:	City of Shasta Lake P.O. Box 777 - 1650 Stanton Drive Shasta Lake, CA 96019
3. Contact Person and Phone Number:	Carla L. Thompson, AICP, Development Services Director 530.275.7460
4. City's Environmental Consultant:	Mark Teague AICP, Project Manager 530.894.3469 Ext. 15201
5. Project Location:	The subject property is located in the northeast section of the City of Shasta Lake, south of the community of Mountain Gate, on the west side of Interstate 5, south of the Mountain Gate/Interstate 5 Interchange; Section 20 and 29, Township 33 North, Range 4 West, MDM. Assessor's Parcel Numbers: 007-400-037, -052, -053, -054; 307-210-028, -031, -032, -033, -034, -035, -036, -037; 307-220-001, -002, -003, -004; 307-240-001; 307-380-001, 002, -003
6. Project Sponsor's Name and Address:	**Project Applicant:** Mountain Gate Meadows, LLC 5241 Arnold Ave. McClellan, CA 95652 **Project Representative:** Milo L. Terzich
7. General Plan Designation:	Mixed Use (MU), Suburban Residential (SR) and Urban Residential High (URH)
8. Zoning:	Planned Development-Specific Plan (PD-SP)
9. Description of Project:	**General Plan Amendment (GPA 11-01); Rezone (Z 11-02); Tentative Subdivision Map (SD 11-01); Area Plan.** General Plan Amendment from Suburban Residential (SR) and Urban Residential High (URH) to Mixed Use (MU). Rezone from Planned Development-Specific Plan (PD-SP) to Planned Development (PD). Tentative Map for the creation of 21 parcels. Future development of the site will require additional tentative maps. A proposed Area Plan will be developed for a mixed-use planned development on 590 acres with approximately 1,604 housing units, and 195,584 square feet of commercial uses, professional offices and 236 acres of open space, parks and trails.

10. Existing and Surrounding Land Uses:

The site is undeveloped with the exception of foot trails and vehicle tracks. Natural vegetation includes valley oaks, digger pine, manzanita and grassland. A number of important streams are located within this area, including Moody Creek and Rancheria Creek and several unnamed ephemeral tributaries proceed generally north to south through the project area. Additional streams in the vicinity include Churn and Salt Creeks to the west and southwest, Stillwater Creek to the east, and the Sacramento River located several miles west and southwest.

Properties to the south and southwest are developed primarily with single-family residential uses. Grand Oaks Elementary School is located southwest, adjacent to the project site. Properties to the northwest are vacant. Properties to the north along Wonderland Boulevard are developed with single-family residences. Properties to the east are developed primarily with lower density single-family residential uses.

11. Other public agencies whose approval is required:

U.S. Army Corps of Engineers
Regional Water Quality Control Board
California Department of Fish and Game
Shasta County (Encroachment Permit)

12. Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the environmental checklist in this document.

☒ Aesthetics	☒ Hazards/Hazardous Materials	☒ Public Services
☐ Agricultural Resources	☒ Hydrology/Water Quality	☒ Recreation
☒ Air Quality	☒ Land Use/Planning	☒ Transportation/Circulation
☒ Biological Resources	☐ Mineral Resources	☒ Utilities/Service Systems
☒ Cultural Resources	☒ Noise	☒ Mandatory Findings of Significance
☒ Geology and Soils	☒ Population and Housing	

2.1 CEQA Determination

On the basis of this initial evaluation:

☐ I find that the proposed project could not have a significant effect on the environment, and a negative declaration will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ **I FIND THAT THE PROPOSED PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT, AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED.**

☐ I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An environmental impact report is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier eir or negative declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or negative declaration, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Carla L. Thompson

Carla L. Thompson, AICP
Development Services Director

April 3, 2012
Date

3.1 PROJECT LOCATION

PROJECT LOCATION

The proposed project is located in the northeastern corner of the City of Shasta Lake due west of Interstate 5 (I-5) between the Shasta Dam Boulevard interchange (Exit #685) and the Mountain Gate interchange (Exit #687). The City of Shasta Lake is located immediately south of Shasta Lake in western Shasta County. The project site, which is known locally as the Peri property, is located in Sections 20 and 29, Township 33 North, Range 4 West, of the Mount Diablo Meridian. (See Figure **3.0-1, Project Location**.)

SITE DESCRIPTION

Existing topography within the project site generally consists of relatively flat areas adjacent to Interstate 5 (I-5), with rolling hills and drainages to the south and western edges of the property. Existing site vegetation includes meadow with natural vegetation including valley oaks, foothill pine, manzanita and grassland. Seasonal wetlands occur throughout the project site. (See **Photos 3.0-1** and **3.0-2**.) Except for informal trails and freeway-oriented advertising, the property is undeveloped.



Photo 3.0-1: View of Shasta Bally peak looking southwest from the center of the project area.



Photo 3.0-2: View facing west from center of project area.

3.2 PROJECT SETTING

The City of Shasta Lake is located at the northernmost extent of the central valley at the foothills of the Klamath mountains and the Cascade mountain range. The project is located in the northeast portion of the City. The project site is bound to the east by I-5, to the south and west by existing low density residential development, and to the north by the city limits boundary. Lands to the north of the project area, located within the County, are currently vacant. The 2011 population of the City is estimated at 10,125, with approximately 4,185 housing units.[1] (See **Figure 3.0-1, Project Location**.)

[1] Department of Finance, E-5 Report, dated May 2011

Existing roadway access to the site is from Wonderland Boulevard, which dead-ends at the property gate adjacent to I-5. Access to the project site would be from the Mountain Gate interchange with I-5 at the north end of the project site and via a planned roadway extension south to Shasta Dam Boulevard via either Cascade Boulevard or Shasta Way. Additional emergency access points will be provided as determined by the Shasta Lake Fire Protection District. (See **Figure 3.0-2, Project Circulation**.)

3.3 PROPOSED PROJECT

SUMMARY

The City of Shasta Lake has received applications for a project that consists of the following four elements: (1) General Plan Amendment, (2) Area Plan adoption, (3) rezone and (4) approval of a tentative map.

General Plan Amendment

The project proposes a General Plan Amendment (GPA 11-01) that would redesignate approximately 141 acres of the project area to Mixed Use (MU) consistent with the remaining 449 acres of the site. This would entail redesignating approximately 23 acres of the site currently designated Urban Residential High (URH) and approximately 118 acres of the site currently designated Suburban Residential (SR). The remaining project area is currently designated MU consistent with proposed use of the site. The General Plan amendment would result in the entire 590-acre project area being designated MU. (See **Table 3.0-5**.)

Area Plan

The project proposes adoption of the Mountain Gate at Shasta Area Plan (Area Plan), which would allow for a theoretical maximum of 1,787 dwelling units; however, topography and site constraints would limit the overall density. Approximately 1,604 units is considered the development limit of the site in this EIR. The Area Plan also could lead to approximately 195,584 square feet of non-residential development on approximately 590 acres (Proposed Project). (See **Figure 3.0-3, Schematic Land Plan**.)

The Area Plan establishes land use designations and a circulation pattern for the project site. The Area Plan provides for different land use patterns and divides the property into areas A through U. As shown in **Table 3.0-1**, the Area Plan also provides for a mix of residential and non-residential uses with differing densities.

Residential Uses

Housing types are expected to vary in each of the plan areas as project design incorporates the project site topography and site amenities. **Table 3.0-2** provides a summary of the housing types anticipated in the Plan. Note that several different housing types can occur in each of the plan areas; however, the Area Plan limits overall density in each area.

Non-Residential Uses

Non-residential land uses are concentrated in areas A and H as shown in **Figure 3.0-3** and **Table 3.0-1**. Area A allows for traditional commercial development; however, the uses in this area would be limited by the planned development zone for the proposed project. Area H is intended as a mixed-use urban center and would contain both residential and non-residential

uses. This area may also contain live-work units with commercial and residential uses within the same building(s). Parks are identified for areas C, K and a portion of M as shown in **Figure 3.0-3**.

Table 3.0-3 provides an illustration of the non-residential development areas and how these properties might be developed. The Area Plan requires that the architectural theme of these sites be consistent with the surrounding development. Development of parks would be consistent with the *City of Shasta Lake Park System Master Plan* and may include ball fields and playgrounds, and would be accessible by both roadway and trail.

Circulation

An internal circulation system, in the form of roads and trails, would link all of the uses in the Area Plan. The system has been designed to encourage walking, biking, and other non-motorized uses. The trails would be located along biologically important areas, such as drainages and wetlands, as well as at the base of slopes. The proposed trails would be separated from roadways in some areas of the project site and adjacent to roadways in others. The Area Plan contains a schematic trail plan, a typical trail design section, and policies that require trail linkages for all land uses. (See **Figure 3.0-4, Neighborhood Trail Map**.) Policies in the Area Plan require that subsequent development connect to, and extend any existing trail system.

The road network has been designed with a number of different street widths and designs so as to minimize the amount of grading and pavement needed to serve the Plan Area. Proposed street designs are summarized in **Table 3.0-4**. Roadways within the Area Plan would generally be constructed as shown in **Table 3.0-4**, but may be modified as needed and approved by the City. All roads would be built in compliance with City of Shasta Lake standards.

Other design components of the Area Plan are discussed throughout the EIR in sections appropriate for the environmental context.

Rezone

The project proposes a rezone (Z 11-02). The proposed rezone consists of a request to change the zoning of the entire 590-acre project site from Planned Development-Specific Plan (PD/SP) to Planned Development (PD) (see **Table 3.0-5**).

Tentative Map

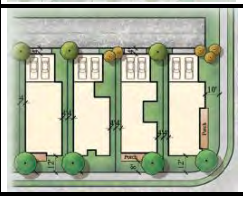
The project proposes a tentative subdivision map (SD 11-01) to allow the creation of 21 parcels (see **Figure 3.0-5, Tentative Subdivision Map**).

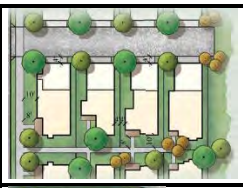
TABLE 3.0-1
MOUNTAIN GATE AT SHASTA
AREA PLAN LAND USE

Area[1]	Primary Land Use[2]	Acres[3]	Max. Building Coverage or FAR[4]	Potential Sq.Ft.[5]	Density Range	Unit Range
A	Commercial	11.2	0.25	121,968	—	—
B	Open Space	181.5	0.10	—	—	—
C	Park	7.3	0.10	—	—	—
D	Medium Density Residential	27.9	0.70	—	5 – 7	139 – 195
E	Urban Residential Medium	22.5	0.70	—	4 – 6	90 – 135
F	Very Low Density Residential	16.3	0.50	—	2 – 4	32 – 65
G	Medium Density Residential	43.5	0.65	—	4 – 6	174 – 261
H	Mixed Use Commercial / Urban Residential High	16.9	0.10	73,616	—	—
			0.70	—	8 – 20	135 – 338
I	Medium Density Residential	7.3	0.65	—	6 – 8	43 – 58
J	Urban Residential Medium	8.1	0.65	—	5 – 7	40 – 56
K	Park	7.6	0.10	—	—	—
L	Low Density Residential	17.1	0.50	—	4 – 6	68 – 102
M	Low density Residential	32.4	0.50	—	2 – 4	64 – 129
N	Very Low Density Residential	11.3	0.50	—	2 – 4	22 – 45
O	Low Density Residential	13.1	0.50	—	2 – 4	26 – 52
P	Low Density Residential	32.9	0.50	—	2 – 4	65 – 131
Q	Very Low Density Residential	12.4	0.50	—	2 – 4	25 – 49
R	Urban Residential High	4.5	0.70	—	15 – 20	67 – 90
S	Very Low Density Residential	40.5	0.50	—	1 – 2	40 – 81
T	Open Space	5.9	0.10	—	—	—
U	Open Space	33.6	0.10	—	—	—
R.O.W.	Rights-Of-Way	36.2	0.00	—	—	—
Totals		**590.0**	—	**195,584**	—	**1,029 – 1,787**

[1]See Figure 3.0-3 for location of land use areas.
[2]Public facilities can occur in any land use area.
[3]All acreages are estimates.
[4]Floor area ratio for non-residential uses only, Maximum building coverage for residential uses.
[5]Maximum potential square footage of all structures within the land use designation.

TABLE 3.0-2
MOUNTAIN GATE AT SHASTA
RESIDENTIAL DESIGN SUMMARY

Housing Type	Typical Site Placement	Possible Elevations
Small Lot 5-8 units/acre Areas D, I, J		
Medium Lot 4-6 units/acre Areas E, G, L		 
Large Lot 1-4 units/acre Areas F, M, N, O, P, Q, S		 
Town Home 5-8 units/acre Areas D, I, J		
Multi-Family 8-20 units/acre Areas H, R		
Alley Loaded 5-8 units/acre Areas D, I, J		 

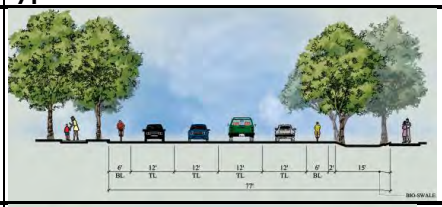
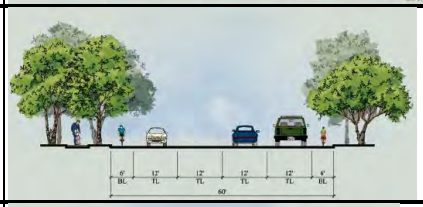
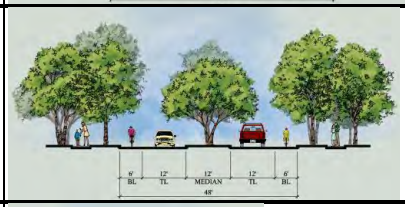
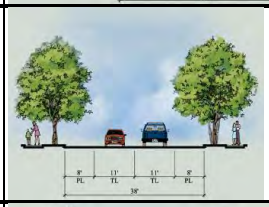
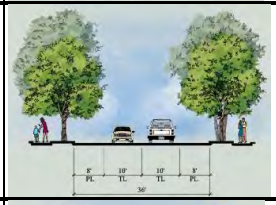
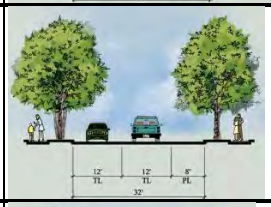
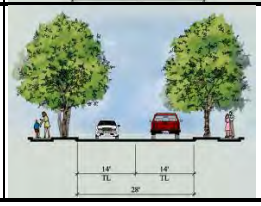
Green Court 5-8 units/acre Areas D, I, J		
Apartments 8-20 units/acre Areas H, R		

Areas C, K and a portion of M would be designated as parkland and would not have residential or commercial development, but may have structures designed to enhance the recreation use.

TABLE 3.0-3
MOUNTAIN GATE AT SHASTA
NON-RESIDENTIAL DESIGN SUMMARY

Use Type	Potential Site Plan	Possible Elevations
Parkland Areas C, K, portion of M	 	
Mixed Use 8-20 units/acre Area H		
Neighborhood Retail Areas A, H		

TABLE 3.0-4
MOUNTAIN GATE AT SHASTA
ROADWAY SECTIONS

Roadway	Typical Section	Placement
Arterial (A) 77' Right of Way (typical)		
Rural Arterial (B) 60' Right of Way (typical)		
Residential Collector w/ Median (C) 48' Right of Way (typical)		
Residential Collector (D) 38' Right of Way (typical)		
Local Road w/Parking Both Sides 36' Right of Way (typical)		*All Local Road street sections occur within development bubbles, and are not indicated on the Street Section Location Figure.*
Local Road w/Parking One Side 32' Right of Way (typical)		
Local Road No Parking 28' Right of Way (typical)		

3.4 PROGRAM-LEVEL COMPONENTS

RESIDENTIAL UNITS

As stated above, buildout of the project could result in approximately 1,604 dwelling units, which are anticipated to be phased over 10 to 20 years.

PHASED DEVELOPMENT

Phasing of the project, as shown in **Figure 3.0-6, Phasing Plan**, is expected to start at the north end of the project site and proceed south. The utilities, and at least a portion of the roadway that will form the primary access through the site, would be constructed as part of the first phase.

The project design does not currently include proposed lotting for future phases. The project applicant would be required to submit tentative subdivision maps for future development of residential areas for City consideration and would be subject to future environmental review for project-level details in addition to the analysis provided in this Draft EIR.

3.5 PROJECT-LEVEL COMPONENTS

PLANNED DEVELOPMENT ZONE DISTRICT (PD)

The proposed Planned Development (PD) is intended to implement the policies of the Area Plan and provide a single code for development review. The PD addresses issues such as allowable uses, setbacks, parking and other development–oriented regulations. **Table 3.0-5** summarizes the proposed land use and zone change by parcel number within the Area Plan.

Table 3.0-6 identifies the permitted and conditionally permitted uses as set forth in the PD zone proposed for the project site. The uses are based on the City's General Plan and Zoning Ordinance, but have been modified to permit a wider variety of housing types and mixed use consistent with the Area Plan.

TABLE 3.0-5
GENERAL PLAN/ZONE CHANGE REQUEST

Assessor's Parcel Number	Acres	Current General Plan Land Use Designation	Proposed General Plan Land Use Designation	Current Zoning	Proposed Zoning
007-400-037	23	Urban Residential High	Mixed Use	Planned Development Specific Plan	Planned Development
007-400-053	118	Suburban Residential	Mixed Use	Planned Development Specific Plan	Planned Development
007-400-052, 054	75	Mixed Use	Mixed Use	Planned Development Specific Plan	Planned Development
307-210-028, 031, 032, 033, 034, 035, 036, 037	230	Mixed Use	Mixed Use	Planned Development Specific Plan	Planned Development
307-220-001, 002, 003, 004	56	Mixed Use	Mixed Use	Planned Development Specific Plan	Planned Development
307-240-001	3	Mixed Use	Mixed Use	Planned Development Specific Plan	Planned Development
307-380-001, 002, 003	79	Mixed Use	Mixed Use	Planned Development Specific Plan	Planned Development
Rights-of-Way	6	—	—	—	—
Total Acreage: 590 acres					

TENTATIVE SUBDIVISION MAP

A large-lot tentative map is requested as part of the approval process for the proposed project. (See **Figure 3.0-5, Mountain Gate at Shasta Tentative Subdivision Map**.) This map would provide a single roadway connection between the Mountain Gate/Wonderland Boulevard interchange to the north and Shasta Dam Boulevard to the south. The alignment of the roadway would also contain the major water and sewer conduits connecting the proposed project to the existing City of Shasta Lake utilities. The proposed map divides the property into 21 large parcels intended for future division consistent with the Plan.

TABLE 3.0-6
PLANNED DEVELOPMENT ZONE DISTRICT
PERMITTED AND CONDITIONALLY PERMITTED USES

Land Use	Area A	Areas F, N, Q, S	Areas L, M, O, P	Areas D, E, G, I, J	Area H	Area R
Single-family residential (attached)	—	**P**	**P**	**P**	**P**	—
Single-family residential (detached)	—	**P**	**P**	**P**	**P**	—
Duplex, triplex, four-plex	—	—	—	**P**	**P**	**P**
Townhouse, zero lot line	—	—	**C**	**P**	**P**	**P**
Cluster housing development	—	—	**C**	**P**	**P**	**P**
Professional offices, including administrative, executive, business, editorial, and medical	**P**	—	—	—	**P**	**C**
Public or private park and open space	**P**	**P**	**P**	**P**	**P**	**P**

Land Use	Area A	Areas F, N, Q, S	Areas L, M, O, P	Areas D, E, G, I, J	Area H	Area R
Golf course	C	C	C	C	C	—
Church	C	C	C	C	C	—
Bed & breakfast (pursuant to §17.88.270)	C	C	C	C	C	—
Assisted care/nursing or intermediate care facility	C	—	—	C	C	C
Large family daycare center	C	C	C	C	C	—
Service uses, including barber, beauty salon, coffee shop restaurant, laundromat, dry cleaner, locksmith, shoe repair	P	—	—	—	C	—
Small retail sales, (under 15,000 square feet for single tenant) including a variety store, drug store, florist, candy store or deli, video rental, book store, jewelry, boutique, grocery store	P	—	—	—	P	—
Large retail sales (over 15,000 square feet for single tenant) including grocery story, home improvement center, discount or wholesale retail sales	C	—	—	—	C	—
Hotel/Motel (100 rooms or less)	P	—	—	—	C	—
Hotel/Motel (more than 100 rooms)	C	—	—	—	C	—
Motion picture theater, bowling alley, skating rink	P	—	—	—	C	—
Fast food restaurant	P	—	—	—	C	—
Auto service station	P	—	—	—	C	—
Accessory Uses Appurtenant to the Permitted Use	P	P	P	P	P	P
Other conditional uses as provided in §17.30, §17.34, §17.36, §17.37, §17.40, §17.41 and §17.42 of the Shasta Lake Municipal Code	C	C	C	C	C	C
P = Permitted Use *C = Conditionally Permitted Use*						

OFF-SITE IMPROVEMENTS

A roadway connection will be required to connect Shasta Dam Boulevard with the proposed project. The roadway would extend around a site currently owned by the City of Shasta Lake. (See **Figure 3.0-2, Project Circulation**.) This new roadway would also require the signalization of the intersection of Shasta Way and Shasta Dam Boulevard. While the roadway connection and development of the adjacent property has been planned by the City for some time, the construction of the roadway and new intersection is essential to the proposed project. Access to the south end of the project site is proposed from Shasta Dam Boulevard through a planned roadway extension from either Cascade Boulevard or Shasta Way.

The existing Wonderland Boulevard would be abandoned and replaced with a new main roadway proposed in the Area Plan. This new roadway would provide the primary access to the project from the Mountain Gate/I-5 Interchange. A small portion of the roadway is within the jurisdiction of Shasta County which may require an encroachment permit and maintenance agreement between the City of Shasta Lake and Shasta County.

The proposed project would involve work outside of the Area Plan boundaries. Extension of water and wastewater collection systems to the site would be required and would involve work in Shasta Dam Boulevard and the new roadway extending from the Boulevard onto the project site. The proposed project may also require the construction of a 1.0 million gallon (mg) water storage tank northwest of the site.

DEVELOPMENT AGREEMENT

The applicant may enter into a Development Agreement with the City, as permitted pursuant to Government Code 65864 *et seq*. The Development Agreement sets forth property owners' obligations related to the construction and financing of infrastructure and public services, including financial contributions for infrastructure maintenance and other obligations that may be imposed by the City as a condition of development. The Development Agreement would vest the property with the right to proceed with development subject to the limitations and obligations of the Development Agreement and the Area Plan.

3.6 PROJECT OBJECTIVES

The following project objectives have been identified by the applicant:

- Develop a master planned community on 590 acres within the City of Shasta Lake that is compatible with the City's existing land use designations and zoning for the site and with existing nearby neighborhoods.
- Provide for development of a community that is substantially consistent with the existing Specific Plan No. 4-82 and the previously approved Peri Project Map No. 1732.
- Provide a balanced mix of land uses, including residential, commercial, institutional, park and open space uses, that will allow a self-sufficient community, thereby reducing demands on regional roadways and services.
- Develop a mix of commercial uses to provide neighborhood-serving retail needs for residents of the community, as well as highway commercial and hospitality uses to serve travelers along Interstate-5.
- Maximize retail and commercial development on the topographically flat portion of the project site, adjacent to Interstate-5.
- Provide residential and commercial uses in an area that is contiguous to existing development and adjacent to required infrastructure connections.
- Provide circulation and infrastructure improvements consistent with the City's existing General Plan goals and policies.
- Develop recreational and open space opportunities that are fully integrated into the project through adequate trail connections.
- Establish a pedestrian friendly community and access to a system of trails that link neighborhoods together.
- Provide required park facilities sized to meet the needs of residents in the Area Plan and located as neighborhood focal elements.
- Provide adequate infrastructure improvements without adversely affecting existing levels of service.
- Phase development and infrastructure to respond to market demand while requiring new development to provide the infrastructure and public facilities necessary to serve the developing area.

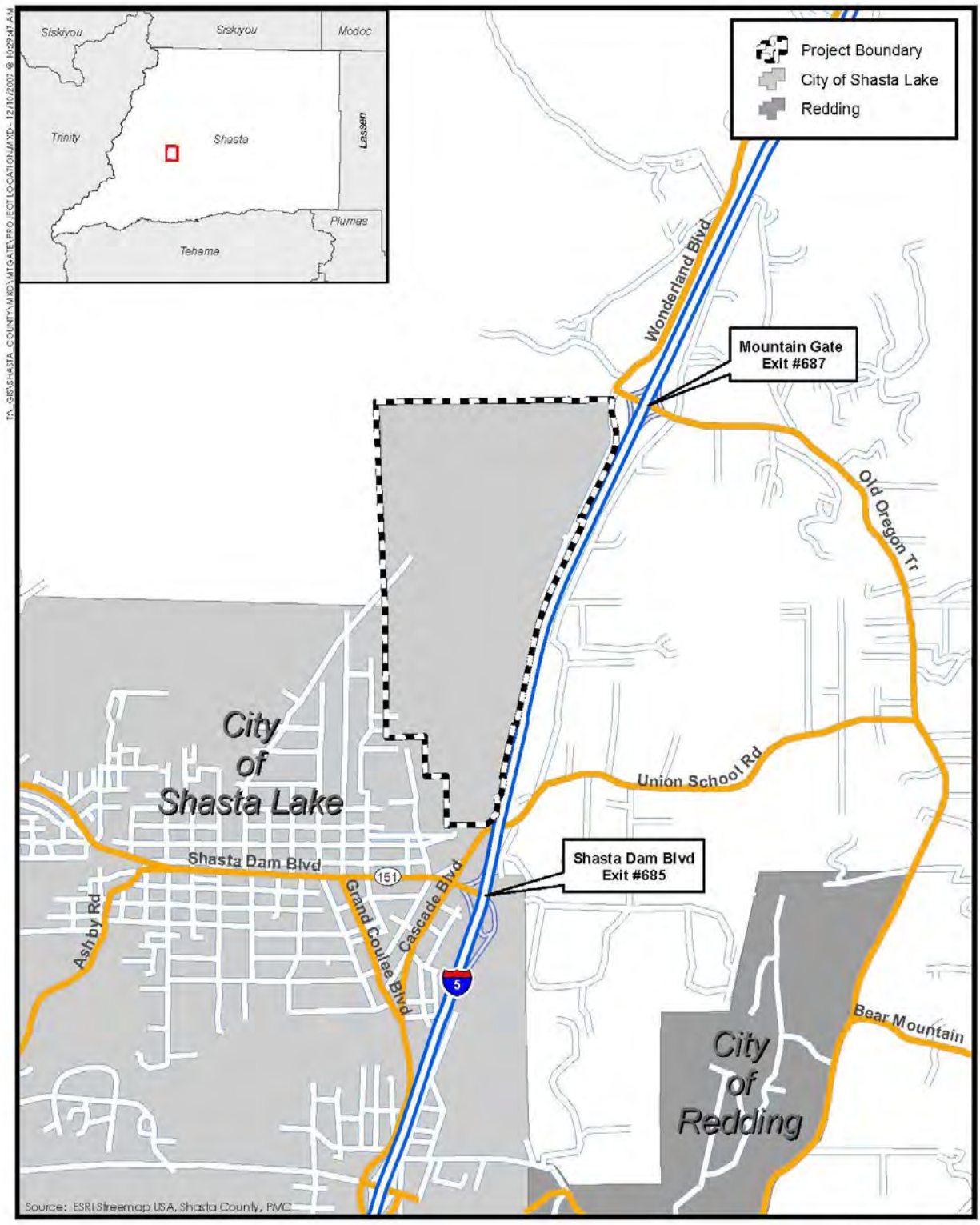


Figure 3.0-1
Project Location Map
PMC

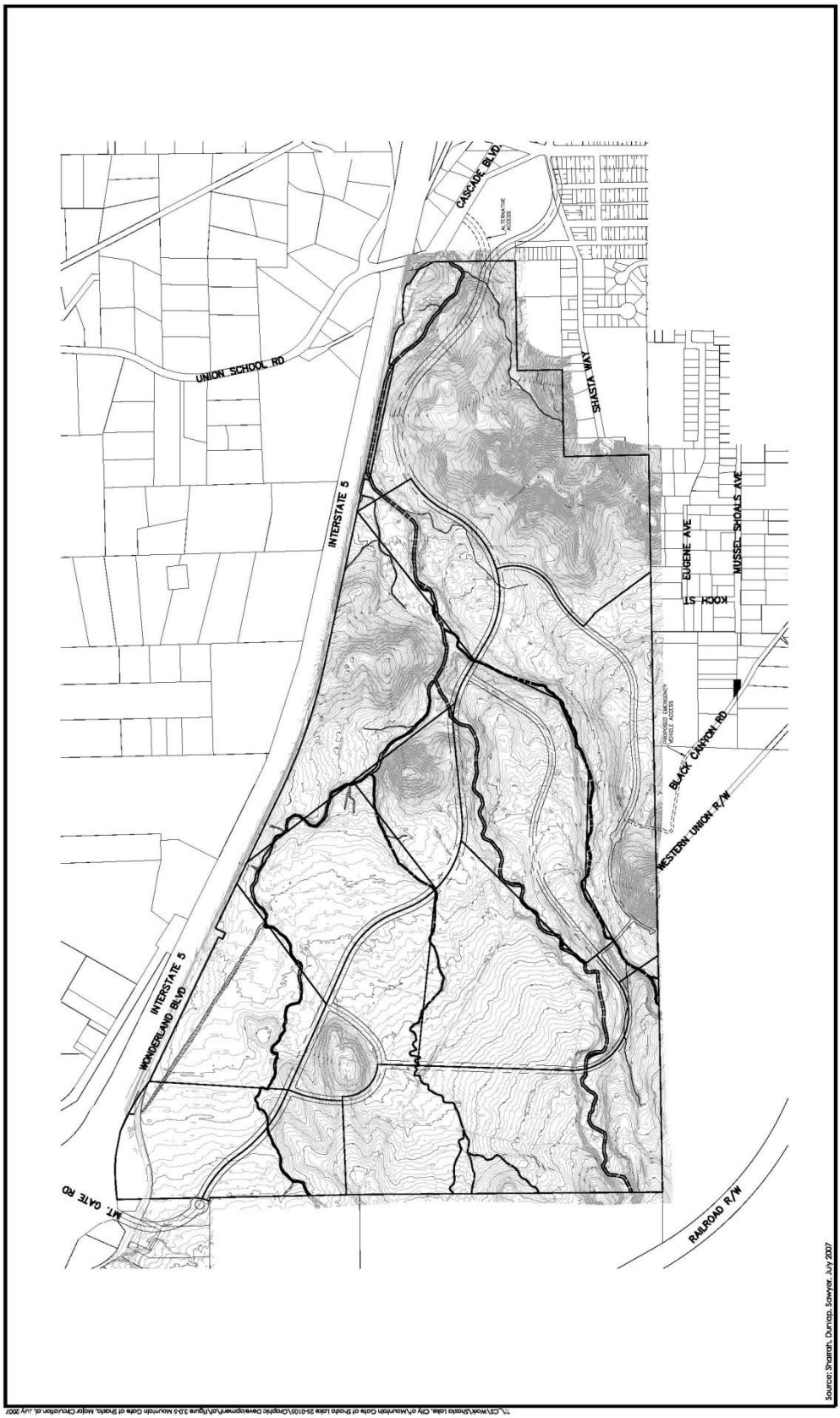


Figure 3.0-2
Mountain Gate at Shasta, Major Circulation



Figure 3.0-3
Schematic Land Plan
Mountain Gate at Shasta Lake
PMC

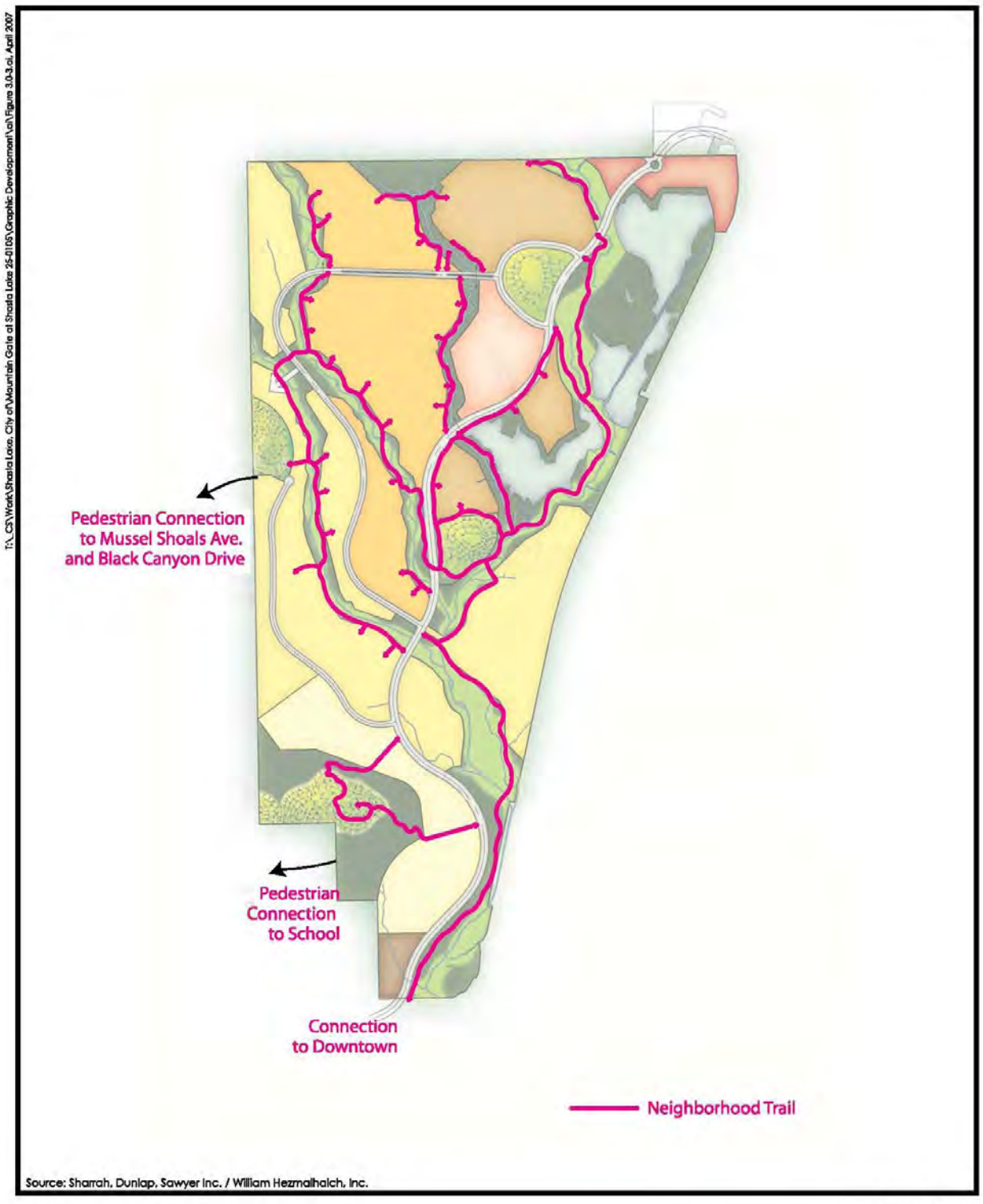


Figure 3.0-4
Neighborhood Trail Map
Mountain Gate at Shasta Lake

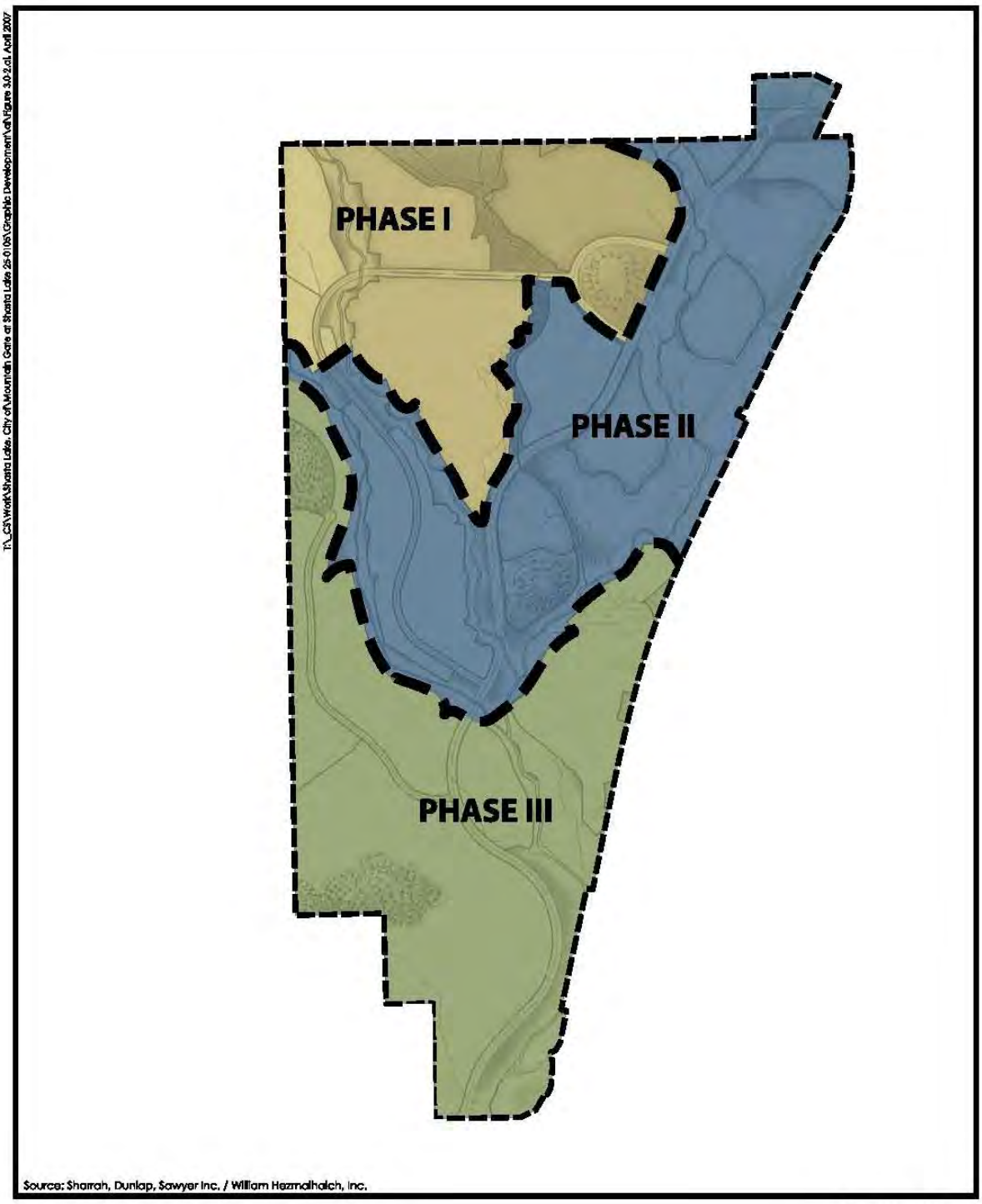


Figure 3.0-6
Phasing Plan
Mountain Gate at Shasta Lake

4.0 ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.1 AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☒	☐	☐	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☒	☐	☐	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐	☐	☐
d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The Mountain Gate at Shasta Area Plan site is located in the northeast portion of the City of Shasta Lake, in northern California approximately 8 miles north of the City of Redding and approximately three miles from the south shore of Shasta Lake. Existing topography consists of gentle to moderate slopes. Near the southern portion of the property there are hillside slopes that exceed 10 to 20 percent slope. The existing native vegetation consists of blue oak, interior live oak, digger pine, small patches of manzanita, various annual grasses and forbs including emergent wetlands and riverine habitats throughout the project vicinity. There are two creeks, Moody Creek and Rancheria Creek that meander through the center of the property in a northwest to southeast direction.

DISCUSSION OF IMPACTS

a) Would the project have a substantial adverse effect on a scenic vista?

Potentially Significant. The project site is located on the west side of Interstate 5 between the Mountain Gate and Shasta Dam Boulevard interchanges. Shasta Lake is approximately 3 miles from the project site, but is not visible from the project boundaries. Along the north and west viewsheds there are gradual slopes increasing in relief forming a ridgeline of rocky outcropping. These clustered rock outcroppings create an attractive visual gateway to the City of Shasta Lake. As the land formations gradually increase in slope from the valley floor to jagged rock outcroppings, this geologic view displays a wide array of vegetation and wildlife within the project area. The proposed hillside development may have impacts on scenic views. The site will be adversely impacted by night lighting from development, which could alter the views to the north of the sight. Views of Mt. Lassen are not visible from the project site. Biological constraints related to wetlands and stream corridors will affect design, and may help retain some of the visual character of the site. Development of the Area Plan considers the aesthetic impacts related to the project and the City's Grading, Erosion Control and Hillside Development Ordinance provides direction on extent of landform change permitted within the City. Impacts to aesthetics are potentially significant and will be further discussed in the EIR.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Potentially Significant. No state scenic highway is located adjacent to or near the project site. All of the parcels are open vacant land with no buildings. Sporadic gatherings of valley oaks, wetlands, and ephemeral streams exist on the property. However, Shasta Lake General Plan Policy C-k states "Establish Route 151 between North Boulevard and Shasta Dam, Shasta Park to Digger Bay, and the existing and future road segment of Wonderland Boulevard (changed to Cascade Boulevard) between Shasta Dam Boulevard and Mountain Gate Interchange with Interstate 5 as scenic routes." Development of this project may impact implementation of this policy." This impact is potentially significant and will be further evaluated in the EIR.

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

Potentially Significant. Development of this property will introduce residential and commercial uses where it is currently vacant and in its natural state. The introduction of structures, streets and other necessities for development will change the visual character of the area. The project site contains valley oaks indicating there is oak woodland habitat that could be directly affected by project construction, although approximately 236 acres of the site would be kept as open space, parks and trails. This impact is potentially significant and will be further evaluated in the EIR.

d) Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Potentially Significant. The project would introduce several new sources of light onto the site, such as streetlights, lighting from residences and other buildings. Public facilities such as the park and recreation areas could also introduce more lighting. New light sources would increase the overall level of light at night, reducing night sky visibility and affecting the general character of the area. Impacts due to increased light are considered potentially significant and will be evaluated in the EIR.

CONCLUSION

The project would have potentially significant impacts on aesthetics. The EIR will further analyze any visual impacts resulting from the project, including an overall change in the existing rural character of the project site to a more urban nature. This includes the existing and proposed land uses surrounding the project to ensure that the project components are compatible. The impacts of increased light and glare from the project will be evaluated further throughout the environmental review process. Aesthetic impacts related to development on the project site will be evaluated in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

4.2 AGRICULTURE AND FOREST RESOURCES.

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland.) In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The City of Shasta Lake General Plan does not establish areas of prime farmland in or adjacent to the City. There are no areas identified as prime farmland located in or near the project site. According to the "Williamson Act Contract Ranches Agricultural Preserve 2003 of Shasta County" there are no prime agricultural lands found within the project site. The nearest agricultural preserve is approximately 5 miles east of the project site.

DISCUSSION OF IMPACTS

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. Prime Farmland is land that has been used for irrigated agricultural production and meets the physical and chemical criteria for Prime Farmland as determined by the U.S. Department of Agriculture, Natural Resources Conservation Service. Unique Farmland is farmland of lesser quality soils used for the production of the state's leading agricultural crops. Farmland of Statewide Importance is similar to Prime Farmland but generally includes steeper slopes or less ability to store soil moisture.

According to the *Important Farmland in California* map published by the California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), the project site is located in an area designated as "Urban and Built-Up Land." There is no Prime, Unique or Farmland of Statewide Importance mapped within the City. This impact will not be discussed in the EIR.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The project site currently has General Plan designations of Mixed Use (MU), Suburban Residential (SR), and Urban Residential High (URH), and agricultural uses are not permitted in these zones. There are no Williamson Act Contracts that affect the project site. This impact will not be discussed in the EIR.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project, which includes residential and commercial uses, is located in an urbanized area. The project does not propose a zone change that would convert existing forest or timberland zoning.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. See discussion under Section 2.c above.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?

No Impact. The subject property is not being used as farmland or for any agricultural production or activities, and the project would not affect any existing farming operations in the area. Therefore, the project would have no impact regarding the conversion of farmland of concern. This impact will not be discussed in the EIR.

CONCLUSION

As the project would have no significant impacts on agricultural resources, this issue will not be addressed in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact

4.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The City of Shasta Lake is located within the Shasta County Air Quality Management District (SHAAQMD). Shasta County resides in the northern end of the Sacramento Valley surrounded by the Klamath and Coastal Mountains to the northwest and the Cascade Mountains to the north and east. Sea breezes flow over the San Francisco Bay Area and into the Sacramento Valley, transporting pollutants from the large urban areas. These air pollutants intensify by a temperature inversion layer that traps air at lower levels below an overlying layer of warmer air. Due to relatively stable atmospheric conditions, pollutants will not disperse until atmospheric conditions become unstable. In Shasta County the potential for significant air pollution is considered high.

The Federal Clean Air Act of 1971 and Clean Air Act Amendments (1977) established the National Ambient Air Quality Standards (NAAQS) for several air pollutants, referred to as "criteria pollutants," which are promulgated by the U.S. Environmental Protection Agency (USEPA). The state of California has also adopted its own California Ambient Air Quality Standards (CAAQS), which are promulgated by the California Air Resources Board (CARB). The six original criteria pollutants are ozone, carbon monoxide (CO), particulate matter less than 10 microns in diameter (PM_{10}), nitrogen oxides (NO_x), sulfur

dioxide (SO_2) and lead. Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) has recently been added to this listing. The specific standards are based on medical evidence that indicates that exposure to certain air pollutants is harmful to public health. The ambient standards are two-tiered. Primary standards are designed to protect public health, while secondary standards are designed to protect the environment (e.g., damage to vegetation or property).

Both the federal and state clean air laws require the identification and designation of areas that either do or do not meet ambient air quality standards. An attainment designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A nonattainment designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation(s) was caused by an exceptional event, as defined in the criteria. Areas for which there is insufficient data available are designated unclassified.

Shasta County has been designated a non-attainment area for state ozone standards and state PM_{10} standards. However, the County is designated an attainment or unclassified area for all other federal and state ambient air quality standards.

Within the City of Shasta Lake, the air quality regulating authority is the Shasta County Air Quality Management District (AQMD). The Shasta County AQMD monitors air quality within the county, and serves as the lead agency responsible for implementing and enforcing federal, state and county air quality regulations. Today, the main air pollution source in the City of Shasta Lake is motor vehicle emissions.

DISCUSSION OF IMPACTS

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant. As part of its enforcement responsibilities, the U.S. Environmental Protection Agency (USEPA) requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the California Clean Air Act requires an air quality attainment plan (AQAP) to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Northern Sacramento Valley Planning Area (NSVPA) 2009 Air Quality Attainment Plan is the most recent air quality planning document for the City of Shasta Lake portion of Shasta County and constitutes the region's SIP. SIPs are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain national ambient air quality standards (NAAQS) for ozone and particulate matter. State law makes the California Air Resources Board (CARB) the lead agency for all purposes related to the SIP. Local air districts prepare SIP elements and submit them to CARB for review and approval. The NSVPA 2009 AQAP includes forecast reactive organic gases (ROG) and nitrogen oxides (NO_x) emissions (ozone precursors) for the entire NSVPA region through the year 2020. These emissions are not appropriated by county or municipality.

The project would contribute emissions that may exceed the thresholds for the Shasta County AQMD during temporary construction activities. The effect upon implementation of the Air Quality Attainment Plan will further be evaluated in the EIR.

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant. The project may contribute to an increase in particulate matter (PM_{10}) emissions, mainly from dust generated during clearing, grading and other construction activities. Shasta County is currently in non-attainment status for State PM_{10} standards. Impacts to air quality attributable to construction activities are temporary and would cease once construction is completed. Additional air quality impacts regarding PM_{10} may be generated by the use of woodstoves and fireplaces including anticipated cumulative increases in vehicle emissions upon completion of the project.

In addition, construction vehicles and equipment, and especially the use of architectural coatings, may generate significant amounts of reactive organic gases (ROG), which are an ingredient of ozone. Ozone and particulates are pollutants for which the County is in non-attainment status under State standards. Although construction impacts are temporary and would cease once construction is completed, nevertheless they may have a potentially significant impact on air quality while such activities occur. PMC and Ambient Consultants will be reviewing all applicable air quality regulatory framework, standards, and significant thresholds recommended by the Shasta County AQMD. Impacts of PM_{10} emissions and ozone from both project construction and operations are considered potentially significant and will be further evaluated in the EIR.

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?

Potentially Significant. As noted above, ozone and particulates are pollutants for which the County is already in non-attainment status under state standards. Development of the site could potentially be a significant source of ozone precursor emissions, mainly from vehicle traffic. For this project, future emissions will be projected using the CalEEMod air quality computer model. Localized concentrations of CO will be quantified using the CALINE4 model. The project development under current conditions may generate an increase in ROG, NO_X, and PM_{10} emissions that exceed the current thresholds stated by the Shasta County AQMD. The proposed project may increase these pollutants by a substantial amount and therefore, impacts are considered potentially significant and will be further evaluated in the EIR.

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant. Land uses considered sensitive receptors typically include residences, schools, playgrounds, childcare centers, hospitals, convalescent homes and retirement homes. As discussed above, the project may generate PM_{10} emissions due to construction activities. Although these emissions would cease with completion of construction work, residences adjacent to the project site could be exposed to elevated dust levels. Also, after construction work is completed, these residences could be exposed to PM_{10} emissions generated by possible woodstoves and fireplaces in residences on the project site. Ozone emissions generated by the project could also have adverse impacts on adjacent residences. Exposure of sensitive receptors to odorous or toxic air contaminants will be qualitatively assessed based on existing environmental documentation and further consultation with Shasta County AQMD. Therefore, impacts are considered potentially significant and will be further evaluated in the EIR.

e) Would the project create objectionable odors affecting a substantial number of people?

Less than Significant. The project site consists of residential and commercial development. These activities are not expected to generate any substantial odors. The surrounding land uses consist of residential to the south, vacant land north and west and Interstate 5 to the east. The Mixed Use (MU) land use designation permits activities such as commercial, businesses, or light industrial activities and recreation uses. All proposed uses have not yet been identified within the proposed Mountain Gate at Shasta Area Plan. Construction equipment used in the development of the site may generate odors, principally from exhaust fumes. These odors would occur primarily during working hours between 7:00 A.M. to 7:00 P.M. The Shasta County AQMD will be consulted to determine feasible mitigation measures that will be incorporated to reduce any impacts found to be significant. Odor impacts would be less than significant.

f) Would the project generate greenhouse gas emissions (GHGs), either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant. See discussion under Sections 4.3 a) – c) above. The project will generate GHGs, both directly and indirectly, that may have a significant impact on the environment.

The project would result in short-term emissions of GHGs during construction. These emissions, primarily Carbon Dioxide (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O), are the result of fuel combustion by construction equipment and motor vehicles. At full buildout, the project would result in direct annual emissions of GHGs during project operation. These emissions, primarily CO_2, CH_4 and N_2O, are the result of fuel combustion from building heating systems and motor vehicles. Direct emissions of CO_2 emitted from operation of the project are primarily due to natural gas consumption and mobile source emissions (e.g., motor vehicles. The project would also result in indirect GHG emissions due to the electricity demands of the project. In addition, the project would result in indirect GHG emissions due to wastewater treatment needs and solid waste handling.

g) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant. See discussion under Section 4.3 f) above. Shasta County is in the process of developing a Regional Climate Action Plan, and the project could conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

CONCLUSION

The project would have potentially significant impacts on air quality. The EIR will evaluate the meteorological conditions in the vicinity of the project that may affect air pollutant dispersal or transport. The air quality analysis will assess short-term (i.e. construction) and long-term (i.e. operational) impacts associated with the project and include a quantitative assessment of the project's contribution to localized mobile-source carbon monoxide (CO) concentrations at nearby roadway intersections. During the environmental review process potential impacts related to the development of the project site would be evaluated and discussed with Shasta County AQMD to determine feasible mitigation measures as recommended appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.4 BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☒	☐	☐	☐
c) Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?	☒	☐	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☒	☐	☐	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The proposed project is located in the grasslands just south of Shasta Lake at the base of the valley floor. The site is undeveloped with the exception of foot trails and some vehicle tracks. Existing natural vegetation includes blue oaks, valley oaks, digger pine, manzanita, grassland, and riparian vegetation. The site also includes emergent wetland characteristics and riverine habitats that occur throughout the project vicinity, particularly where deep pockets of soil have accumulated. There are two streams located on the property, Moody Creek and Rancheria Creek, which include unnamed ephemeral tributaries proceeding generally north-south through the project area. Additional streams in the vicinity include Churn Creek and Salt Creek to the west and southwest, Stillwater Creek to the east, and the Sacramento River located several miles west and southwest. The site is relatively level with gentle to moderate slopes with the exception of the southern portion of the site which consists of steep hillside slopes exceeding 10-15 percent.

DISCUSSION OF IMPACTS

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant. The proposed project site includes seasonal wetlands. Blue oaks and valley oaks are also present, which indicate the potential for loss of sensitive woodland habitat communities that could impact complex communities of diverse vegetation, wildlife species, and associated biotic resources. A wetland delineation study determined there are federally listed wetlands on site that may be considered jurisdictional waters of the United States, and thus subject to the Section 404 permitting process. There may also be state or federally listed species and/or sensitive habitat within the study area. Impacts are considered potentially significant and will be further evaluated in the EIR.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Potentially Significant. The project site contains grassland communities that, while regionally abundant, are underrepresented locally. Characteristics of foothill riparian and riparian scrub habitats, both of which are considered sensitive communities, exist on site. These habitats could be directly impacted by the project. The City of Shasta Lake General Plan policies address oak woodlands, riparian woodlands, vernal pools, emergent wetlands, riverine habitats, and open waters within the conservation, open space, and water resource elements. A complete biological analysis will be completed to ensure regulatory compliance in accordance with appropriate agencies. Impacts on riparian habitat and sensitive natural communities are considered potentially significant and will be further evaluated in the EIR.

c) Would the project have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?

Potentially Significant. As noted above, a wetland delineation study has been completed and determined there are federally listed wetlands on site that may be considered jurisdictional waters of the United States, and thus subject to the Section 404 permitting process. Until further information is obtained by the biological analysis it is unknown if there will be substantial adverse impacts. There are also sensitive habitat communities within the project site. These communities include wet meadows, foothill riparian woodlands, riparian scrub and ephemeral drainages. The project could directly and indirectly affect these areas and will be further evaluated in the EIR.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Potentially Significant. There are several native species and grasslands that exist throughout the property that indicate oak woodland habitat along Moody Creek and Rancheria Creek. Several ephemeral drainages and emergent wetlands are also present on the project site. Impacts are potentially significant and will be further evaluated in the EIR.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Potentially Significant. The City of Shasta Lake General Plan has a number of policies regarding the protection of natural resources and habitats. These policies address the preservation of habitat for fish and wildlife, creek corridors, riparian areas, wetlands migratory corridors and open space. Shasta Lake Municipal Code Chapter 12.36 (Tree Conservation) includes policies regarding the removal and replacement of protected trees. The proposed project may conflict with several of these policies. Impacts are considered potentially significant and will be further evaluated in the EIR.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?

No Impact. No habitat conservation plans, Natural Community Conservation Plans or similar plans apply to the project site. All documents provided by North Fork Associates during the environmental review process will be further analyzed. At this time there is no impact.

CONCLUSION

The project would have potentially significant impacts on biological resources. A complete biological analysis will be completed to ensure regulatory compliance in accordance with appropriate agencies. It has been determined that there are federally listed wetlands present on the site. The EIR will review and evaluate the biological analysis and integrate recommended mitigation measures as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.5 CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?	☒	☐	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☒	☐	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

ENVIRONMENTAL SETTING

The City of Shasta Lake's city limits are adjacent to the City of Redding city limits along most of Shasta Lake's entire southern boundary and part of its easterly boundary. The remainder of the city limits is adjacent to unincorporated Shasta County areas and Federal Bureau of Land Management lands.

The Redding area began to be settled by European-Americans in the 1850s with the discovery of gold along Clear Creek. The construction of Shasta Dam in the late 1930s to early 1940s brought nearly 2,000 to 3,000 workers to the undeveloped, isolated area where the City of Shasta Lake currently stands. During this time, the boomtowns of Central Valley, Pine Grove, Project City and Summit City began to develop. Many of the workers remained after completion of the Dam, expanding the population of the four communities. The City of Shasta Lake incorporated in 1993, absorbing the four communities into its boundaries.

An archeological study of the subject property was previously completed in 1981 by James Dotta. Jensen & Associates completed resurvey and site evaluation work in 1990, 1994 and 2005. An Archaeological Inventory Survey dated November 30, 2010, was completed by Sean Michael Jensen, M.A., Genesis Society. A search of state data bases, including all records and documents available at the Northeast Information Center, consultation with Redding Wintu, consultation with the Native American Heritage Commission, and intensive-level pedestrian survey has resulted in identifying five prehistoric and two historic sites within the project area.

According to the archeological reports all of the five prehistoric sites have been subject to subsurface testing via either formal testing or informal shovel test pits. One of these sites has been recommended significant by local Native Americans on the basis of the presence of petroglyphs (cupules). Two of the sites contain buried deposits in the form of a midden and limited non-artifactual midden constituents that could render them eligible for the National Register.

One historic site within the project area has been subjected to detailed recording and extensive archival research (Mazzini in Jensen 1990). This historic site collapsed and later was affected by fire; therefore, little integrity remains of the original built environment. The other historical site located within the project area is an unrecorded segment of the historic Shasta Road, also known as Waughs Ferry Road and Buckeye Road. Also see discussion under Conclusion below.

The November 30, 2010, Archaeological Inventory Survey includes a Treatment Plan for data recovery and/or preservation of these sites which will be used as the basis for establishing mitigation measures for the project.

DISCUSSION OF IMPACTS

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

Potentially Significant. See discussion under Environmental Setting above. Impacts are potentially significant and will be further evaluated in the EIR.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Potentially Significant. See discussion under Environmental Setting above. Impacts are potentially significant and will be further evaluated in the EIR.

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?

Less than Significant. No paleontological resources or unique geological features have been identified on the project site, and the potential for their occurrence is considered minimal. Impacts are considered less than significant.

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

Potentially Significant unless mitigation incorporated. There are no known burial sites on the project site. If human remains are unearthed during future development of the site, the provisions of California Health and Safety Code Section 7050.5 shall apply. Under this section, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition, pursuant to California Public Resources Code Section 5097.98. Impacts are considered potentially significant unless mitigation is incorporated and will be further evaluated in the EIR.

CONCLUSION

The project would have potentially significant impacts on cultural resources. The Cultural Resource Studies conclude site CA-SHA-1823 has significant and eligible cultural values. A long term monitoring plan would be implemented for this site, for which direct impacts will be avoided. Long-term monitoring shall include periodic site inspection implemented by a qualified archaeologist.

Based on the potential for a program of focused data recovery to acquire additional site information important in studies of regional settlement and land use patterns, it is recommended that two sites (CA-SHA-1085 and 1822) retain limited data classes that render them eligible for the National Register. Potential impacts related to future development on the project site would be evaluated further during the environmental impact review process, and the mitigation and monitoring plan will be implemented as recommended appropriate. The City will complete additional consultation with the Native American Community as part of the EIR process.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.6 GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☒	☐	☐	☐

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☒	☐	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☒	☐	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The City of Shasta Lake is located in an area of moderate seismic activity. According to the General Plan, historical seismic activity has been low except for 1998 when several earthquakes occurred in the area. There has been no significant damage or loss of life due to earthquakes occurring near or in the city. Some large earthquake events have shaken the Shasta Lake area, such as the 1906 San Francisco earthquake, although they occurred outside of the region. The strongest known earthquake experienced in the Shasta County region was in November of 1998 when an earthquake magnitude of 5.2 occurred three to six miles northwest of Redding.

While a number of faults occur in the Shasta Lake region, there are no active faults within 35 miles of the County. To date there have been no reported surface ruptures in the immediate Shasta Lake area. The majority of the Shasta Lake Planning Area is situated on a series of alluvial sand and gravel terraces formed within the floodplain (and former floodplains) of the Sacramento River. At this time there are no known faults located within the project area and will be further evaluated in the EIR process.

DISCUSSION OF IMPACTS

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

No Impact. According to the 2010 Fault Activity Map of California, no faults are located on the project site.

ii) Strong seismic ground shaking?

Less than Significant. As previously noted, the Shasta Lake area is located in an area of relatively low seismic activity, with no earthquakes greater than magnitude 5.2 having occurred in the vicinity. Adherence to the California Building Code adopted by the City, which includes seismic safety standards, would reduce potential ground shaking impacts on any future development on the project site. This impact is considered less than significant and will not be addressed in the EIR.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant. Liquefaction occurs when loose, saturated granular soils lose their strength due to a sudden buildup of water pressure, which is induced by a seismic event. Soils near rivers

and streams may be especially prone to liquefaction. The probability of liquefaction occurring on the project site is potentially low based on the lack of significant seismic events in the vicinity. However, the probability could be moderate due to the number of ephemeral streams, emergent wetlands, Moody Creek and Rancheria Creek in the case of a significant seismic event.

All hazards associated with liquefaction will be addressed in a geotechnical soils report, as a required provision of the Subdivision Map process. The project development is required to comply with seismic standards set forth in the California Building Code. Therefore, this impact is considered less than significant and will not be further addressed in the EIR.

iv) Landslides?

Less than Significant. Alterations in topography and ground surface relief can be expected throughout the development process and create the potential for landslides. Displacement, disruption, and compaction of soil can be anticipated in the grading processes. The City's Grading, Erosion Control and Hillside Development Ordinance and plan review process include measures designed to reduce impacts from construction on unstable soil conditions. Therefore, this impact is considered less than significant and will not be further addressed in the EIR.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Potentially Significant. Construction activities associated with the project, particularly grading, would disturb soils on the site, increasing the erosion potential. Although Best Management Practices (BMP's) and erosion control measures to minimize erosion can be used successfully, some erosion of cuts, fills, roadside drains and downstream areas could occur throughout the lifetime of the project. Erosion impacts are considered potentially significant and will be further evaluated in the EIR.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Potentially Significant. The project is not located in a geologic fault zone according to the 2009 Seismic Hazard Zone Map. Part of the project would be developed within a hillside area. There are also several ephemeral streams and wetlands scattered throughout the site. In accordance with the California Building Code a geotechnical soils report is required prior to development to determine all appropriate measures and development standards to reduce the potential for any on or offsite landslides. Impacts are considered potentially significant and will be further evaluated in the EIR.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Potentially Significant. As noted above, the California Building Code would require a geotechnical soils report prior to development that would identify expansive soils and determine all appropriate measures and development standards to reduce the potential impacts to life or property. Impacts related to expansive soils are considered potentially significant and will be further evaluated in the EIR**.**

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The project would not require the use of septic tanks, as it proposes to connect to public sewer provided by the City. Therefore, there is no impact related to the disposal of wastewater by septic tanks or alternative disposal systems.

CONCLUSION

Due to the amount of sensitive biological features on the site, the preliminary grading plan will be an important area of focus for the Area Plan and analysis in the EIR. The City and the applicant will be working closely to minimize the impacts on soils and sensitive habitat communities. The intent of the applicant is to customize the grading in a manner that will reduce impacts in areas not identified or scheduled for development. Best management practices will be reviewed for accuracy and integrity as appropriate to ensure erosion control methods are effective throughout the construction phases and project completion. The project has the potential for significant impacts on geology and soils. Potential impacts related to development on the project site would be evaluated in the EIR and mitigation measures recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.7 HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☒	☐	☐

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The project site is located in the north end of the Sacramento Valley. The site is undeveloped with the exception of foot trails and vehicle tracks. Existing natural vegetation includes blue oaks, valley oaks, digger pine, manzanita and grassland. There are gentle to moderate slopes along the south and west property boundaries. The project site is located within a "high" wildfire hazard zone.

DISCUSSION OF IMPACTS

a) Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Less Than Significant. A residential subdivision does not require the use of hazardous materials, except for household and lawn/garden products that are relatively small in quantity. In addition, future commercial/office uses would not likely use high quantities of hazardous materials. Some hazardous materials would be used in project construction associated with development. Roadway construction typically uses hot mix asphalt, which is composed of aggregate and asphalt cement, a viscous petroleum product. Hot mix asphalt cools rapidly and hardens once applied, and the low potential fire hazard associated with this material is eliminated once it hardens. The only other potentially hazardous materials that would be used during project construction would be motor vehicle fuels and oils that may present a hazard, only if spillage occurs. Use of these materials would cease once project construction is completed. The potential for spills is addressed in grading permit requirements. This impact is considered less than significant and will not be discussed in the EIR.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

No Impact. As mentioned above, the transport of hazardous materials is subject to strict federal, state and local regulations, the potential spill and accident impact is very small and is addressed by the construction permits required for the project. This impact will not be discussed in the EIR.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

Less Than Significant. While the proposed project is located adjacent to the Grand Oaks Elementary School site it will not emit hazardous emissions and would include hazardous materials only during construction phases of the project as discussed under Section a) above. This impact is considered less than significant and will not be discussed in the EIR.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The Cortese list is prepared in accordance with California Government Code Section 65962.5. A review of the most recent list on the website of the state Department of Toxic Substances Control EnviroStor Database indicates that there is one hazardous substance site approximately 1.5 miles southwest of the project site at 3872 El Cajon (previously the Valley Plating Company). The cleanup

oversight lead agency for the Valley Plating site is the Department of Toxic Substances Control. As the there are no hazardous materials on the proposed project site, or affected by construction, this impact will not be discussed in the EIR.

e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The nearest public use airport to the project site is Benton Airpark, which is located approximately 10 miles to the southwest.

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips within the vicinity of the project site.

g) Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?

Potentially Significant Unless Mitigation Incorporated. The project site is adjacent to Wonderland Boulevard and the Interstate 5 / Mountain Gate Interchange, which would likely be the major evacuation route in the event of an emergency for the project. A new roadway would also be constructed to the south, connecting to Shasta Dam Boulevard. It is expected that construction vehicles associated with future development would have access to the site from Wonderland Boulevard and Shasta Dam Boulevard. However, most construction work would occur within the project site and result in a less than significant obstruction to emergency response plans. However, the EIR will discuss additional emergency access points to the project site that may be required in consultation with the Shasta Lake Fire Protection District.

h) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Potentially Significant. The project site contains varying degrees of wildland fire risks associated with topography and vegetated areas that range from open meadow and grassland with various slopes. As development occurs, the emphasis on fire protection would shift from wildland fire to structural fire protection. Nevertheless, development would bring buildings and people into contact with wildland areas during the construction period until buildout. This impact is potentially significant and will be further evaluated in the EIR.

CONCLUSION

The project would have a potentially significant impact with regard to exposing people to a risk of wildfires. Short-term hazards would be present during the construction phase in the form of vehicles and heavy equipment. Hazardous materials include the asphalt mix used during road construction and architectural coatings that may generate toxic odors. All hazards are considered potentially significant and will be further evaluated in the EIR process and mitigation recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.8 HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☒	☐	☐	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☒	☐	☐	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?	☒	☐	☐	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☒	☐	☐	☐
f) Otherwise substantially degrade water quality?	☒	☐	☐	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☒	☐	☐	☐
h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	☒	☐	☐	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?	☒	☐	☐	☐
j) Inundation by seiche, tsunami or mudflow?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The project is located on the valley floor approximately three miles from the south shore of Shasta Lake in a mixed grasslands and oak woodland habitat community. The site is undeveloped with the exception of foot trails and some vehicle tracks. Existing natural vegetation includes blue oaks, valley oaks, digger pine, manzanita, grassland, and riparian vegetation. The site includes emergent wetland characteristics

and riverine habitats that occur throughout the project vicinity, particularly where deep pockets of soil have accumulated. There are two streams located on the property, Moody Creek and Rancheria Creek, which include unnamed ephemeral tributaries proceeding generally north to south through the project area. Additional streams in the vicinity include Churn and Salt Creeks to the west and southwest, Stillwater creek to the east, and the Sacramento River located several miles west.

A portion of the site is also located within the 100-year flood plain. The site is relatively level with gentle to moderate slopes. The southwesterly portion of the site consists of steep hillside slopes that exceed 10-15 percent. The surrounding boundaries of the site have some mountainous characteristics with rock outcroppings. The applicant's biological consultant, North Fork Associates, will provide data on the wetland soils.

DISCUSSION OF IMPACTS

a) Would the project violate any water quality standards or waste discharge requirements?

Potentially Significant. It is assumed that the proposed project would connect to the municipal water and sewer system. However, no specific information is available at this time. Therefore, it is not known if wastewater generated by the project can be accommodated by the City's wastewater treatment plant, and if such accommodation would cause a violation of water quality standards or waste discharge requirements associated with the plant. Impacts are considered potentially significant and will be further evaluated in the EIR.

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level?

No Impact. The proposed project would connect to the City's water system. There are no known active wells within the project boundaries; however, if necessary, wells found on the project site would be abandoned in accordance with Shasta County Environmental Health Department standards, and in accordance with the Shasta Lake General Plan. No new wells are proposed for the project site. The site is not being used as an aquifer recharge area so it is not anticipated that natural aquifer recharge processes will be impacted. Therefore, the proposed project would have no adverse impact on groundwater in the vicinity and no mitigation is required.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Potentially Significant. The project would involve significant earth-moving activities that may alter drainage patterns, which has the potential to result in substantial erosion or siltation both on and off-site. New development is subject to the requirements of the Shasta Lake Grading, Erosion Control and Hillside Development Ordinance as well as requirements of the Regional Water Quality Control Board, including development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The requirements of a SWPPP emphasize the use of appropriately selected, correctly installed and maintained pollution reduction Best Management Practices (BMPs). Required elements of a SWPPP include: (1) site description addressing the elements and characteristics specific to the site, (2) descriptions of BMPs for erosion and sediment controls, (3) BMPs for construction waste handling and disposal, (4) implementation of approved local plans, (5) proposed post-construction controls, including description of local post-construction erosion and sediment control requirements, and (6) non-storm water management. A SWPPP has not been submitted that would demonstrate how the applicant intends to reduce some of the potential adverse impacts. This is considered a potentially significant impact that will be further evaluated in the EIR.

d) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?

Potentially Significant. The project would introduce impervious surfaces to an area that currently has none. While approximately 236 acres of the project site would be kept in open space, parks and trails, the remaining acreage would be developed to varying extents. Development such as buildings, parking spaces and streets would create impervious surfaces that would not allow precipitation and runoff to percolate back into the soils. The additional impervious surface would generate an increase in surface runoff that, if uncollected, would impact natural drainages and increase potential flooding.

It is unknown if the increased runoff generated by the project can be accommodated by the City's storm water management system. Therefore, the impacts of additional drainage on flooding are considered potentially significant and will be further evaluated in the EIR.

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Potentially Significant. As discussed above, the proposed drainage system for the project site has not been evaluated to determine its adequacy to handle the additional runoff that would be generated with development. The additional runoff could also carry potential contaminants, mainly deposits of motor vehicle fluids, but also pesticides and herbicides from park areas. These impacts are potentially significant and will be further evaluated in the EIR.

f) Would the project otherwise substantially degrade water quality?

Potentially Significant. The proposed project would include areas of development, such as streets, landscaped areas using fertilizers, and driveways, which could affect the quality of surface runoff. Possible contaminants from automobiles and yard care products would flow into the drainage system and affect water quality. These impacts are potentially significant and will be further evaluated in the EIR.

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Potentially Significant. The project site is located within a 100-year floodplain. There are two creeks, Moody Creek and Rancheria Creek, that meander across the property in a north to south direction. Seasonal wetlands are also located on the eastern portion of the property. It is unknown at this time whether the housing development will impact the 100-year flood plain. These impacts are potentially significant and will be further evaluated in the EIR.

h) Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

Potentially Significant. The project site is located within a 100-year floodplain. There is a potential for flooding within the project site. These impacts are potentially significant and will be further evaluated in the EIR.

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?

Potentially Significant. The project site is located within a 100-year floodplain but is not located within the Shasta Dam Inundation area. At this time there is not enough information to make any conclusive determinations. Therefore, these impacts are significant and will be further evaluated in the EIR.

j) Would the project be subject to inundation by seiche, tsunami or mudflow?

Less than Significant. Because the project site is located a distance of approximately three miles from the closest water body, Shasta Lake, there is no potential for seiche or tsunami activity. Additionally, the City of Shasta Lake does not have a history of experiencing mudflows.

CONCLUSION

The EIR will contain information on Hydrology and Water Quality based on information provided by the applicant. Best Management Practices (BMPs) will be included as appropriate to ensure water quality during construction and after occupancy of the project. The project would have potentially significant impacts on hydrology and water quality. Potential impacts related to development on the project site will be evaluated in the EIR and mitigation measures recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.9 LAND USE AND PLANNING Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐	☐	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The primary land use plan applicable to the project site is the City of Shasta Lake 1999 General Plan. The General Plan provides a regulatory framework for land development within the City by regulating the location and intensity of land use. The current General Plan was adopted in 1999. Under the General Plan, the project site is designated as Mixed Use (MU), allowing varying residential densities, Suburban Residential (SR), 3 dwelling units per acre and Urban Residential High (URH) uses, 20 dwelling units per acre. A General Plan Amendment is proposed to change approximately 141 acres from Suburban Residential (SR) and Urban Residential High (URH) to Mixed Use (MU).

The City of Shasta Lake Zoning Ordinance implements the general guidelines to land use development set forth in the Shasta Lake General Plan. The Zoning Ordinance establishes land use categories and defines development regulations for each category, such as lot size, density, and setbacks from parcel boundaries. The project site is currently zoned Planned Development-Specific Plan (PD-SP). A rezone is required to change the existing zoning to Planned Development (PD) to accommodate the proposed project. The PD zoning designation will establish a unique comprehensive outline for clustered housing development standards related to densities and design arrangement relevant to lot sizes. The purpose of

the General Plan Amendment and Rezone would ensure project consistency within the proposed Mountain Gate at Shasta Area Plan and the Shasta Lake General Plan regulatory framework.

DISCUSSION OF IMPACTS

a) Would the project physically divide an established community?

No Impact. Land use impacts are considered significant if a proposed project would physically divide an existing community (a physical change that interrupts the cohesiveness of the neighborhood). The project site is currently vacant. Properties to the south and southwest are developed primarily with single-family residential uses. Grand Oaks Elementary School is located southwest, adjacent to the project site. Properties to the northwest are vacant. Properties to the north along Wonderland Boulevard are developed with single-family residences. Properties to the east, on the east side of Interstate 5, are developed primarily with lower density single-family residential uses. The planned circulation system would connect with the existing street system to the south and would not create a barrier for existing or planned development. Therefore, the project would not divide an established community.

b) Would the project conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant. The Mountain Gate at Shasta Area Plan is designed to establish development standards within the project boundaries in accordance with the City's General Plan goals, policies and implementation programs. The EIR will discuss the compatibility of the proposed General Plan Amendment and Area Plan with the remainder of the City's General Plan policies and ordinances adopted for the purpose of avoiding or mitigating environmental effects.

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. As discussed in Section 4.4, Biological Resources, no habitat conservation plans or natural community conservation plans are applicable to this project.

CONCLUSION

The purpose of the General Plan Amendment and Rezone is to ensure project consistency within the Mountain Gate at Shasta Area Plan and the Shasta Lake General Plan regulatory framework. The EIR will evaluate the project in context with the existing land use patterns and character of the surrounding area. The project would have potentially significant impacts on land use issues and may conflict with applicable land use plans and regulations. Potential impacts related to development on the project site will be evaluated in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.10 MINERAL RESOURCES Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

A Grassland and woodland habitat community dominates the project site with various ephemeral streams and wetlands including Moody Creek and Rancheria Creek. There are currently no mineral resource zones on the proposed project site that have been designated by the California Division of Mines and Geology (now the California Geological Survey). There are also no known significant mineral resources within the project site. Properties to the northwest are located outside of the Shasta Lake city limits and are designated as Mineral Resource according to the Shasta County General Plan.

DISCUSSION OF IMPACTS

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. As stated above, the project site is not located within an area designated by the California Division of Mines and Geology (now the California Geological Survey) as being within a Mineral Resource Zone (MRZ).

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. There are no mineral resource recovery sites delineated on any local general plan, specific plan or other land use map. Therefore, there would be no impact and no mitigation is required.

CONCLUSION

As the project would have no significant impacts on mineral resources, this issue will not be addressed in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.11 NOISE				
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☒	☐	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The project is located in the northeast section of the City of Shasta Lake, which is currently undeveloped. The only existing significant noise source in the vicinity is traffic on Interstate 5, which is adjacent to and east of the project site. The Shasta Lake General Plan contains a Noise Element that establishes noise standards. According to the Noise Element Policy N-(1), the maximum allowable noise exposure for residential uses from transportation noises is 60 decibels (dB) L_{dn}/CNEL for outdoor activity areas and 45 dB L_{dn}/CNEL for interior spaces. In accordance with the Shasta Lake General Plan Noise Element, a noise analysis will be completed based on the methodologies and thresholds recommended.

DISCUSSION OF IMPACTS

a) Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?

Potentially Significant. The project would introduce noise from residential and public uses into an area that currently has very little urban noise. A temporary increase in noise levels associated with project construction would occur during project development. In addition, the project would increase the amount of traffic on roadways in the vicinity, which would also increase noise along these roads. The proposed project is also adjacent to the proposed Moody Flats Quarry. Shasta County is in the process of preparing an EIR for the Quarry project, which would include a hardrock quarry, aggregate processing facility,

ancillary aggregate product facilities (e.g. ready-mix concrete plant, asphalt batch plant, and recycled construction materials plant) and aggregate truck and railcar loadout facility within the approximately 1,900-acre property in the unincorporated area of Shasta County. The main access road to the proposed Quarry is adjacent to the northerly boundary of the project site. Impacts are potentially significant and will be further evaluated in the EIR.

b) Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant. Ground borne vibrations are usually associated with heavy vehicle traffic (including railroad traffic) and with heavy equipment/industrial operations. The EIR will address noise and groundbourne vibration levels for trains traveling along the Union Pacific Railroad, generally located west of the project site. The evaluation will be based on existing environmental documentation, such as the City's Noise Contour Map, as well as ambient noise measurements conducted for this project. Vehicle traffic generated by the project would be mostly passenger car in character, with some light and medium trucks. Therefore this traffic mix is not expected to generate significant vibrations or noise levels.

As noted in Section a) above, there is a potential for increased noise and vibration associated with the proposed Moody Flats Quarry. Impacts are potentially significant and will be further evaluated in the EIR.

c) Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant. Because the project proposes a large residential and commercial development with accompanying recreational uses on land that is mostly vacant, it would likely lead to a permanent increase in ambient noise levels. This impact is considered potentially significant and will be evaluated further in the EIR.

d) Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant. A temporary increase in noise levels associated with project construction would occur during project development. Noise levels of construction equipment will be determined and resultant noise levels at nearby receptors (at given distances from the source) will be calculated. Residences adjacent to the project site could be exposed to elevated noise levels from construction. This impact is considered potentially significant and will be further evaluated in the EIR.

e) For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. As discussed in Section 4.7, Hazards and Hazardous Materials, the project is not located within two miles of a public airport or a public use airport.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. There are no private airstrips within the vicinity of the project site.

CONCLUSION

The EIR will contain the results of a short-term daytime noise monitoring study at various locations on and in the vicinity of the proposed project site to document the existing noise environment. The Federal Highway Administration's (FHWA) roadway noise prediction model (RD-77-108) and the California Department of Transportation's Sound 2000 computer modeling programs will be used to determine average daily (Ldn) and peak hour (Leq) roadway traffic noise levels. Distances to traffic noise contours for modeled roadway segments will be presented in the report. As previously noted, noise and ground borne vibration levels for trains traveling along the Union Pacific Railroad, will be evaluated based, in part, on existing environmental documentation, such as the City's Noise Contour Map, as well as ambient noise measurements conducted for this project. The project would have potentially significant impacts on noise issues. Potential impacts related to development on the project site would be evaluated in the EIR and mitigation measures recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.12 POPULATION AND HOUSING				
Would the project:				
a) Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☒	☐	☐	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

The construction of Shasta Dam began in 1938 and at its peak of construction, the dam project employed between 2,000 to 3,000 workers. During this time, the boomtowns of Central Valley, Pine Grove, Project City and Summit City began to develop. Many of the workers remained after completion of the Dam, expanding the population of the four communities. The City of Shasta Lake incorporated in 1993, absorbing the four communities into its boundaries. The State of California Department of Finance (DOF) estimated that this area had a population of 8,783 at the time of the 1990 U.S. Census. Following incorporation, DOF's estimate for the population base of the new city limits was 9,336. As of January 1, 2011, DOF estimates the population at 10,125.

DISCUSSION OF IMPACTS

a) Would the project induce substantial population growth in an area, either directly or indirectly?

Potentially Significant. The project proposes the construction of up to 1,787 housing units however, topography and site constraints would limit the overall density. Approximately 1,604 units will be considered the development limit of the site in the EIR.

The State Department of Finance, *City and County Population and Housing Estimates, January 1, 2011,* estimates the City's population at 10,125, with an average number of persons per household at 2.582. Based on 1,604 housing units, the proposed project is estimated to generate approximately 4,142 residents. Project impacts on population growth are potentially significant and will be further evaluated in the EIR.

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The project site is currently vacant and no existing housing will be displaced.

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As stated in b) above, no housing currently exists on the site, so development of the project site would not result in a displacement of people.

CONCLUSION

The project would have potentially significant impacts on population and housing issues. This impact is considered significant and will be further evaluated in the EIR using the City's Housing Element and General Plan.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.13 PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
a) Fire protection?	☒	☐	☐	☐
b) Police protection?	☒	☐	☐	☐
c) Schools?	☒	☐	☐	☐
d) Parks?	☒	☐	☐	☐
e) Other public facilities?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The City's General Plan requires extensive review of an Area Plan's impact on public services. The fiscal analysis component of the Area Plan must demonstrate that both the short and long term financial burden of the project is addressed. The method for addressing fiscal impacts will be included in the EIR.

Fire protection within the City of Shasta Lake is provided by the Shasta Lake Fire Protection District (SLFPD). SLFPD has two stations, with the main station on Ashby Court staffed full-time and the station in Summit City on Lake Boulevard staffed by volunteers. In addition to providing service to the City, SLFPD also provides direct protection to an approximately one square mile radius outside of the city limits, along with mutual aid to adjacent jurisdictions.

Law enforcement services are contracted through the Shasta County Sheriff's Department. The department provides 24-hour service. The Sheriff's Department has a substation located on Red Bluff Street. Response times for an emergency average two to five minutes travel time depending upon location. In emergencies, additional personnel are available through mutual aid agreements with other agencies and department resources.

The City of Shasta Lake does not have a hospital. There are two major medical centers in the city of Redding that offer a comprehensive range of inpatient and outpatient medical services. Air transport services include 24-hour air helicopter ambulance services and two airplanes.

The Gateway Unified School District currently has four schools within the City of Shasta Lake: Grand Oaks Elementary School (Grades K-6); Shasta Lake School (Grades K-8); Central Valley High School (Grades 9-12); Mountain Lakes High School (Grades 10-12). In addition, Shasta Lake Alternative School offers independent study and homeschooling for grades K-12.

The City provides other governmental services such as public works and road maintenance. The City Public Works Department also provides Parks and Recreation services. There are eight parks at this time that encompass approximately 44 acres within the City of Shasta Lake (including mini parks, neighborhood parks, community parks and special use areas). In addition there is a pedestrian, bicycle and trail system.

DISCUSSION OF IMPACTS

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

a) Fire protection?

Potentially Significant. Development of the project site would increase demand for fire protection services. Project impacts on fire protection are potentially significant and will be further evaluated in the EIR.

b) Police protection?

Potentially Significant. Development of the project site would increase demand for police protection services currently provided by the Shasta County Sheriff's Department. Project impacts on police protection are potentially significant and will be further evaluated in the EIR.

c) Schools?

Potentially Significant. Development of the project site would likely increase demand for school facilities and services. The proposed project is located in the Gateway Unified School District. Increased enrollment resulting from new homes built in the subdivision is mitigated as provided by state law at the time of issuance of building permits by payment of a School Facility (Developer) Impact Fee. The fee is paid directly to the Shasta County Office of Education to provide compensation for funding school facility expansion. Under Government Code Section 65996(b), as amended by the Leroy F. Greene School Facilities Act of 1998, the payment of impact fees is to be considered full and adequate mitigation for potential impacts on schools, notwithstanding the provisions of CEQA. Regardless, the projected impact to the school system will be discussed in the EIR.

d) Parks?

Potentially Significant. Shasta Lake General Plan implementation measure OSR-(1) states: "Provide five acres of neighborhood, community and creekside parks per 1,000 new residents...." In addition, the City's Subdivision Ordinance requires the dedication of land for park purposes at a ratio of one acre per 100 lots. The City's park master plan identifies a community park in addition to the neighborhood and creekside park requirement. The need for parks and recreation areas will be specified in the Area Plan and evaluated in the EIR.

e) Other public facilities?

Potentially Significant. The Area Plan will include a fiscal impact analysis. Roadways within the subdivision will become part of the City roadway system. The design of these improvements is intended for local residential traffic. Maintenance of the roads will be part of the City's responsibility, which is funded through various means including traffic impact fees, gas-tax, property tax, sales tax and the general fund. This impact will be further evaluated in the fiscal impact analysis of the Area Plan and the EIR.

CONCLUSION

The impact of the Area Plan on public services will be analyzed further and formalize the basis of the fiscal impacts that may be incurred from the project as required by the General Plan. The project would have potentially significant impacts on public services. Potential impacts related to development of the project site would be evaluated in the EIR and mitigation measures recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.14 RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☒	☐	☐	☐
b) Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The proposed development is located in the northeast section of the City. The City has a total of eight parks that encompass approximately 44 acres. The existing setting for parks and recreation facilities can be described as 2 mini parks with minimal improvements; 1 partially developed neighborhood park; 1 community park with walking trails, playground and soccer/ball field; and 4 special use areas with improvements ranging from softball/baseball fields, playground areas, skateboard park, and picnic benches. In addition, there is a pedestrian bicycle and trail system. The City Public Works Department manages the Parks and Recreation facilities.

DISCUSSION OF IMPACTS

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Potentially Significant. Buildout of the proposed Area Plan would result in the development of residential and other land uses that would bring new residents into the area, which for the most part is currently void of population. This new population would require the use of existing parks and recreational facilities. Project impacts on existing parks and recreation facilities are potentially significant and will be further evaluated in the EIR.

b) Does the project include recreational facilities, or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

Potentially Significant. The project would include preservation of open space areas surrounding creeks and wetlands habitat. These areas may include recreational facilities such as picnic areas and a trail system. The construction of these facilities may require excavation and may introduce lawn care products, which may have an adverse effect on the environment, introduce large volumes of people to a sensitive habitat as well as other adverse environmental effects. The project would also include two neighborhood parks and one community parks which could be developed with ball fields, playgrounds, and picnic areas. Project impacts of new parks and recreation facilities are potentially significant and will be further evaluated in the EIR.

CONCLUSION

As set forth by the City's General Plan, the Area Plan will incorporate park, recreation, and open space policies. The project would have potentially significant impacts on recreational facilities. Potential impacts related to development of the project site would be evaluated in the EIR and mitigation measures recommended as appropriate.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.15 TRANSPORTATION/TRAFFIC Would the project:				
a) Cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☒	☐	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Result in inadequate parking capacity?	☐	☐	☐	☒
g) Conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The City of Shasta Lake recognizes the need to provide transportation services and to construct and maintain a road circulation system to meet existing needs and accommodate growth in an orderly manner. Impacts on streets and roadways are generally determined on the basis of level of service (LOS). LOS is a qualitative measure of traffic flow on roadways and intersections that is graded from A to F, with A being the best condition. Shasta Lake General Plan Policy C-a states that the minimum acceptable LOS on City streets shall strive to be level C.

The primary roadways that would provide access to the project site would be Wonderland Boulevard (Interstate 5 / Mountain Gate Interchange), Shasta Dam Boulevard via either Cascade Boulevard or Shasta Way.

Shasta Lake General Plan Policy C-k states "Establish Route 151 between North Boulevard and Shasta Dam, Shasta Park to Digger Bay, and the existing and future road segment of Wonderland Boulevard (changed to Cascade Boulevard) between Shasta Dam Boulevard and Mountain Gate Interchange with Interstate 5 as scenic routes." In addition to the above policy, the Circulation Element includes specific implementation of the subject property to establish the precise alignment and design section of the future extension of Cascade Boulevard (previously Wonderland Boulevard) and the City shall designate the road section as a City of Shasta Lake Scenic Route.

A traffic analysis was prepared by Omni-Means for the 2005 project. The number of units, alignment and types of roadway, and scheduling of improvements all factored into the traffic analysis. The parameters for the traffic study were based on Caltrans requirements and evaluated trips along the Interstate 5 corridor. For background growth assumptions, information from the Shasta County Regional Travel Demand Model, as well as input from the City of Shasta Lake and City of Redding was used. Intersection and roadway improvements required to mitigate the traffic impacts identified in the analysis were quantified. Level of Service values were reported for each of these mitigated conditions, along with the project's fair share of improvements in terms of percentages using Caltrans methodology.

The recession halted the previous EIR effort before the document could be circulated for review and comment. Since then very little new growth has occurred in the City of Shasta Lake, or the region as a whole. The proposed project is smaller in size in terms of residential units and commercial development, and improvements have been made along the Interstate 5 corridor. These factors combine to make the previous traffic study very conservative in approach and conclusion. The City intends to make maximum use of the previous traffic analysis in this EIR for the current project believing that a new traffic analysis is unnecessary.

DISCUSSION OF IMPACTS

a) Would the project cause an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system?

Potentially Significant. Shasta Lake General Plan Implementation Measure C-(11) states: "Development of vacant parcels will require the developer or property owner to pay a fee that will be used toward the improvement of the 'minor arterial' and 'collector' streets identified in circulation table C-1 that are located within the geographic area the parcels are located within." The primary roadways that would provide access to the project site include Wonderland Boulevard (Interstate 5 / Mountain Gate Interchange), and Shasta Dam Boulevard via either Cascade Boulevard or Shasta Way. Impacts to local roadways are potentially significant and will be further evaluated in the EIR.

b) Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Potentially Significant. The City of Shasta Lake General Plan has established a peak hour level of service (LOS) standard of C as the minimally acceptable LOS for roads. LOS is a qualitative measure of traffic conditions ranging from A to F, with A being the best condition. Traffic generated by the project could cause the LOS on some local roadways to decline, in some cases possibly below LOS C. This impact is potentially significant and will be further evaluated in the EIR.

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The nearest public use airport to the project site is Benton Airpark, which is located approximately 10 miles to the southwest. The project would not result in a change in air traffic patterns, and this impact will not be evaluated in the EIR.

d) Would the project substantially increase hazards due to a design feature or incompatible uses?

Potentially Significant. One of the main access points to the site will be via the Interstate 5 / Mountain Gate Interchange to Wonderland Boulevard. As stated above, Shasta County is currently preparing an EIR for the proposed Moody Flats Quarry, which would also use this route as their main access point. In addition, the project will connect to the south to Shasta Dam Boulevard via either Cascade Boulevard or Shasta Way, and appropriate mitigation for the increase of traffic in this location needs to be identified. Impacts are considered potentially significant and will be further evaluated in the EIR.

e) Would the project result in inadequate emergency access?

Less than Significant. The project proposes main access points off Wonderland Boulevard and Shasta Dam Boulevard onto streets designed to City standards. The streets would provide adequate access for emergency vehicles entering the site. The project provides two fire access roads that are shown as the primary ingress and egress. Until further analysis the total number of access points to the project site for emergency vehicles is two. Once the Area Plan is established, the ingress and egress routes will be designed to accommodate emergency vehicle traffic to reduce impacts below a threshold that would potentially impact the project. This may require additional access points. These impacts will be discussed in the EIR.

f) Would the project result in inadequate parking capacity?

No Impact. Both existing and proposed zoning on the project site permits construction of a residential subdivision. The Shasta Lake Municipal Code sets forth parking requirements by land use, including commercial and office uses, with which future development projects must comply. The circulation element of the General Plan states under C-13 states, "Development proposals shall be reviewed according to the provision of the zoning and subdivision ordinance to ensure that adequate access, on-site circulation,

parking and loading areas are provided. The Mountain Gate at Shasta Area Plan includes a master development plan that addresses the services and facilities necessary to serve the area including roads, water, sewer, storm drainage, power, etc. In compliance with all regulatory standards there would be no impact on parking capacity and this will not be discussed in the EIR.

g) Would the project conflict with adopted policies, plans or programs supporting alternative transportation?

Less than Significant. Shasta Lake General Plan Policy C-c requires that new neighborhoods provide pedestrian-dedicated facilities, and Policy C-f requires the provision of bicycle facilities. The project circulation system will be further evaluated for consistency with policies in the EIR.

CONCLUSION

The project would have potentially significant impacts on transportation and traffic. Much of this analysis was completed for the previous project effort. The traffic analysis at the time evaluated a larger project in terms of both housing units and commercial space. Further, capacity improvements have occurred along Interstate 5 and along other study roadways since the original traffic impact statement was prepared. The EIR will contain the original report and indicate that the findings and mitigation measures from that report are still applicable to the proposed project. While it is possible that some additional analysis will be required, for example the Mountain Gate Interchange with Interstate 5, the intent of the City is to use as much of the previous traffic analysis as possible. Potential traffic impacts related to development on the project site will be evaluated in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.16 UTILITIES AND SERVICE SYSTEMS Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☒	☐	☐	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☒	☐	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☒	☐	☐	☐

e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☒	☐	☐	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐	☐	☐
g) Comply with federal, state and local statutes and regulations related to solid waste?	☒	☐	☐	☐

ENVIRONMENTAL SETTING

The City currently receives the majority of its water from Shasta Lake under an interim U.S. Bureau of Reclamation Water Supply contract. This interim contract was renewed in February 2002. Under the current contract with the Bureau, the City's water allocation is 4,400 acre-feet. An additional 50-acre-feet is provided by the Shasta County Water Agency through a supplemental agreement that is renewed annually. The City has agreements with Anderson-Cottonwood Irrigation District (ACID) for the long-term (40-year) transfer of 2,000 AF of water, and with MCM Properties, Inc., (MCM) for the long-term (40-year) transfer of up to 325 AF of water. However, these water transfers have not yet been approved by the Bureau of Reclamation. The City also has emergency inter-tie agreements with the City of Redding and with the Bella Vista Water District. These agreements allow for cross transfers of water to either agency in the event that additional water is needed.

DISCUSSION OF IMPACTS

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Potentially Significant. The City of Shasta Lake will provide wastewater treatment for the project. As discussed in Section 4.8a above, no specific information is available at this time. Therefore, it is not known if wastewater generated by the project can be accommodated by the City's wastewater treatment plant, or whether such accommodation would cause a violation of water quality standards or waste discharge requirements associated with the plant. Impacts are considered potentially significant and will be further evaluated in the EIR.

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially Significant. As stated above, no specific information on wastewater treatment is available at this time. The project may result in the expansion of existing facilities and will be further evaluated in the EIR.

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially Significant. The City of Shasta Lake may require the construction or expansion of existing facilities to accommodate the project. This impact is considered potentially significant and will be further evaluated in the EIR.

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Potentially Significant. The City of Shasta Lake would provide water service for the proposed project; however, it is unknown at this time what additional water supply entitlements or resources may be required. Long term water supply is considered a potentially significant impact and will be further evaluated in the EIR.

e) Would the project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

Potentially Significant. The City of Shasta Lake is the sole provider of sanitary sewer service within the City. With proposed future expansions, and correction of current inflow and infiltration difficulties, the treatment facility will be able to accommodate only a portion of the forecasted growth (Shasta Lake 2005 Wastewater Master Plan). The ability of the City to provide wastewater services will be further evaluated in the EIR.

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Potentially Significant. Solid waste generated in the Planning Area is disposed of at Shasta County's Richard W. Curry/West Central Sanitary Landfill. Under existing state permits, the landfill has sufficient capacity to accommodate the disposal of solid waste at least to the year 2017. To help reduce the waste stream, the City has established a contract with Waste Management Inc. for source reduction and recycling, which involves the collection of residential, curbside recyclables and green waste and community education. The Buckeye Transfer Station facility is also available for residents. The project would result in higher densities, which may exceed the projected waste flows for the year 2017 evaluated in the General Plan growth forecasts and will therefore be further evaluated in the EIR.

g) Would the project comply with federal, state and local statutes and regulations related to solid waste?

Potentially Significant. Solid waste services for the City of Shasta Lake are provided on a contract basis through Waste Management, Inc. The subject landfill has potential capacity until 2017 for the project's solid waste disposal needs. However, additional information is required to determine if the project can be accommodated at buildout. This will be further evaluated in the EIR.

CONCLUSION

The project would have potentially significant impacts on utilities and service systems, which will be addressed in the EIR.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
4.17 MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? "Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.	☒	☐	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

DISCUSSION OF IMPACTS

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of rare or endangered plants or animals, or eliminate important examples of the major periods of California history or prehistory?

Potentially Significant. As discussed in Section 4.4, Biological Resources, the project would have significant impacts on biological resources. Section 4.5 discusses potential impacts to cultural resources. These are considered potentially significant impacts and will be further addressed in the EIR.

b) Does the project have impacts that are individually limited, but cumulatively considerable?

Potentially Significant. The project as proposed would contribute cumulative effects on the environment. Potentially significant impacts which are cumulatively considerable occur in a number of areas and are discussed in Sections 4.1 Aesthetics, 4.3 Air Quality, 4.4 Biological Resources, 4.8 Hydrology and Water Quality, 4.11 Noise, 4.12 Population and Housing, 4.13 Public Services, 4.14 Recreation, 4.15 Transportation and Traffic, and 4.16 Utilities and Service Systems. This is considered a potentially significant impact and will be further addressed in the EIR.

c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant. Based on the discussions herein, the project could have environmental effects which could cause substantial adverse effects on human beings, either directly or indirectly, in several areas: Air quality, geology and soils, hazards (fire), hydrology and water quality, noise, public services, recreation, transportation/traffic, and utilities/service systems. This is considered a potentially significant impact and will be further addressed in the EIR.

5.1 SOURCES OF DOCUMENTATION FOR INITIAL STUDY CHECKLIST

The following documents were used to determine the potential for impact from the proposed project. Compliance with federal, state and local laws is assumed in all projects.

City of Shasta Lake General Plan (1999)

City of Shasta Lake Municipal Code (2012)

City of Shasta Lake Parks Master Plan (2005)

City of Shasta Lake Water Master Plan (2004)

City of Shasta Lake Wastewater Master Plan (2005)

Flood Insurance Rate Maps for the City of Shasta Lake, Federal Emergency Management Agency (2011)

Soil Survey of Shasta County Area, California, published by the U.S. Department of Agriculture, Soil Conservation Service and Forest Service, August 1974. Updated March 2005

California Department of Conservation*. Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance.*

California Department of Conservation Farmland Mapping and Monitoring Program (FMMP), *Important Farmland in California* map

California Environmental Protection Agency Cortese List Resources:
http://www.calepa.ca.gov/sitecleanup/corteselist/

Alquist – Priolo Earthquake Fault Zoning Maps
Omni Means. Traffic Impact Analysis (2005)

Genesis Society*. Archeological Inventory Survey (2005)*

Genesis Society*. Archeological Inventory Survey (2010)*

Special Studies completed for the proposed Moody Flats Quarry, Shasta County

Appendix 1.0-2

NOTICE OF PREPARATION - COMMENTS

Mountain Gate at Shasta
Scoping Meeting
April 16, 2012

Traffic:

Traffic increase and truck traffic

Road connections to Shasta Dam Boulevard and Wonderland Boulevard

Impacts to intersection of Cascade and Shasta Dam Boulevards.

Concerns with using Black Canyon Road for access.

Concerns with connecting to Shasta Way.

Impacts to Union School Road.

Trucks park here during snow storms (on vacant property and on the street near the intersection of Shasta Dam Boulevard and Cascade Boulevard).

Drainage / Watershed / Flooding

Seasonal creek across Red Bluff Street floods annually and needs to be routed to Moody Creek.

Concerns with watershed.

Moody Creek drainage. Potential flooding.

Air Quality

General comments about pollution.

Dust control.

Utility Systems / Water Supply

Wastewater Treatment Plant capacity and whether upgrades to the plant are needed.

Water supply concerns.

Electric distribution system - will substation be needed?

Other

Consequences of urban sprawl.

City of Shasta Lake
Mountain Gate at Shasta Area Plan
Scoping Meeting

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PLANNING

Public Comment Form
April 16, 2012

Note: ***Name, address and phone number are not required in order to provide a comment***

NAME: _____

AGENCY: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE: _____ **EMAIL:** _____

#	Comments:
	This is probably too late for the comments deadline, but maybe it would be helpful for you to know our concern.
(1)	Will this project require modification of Mussel Shoals Ave.? There's no discussion of this being possible now, but could it be a possibility in the future? Include that in public info - don't surprise us with that.
(2)	Why doesn't Shasta Lake have a say in the Moody Quarry? It will be a huge project and will have a huge impact on our city. It seems very passive for our City to say "we don't have any say... Just let them run all over us. We feel you are not supporting the city's citizens. I would respond better if you said "We have no say, but we've expressed our concerns/opposition in person + in writing, to the County (who does have a say)."

Off topic - could you publicize the dates/times/location of the City Council Meetings? It's hard to find that info, especially without a computer. Add the info on our bills?

City of Shasta Lake
Mountain Gate at Shasta Area Plan
Scoping Meeting

Public Comment Form
April 16, 2012

Note: ***Name, address and phone number are not required in order to provide a comment***

NAME: Cliff Jacoby

AGENCY:

ADDRESS: 4950 Red Bluff ST

CITY: SHASTA LAKE **STATE:** CA **ZIP:** 96019

PHONE: 275-4707 **EMAIL:**

#	Comments:
	ACCESS ROADS
	TO Project

City of Shasta Lake
Mountain Gate at Shasta Area Plan
Scoping Meeting

Public Comment Form
April 16, 2012

Note: ***Name, address and phone number are not required in order to provide a comment***

NAME: Stephen MORGAN

AGENCY: ~~Affiliation~~ Citizen of S.L.

ADDRESS: 13406 Hill Blvd, City of Shasta Lake

CITY: City of S.L. **STATE:** CA **ZIP:** 96085

PHONE: 530 275 1788 **EMAIL:** PAMSWIM@AOL.COM

#	Comments:
1	WASTE WATER TREATMENT PLANT will it be able to handle the EXTRA load or will S.L. have to fund EXPANSION
2	Effluent from WWTP can not be dumped in large amounts now, will waste water be further treated by up grades to WWTP and who pay's
3	Availbly of potable water to serve project - we ARE on a 25% reduction now what will the furture be
4	Electrical Distribution - will rates RAISE with the need to purchase EXTRA power for the project sub station has to be built

City of Shasta Lake
Mountain Gate at Shasta Area Plan
Scoping Meeting

Public Comment Form
April 16, 2012

Note: ***Name, address and phone number are not required in order to provide a comment***

NAME: ~~BRAD~~ DUPRE

AGENCY: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

PHONE: _____ **EMAIL:** _____

#	Comments:
	If this project comes to fruition & is all built out,
	how will all the traffic be handled by the
	development and Moody Flats Quarry?
	Will ~~an~~ new overpass be required over
	I-5?

DEPARTMENT OF TRANSPORTATION
OFFICE OF COMMUNITY PLANNING
1657 RIVERSIDE DRIVE
P. O. BOX 496073
REDDING, CA 96049-6073
PHONE (530) 229-0517
FAX (530) 225-3020
TTY (530) 225-2019

Flex your power!
Be energy efficient!

April 30, 2012

IGR/CEQA Review
Sha-5-24.08/22.14
Mtn Gate Meadows LLC
NOP EIR
SCH# 2012042010

Ms. Carla Thompson
Shasta Lake Planning Department
P.O. Box 777
Shasta Lake, CA 96019

Dear Ms. Thompson:

Thank you for the opportunity to review the Notice of Preparation of an Environmental Impact Report (NOP EIR) submitted on behalf of Mountain Gate Meadows LLC, for a mixed use development on 600 acres with 1,604 dwelling units and 195,584 square feet of retail and mixed use commercial uses. The project which is of regional significance (pursuant to California Code of Regulations, Title 14, Chapter 3, Section 15206), is located along the west side of Interstate 5 (I-5) between the Mountain Gate (Wonderland/Old Oregon Trail/I-5) and Shasta Dam Boulevard (State Route (SR) 151) freeway interchanges.

We appreciate the City having met with us on April 18, 2012 for early consultation. Our discussion included comparing the original proposal in 2005 to the revised project. We request further consultation on the revisions or amendments to data developed for the project which will assist in reaching agreement on the results of the traffic study.

We also look forward to the traffic study including the two pending projects (Moody Flats Quarry and the Shasta Wine Village) in the immediate vicinity in the cumulative traffic analysis. Please state whether additional pending projects in the City of Shasta Lake, Shasta County, or Redding will be included in the cumulative conditions or whether the analysis proposes to use the Shasta County Regional Traffic Demand Model for cumulative conditions. References or modifications made to any previous studies or published data should also be noted and provided to us.

The project is proposed to be phased. Please include a discussion in the EIR of whether the extension of Wonderland Boulevard will be included in the early phases of the project as an eventual parallel route to I-5. We look forward to the study considering the trip distribution of the project traffic utilizing (1) the Wonderland/Old Oregon Trail/I-5 interchange, (2) connecting Wonderland Boulevard to State Route (SR) 151 (Shasta Dam Boulevard), (3) the role of emergency access routes and (4) whether the routes will serve as secondary routes or as gated emergency access only.

The Alternatives may also consider whether cumulative traffic operations would benefit from the realignment of the Wonderland Boulevard access directly across from the Old Oregon Trail intersection. An exhibit of the potential alignment is attached.

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The preliminary information also considers two alternative extensions connecting Wonderland Boulevard to SR 151 via Shasta Way or via a connection to Cascade Boulevard. We look forward to reviewing the proposed lane configurations, intersection controls, and the capacity of these connections.

Caltrans requests that electronic copies of the traffic analysis be provided, including all input and output files. As part of the consultation process and to expedite the review of the technical data to identify potential errors or omissions prior to incorporation of the analysis into the DEIR, we suggest that the technical data be provided to Caltrans for review. While Caltrans would appreciate being allowed to review the administrative draft of the DEIR, we understand that this may not be possible. At a minimum, we request that we be able to review the raw traffic study data.

Please consider the needs of pedestrian and bicycles facilities, along with a safety evaluation to allow for the safe use by pedestrian and bicycles in the project area and the Wonderland/Old Oregon Trail/I-5 interchange. Similarly, the EIR should discuss the extension of transit service once a serviceable population is established and how transit would be accommodated in the progression of the development.

This project has frontage along I-5 and may be affected by transportation noise. We would appreciate receiving and reviewing any noise studies prepared for the project that determine whether practical and feasible mitigation measures are needed to be incorporated into the project for noise attenuation. The State will not be responsible for responding to any complaints regarding objectionable transportation noise or requests for desired noise attenuation, due to the proximity of the project from the State Facility.

The background information for the NOP EIR identifies two creeks (Rancheria Creek and Moody Creek) that drain through the property. Drainage from the project site will need to be properly collected and conveyed downstream without causing localized or regional flooding beyond the capacity of the existing facilities and stream courses. We would like to review the drainage study and related calculations assessing the potential impact to the State's facilities and the provision of adequate mitigation measures to address the State's concerns. We also offer the following cautionary general comments in regard to hydrology:

- Construction activities and placement of the new buildings and parking areas should not result in any additional surface water (storm water) runoff discharged to the State's highway right of way or to Caltrans' highway drainage facilities.

- No net increase to the 100-year storm event peak discharge into the State's highway right of way or Caltrans' drainage facilities may occur as a result of this project. Further, the developer must maintain or improve existing drainage patterns and facilities affected by this project to the satisfaction of the State and Caltrans. This may be accomplished through the implementation of stormwater management best management practices such as detention/retention ponds or basins, sub-surface galleries, on-site storage or infiltration ditches, as appropriate. Once

installed, the property owner must properly maintain these systems. The developer/owner may be held liable for future damages due to impacts for which adequate mitigation was not undertaken or maintained.

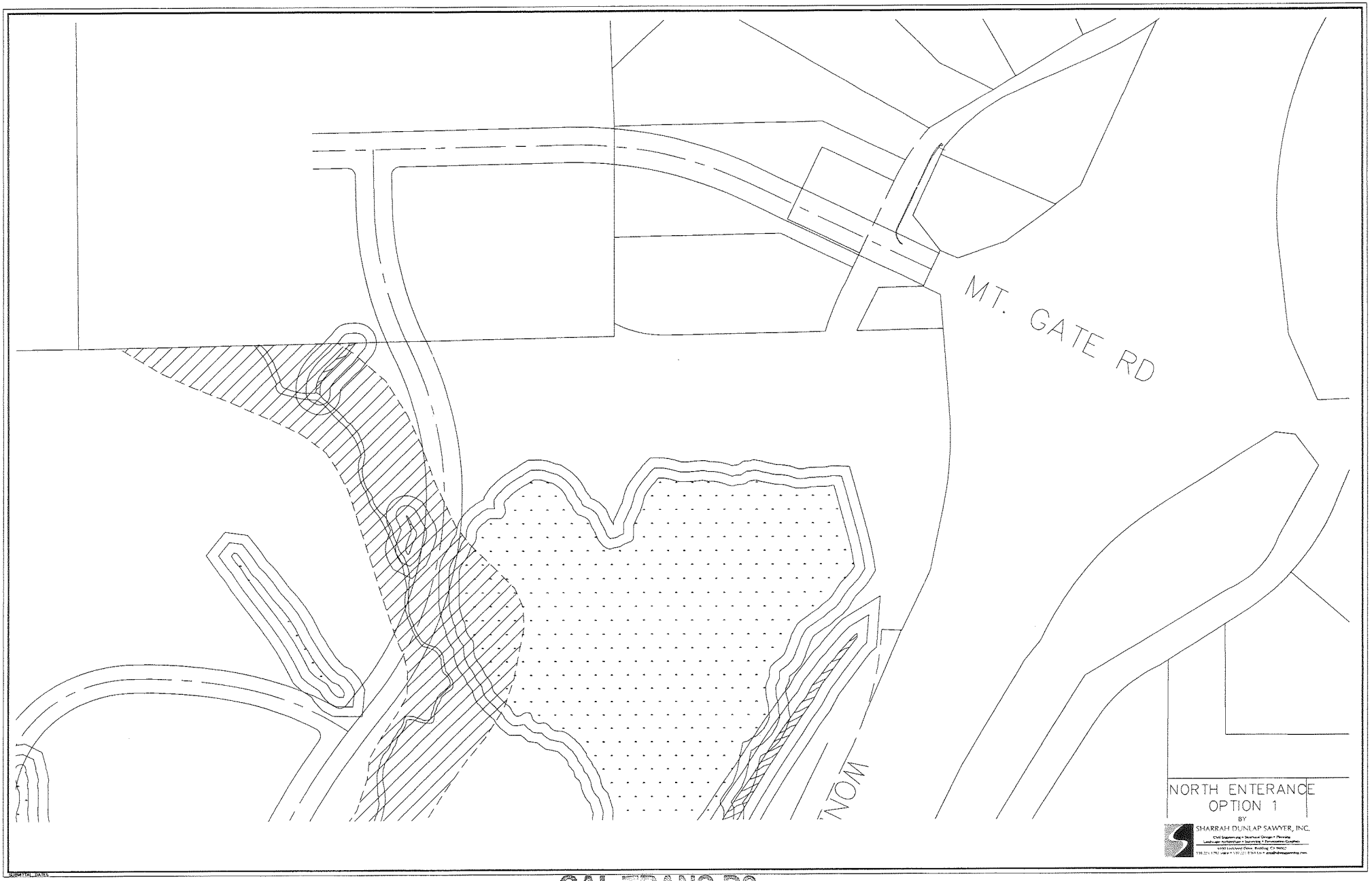
Thank you for providing us the opportunity to review this project. As indicated, we are very interested in the opportunity for continued participation in the preparation and review of the technical studies for traffic, hydrology, and noise for this project. Providing electronic program files of the technical analysis would also assist in a timely review. If you have any questions, please call me at (530) 225-3369.

Sincerely,

MARCELINO GONZALEZ
Local Development Review
Office of Community Planning
District 2

Attachment

1-26-12



SUBMITTAL DATES

CALTRANS D2
JAN 27 2012
PLANNING

Carla Thompson

From: Bill Walker [bwalker@co.shasta.ca.us]
Sent: Wednesday, May 02, 2012 11:00 AM
To: Carla Thompson
Subject: Shasta County Planning Division Response to the NOP for the EIR for the Mountain Gate at Shasta Project

May 1, 2012

Carla L. Thompson, AICP, Development Services Director
City of Shasta Lake
1650 Stanton Drive
Shasta Lake, CA 96019

Dear Ms. Thompson:

SHASTA COUNTY PLANNING DIVISION RESPONSE TO THE NOP FOR THE EIR FOR THE MOUNTAIN GATE AT SHASTA PROJECT

The following comments are from the Shasta County Department of Resource Management, Planning Division, in response to the Notice of Preparation for the Environmental Impact Report for the Mountain Gate at Shasta Project.

1. There does not appear to be any information (other than a project objective) regarding the potential jobs / housing balance of the project. It appears that many of the residents of the project would have to get in their cars to travel to jobs in some other part of the City Shasta Lake, or to the Cities of Redding or Anderson, or some other part of Shasta County. This would likely increase the total County vehicle miles traveled and result in significant and unavoidable air quality impacts.

2. It is not clear whether the project will be consistent with the City's General Plan Housing Element goals, policies, and programs for low-income housing.

3. There are only two entrance/exit points for the entire project, one at the northeast end and the other at the south end of the project site (not including an emergency access road that would connect to Black Canyon Road) with a single arterial through the project. The project would include traffic from 1,604 residential units (= ~16,040 vehicle trips per day) as well as additional traffic from the nearly 200,000 square feet of "non-residential" development.

This traffic design could result in serious traffic bottlenecks in the event of a wildfire or other type of emergency in the area. Emergency access would be limited and easily blocked.
It seems that there should be some integration of the road system of this project with the existing road system of the City of Shasta Lake, e.g. some connection(s) to Eugene Avenue, Mussel Shoals Avenue, Black Canyon Road, the north end of Shasta Way, as well as the other small streets which connect to Eugene Avenue. This may require some improvement to existing off-site streets. This would help with access as well as integrate the development with the City as a whole. Otherwise the development becomes a separate enclave, or a small sub-city in itself.
It seems that there should be at least one additional exit to a new arterial road along on the north site of the project.
The above concerns may affect the unincorporated areas to the north and west of the project site.

4. The cul-de-sac on the west side of the project is a dead-end road over 3,000 feet long. This may exceed City and State standards for the maximum length of a dead-end road. Even with an emergency access road, it is still not a good idea.

5. The proposed realignment of the project access road and the Wonderland Boulevard/Old Oregon Trail/Interstate 5 interchange should be shown in more detail on a plan.

6. There do not appear to be any sites shown on the plans for any public facilities in the project area. These public facilities could include schools, police stations, fire stations, and/or public utilities facilities. Given that the project would result in about a 40% increase to the existing population of the City of Shasta Lake, it seems that there would be some need for additional public facilities in the project area.

7. The Agricultural and Forest Resources section of the Initial Study uses only one source of information, the *Important Farmland in California* map, and does not appear to take into account the Natural Resources Conservation Service (formerly Soil Conservation Service) soils maps which show the site as including large areas of soils identified as "farmland of statewide importance," and "prime farmland if irrigated." It seems that the project could result in significant and unavoidable loss of prime agricultural land. This would be a County-wide impact.

8. What are the potential impacts of the Mountain Gate at Shasta project on the proposed Moody Flats Quarry project? What are the potential impacts of the proposed Moody Flats Quarry project on the Mountain Gate at Shasta project? We realize these questions may be somewhat difficult to answer because both projects are in approximately the same phase of the environmental review process.

9. Figure 3.0-3 Schematic Land Plan designates the proposed roadways and land uses throughout the project site. It appears that the roadway cross-sections shown in red are not consistent with the type and volume of traffic to be generated by the land use, and may have incorrect references to the roadway cross-sections shown in Table 3.0-4. For example, the Arterial (A) 77' cross-section should be used on the main arterial through the project site, with smaller cross sections on more minor roads.

10. Figure 3.0-6 Phasing Plan of the project description shows proposed Phase 1 of the project at the northwest corner of the project site and not adjacent to the developed area of the City of Shasta Lake. As shown, Phase 1 would be constructed as an island away from City services, and would require long extensions of roadways, water lines, wastewater lines, and power infrastructure to connect to existing infrastructure. Phase 2 includes the majority of land use designations with the greatest proposed density. Phase 2 will also require substantial infrastructure improvements as it is not contiguous to existing development.

11. The proposed trail system is somewhat discontinuous, with some sections isolated from the rest of the system and other sections which require jogs and travel along streets to get to another section of the trail. A more coherent and continuous system would encourage more use. It is not clear whether the trail system would be maintained by the City or by a private entity.

Thank you for the opportunity to comment on a project of County-wide importance. If you have any questions, please do not hesitate to contact me.

Sincerely,

Bill Walker, AICP
Senior Planner
Shasta County Department of Resource Management
Planning Division
1855 Placer Street, Suite 103, Redding, CA 96001
Phone: 530-225-5532; Fax: 530-245-6468
bwalker@co.shasta.ca.us

Shasta County

DEPARTMENT OF RESOURCE MANAGEMENT
1855 Placer Street, Redding, CA 96001

Russ Mull, R.E.H.S., AICP
Director
Richard W. Simon, AICP
Assistant Director

May 2, 2012

Development Services Director
Carla L. Thompson, AICP
City of Shasta Lake
P.O. Box 777
Shasta Lake, CA 96019

Dear Mrs. Thompson:

MOUNTAIN GATE AT SHASTA AREA PLAN (GPA 11-01; Z 11-02; SD 11-01)

The Shasta County Air Quality Management District (District) has reviewed the Notice of Preparation (NOP) for the proposed project. The District would like to offer the following comments based on our meeting with you and Seth Meyers from PMC.

Criteria Pollutants

- Construction Emissions should be modeled with URBEMIS or CalEEMod for each construction phase.
- Operation Emissions should be modeled with URBEMIS or CalEEMod accounting for the *District Rule 3:23 Fireplace and Solid Fuel Heating Device Usage*.
- Toxic Air Contaminates emissions associated with Interstate 5 should be qualitatively discussed using Sacramento Metropolitan Air Quality District's *Recommended Protocol for Evaluating the Location of Sensitive Land Use Adjacent to Major Roadways* and Caltrans I-5 trip counts.

Greenhouse Gas Emissions (GHG)

- GHG emissions should be quantified and the project should be compared for consistency with the strategies and goals of the Assembly Bill 32 Scoping Plan. Imposed mitigation should be presented in a menu approach with an established percent reduction that may be considered by development contractors.

Finally, the cumulative analysis should include the proposed quarry development, Moody Flats, as well as other projects in Shasta County.

Thank you for the opportunity to comment on the NOP. If there are any questions, please feel free to contact me at (530) 245-6499.

Sincerely,

Adam Fieseler

Adam Fieseler
Air Pollution Inspector II

AF/m

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CITY OF REDDING

DEVELOPMENT SERVICES DEPARTMENT
PLANNING DIVISION
777 Cypress Avenue, Redding, CA 96001-2718
P.O. Box 496071, Redding, CA 96049-6071
530.225.4020 FAX 530.225.4495

May 1, 2012
L-010-390-000

Ms. Carla Thompson
Development Services Director
City of Shasta Lake
P.O. Box 777
Shasta Lake, CA 96019

Subject: Notice of Preparation
Mountain Gate at Shasta Area Plan

Dear Ms. Thompson:

Thank you for the Notice of Preparation and Initial Study for a draft environmental impact report (EIR) being prepared for the Mountain Gate at Shasta Area Plan. The Redding Planning Division has reviewed the document and requests that the following be considered:

- Section 4.15 - Transportation/Traffic of the Initial Study discusses potential traffic impacts, including reference to increases in traffic volume on Interstate 5. While this is a State facility, traffic service levels on City streets at freeway interchanges can be impacted by interchange capacity. In view of the scale of the development potential of the project, the City requests that the project traffic impact analysis include freeway interchanges within the City, including and between Oasis Road and Bonnyview Road.

- Section 4.8 - Hydrology and Water Quality of the Initial Study notes the unknown impact of increased stormwater run-off from the project site. The City requests that the drainage analysis include a determination of whether the project site is within the watershed of Churn Creek and if so, analyze the potential for increased peak flow and related impacts within the city limits.

The City of Redding appreciates the opportunity to provide input on the scope of environmental analysis for this project. City staff is available to discuss our comments and concerns at your convenience. You may contact me at 530-225-4028 or demallie@ci.redding.ca.us.

Sincerely,

Douglas DeMallie
Planning Manager

DD:et
LTR12\E050112L-CT

c: Brian Crane, Public Works Director

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SHASTA LAKE FIRE PROTECTION DISTRICT

4126 ASHBY COURT SHASTA LAKE, CALIFORNIA 96019-9215 (530) 275-7474 FAX (530) 275-6502

April 24, 2012

Project: Subdivision 11-01 (Mixed use Area Plan – Mtn. Gate at Shasta)
Location: Northeast area of the City of Shasta Lake, West of I-5, Shasta Lake, CA
(APN: Numerous including 007-400-037, 52, 54; Parcels in Book 307 Pages 21, 22, 24, and 38)
Description: An area plan updating the General Plan, Zoning Plan, and creating a 1,700 plus lot subdivision).

Shasta Lake Fire Protection District – Potential Requirements based on preliminary information.

1) Applicant shall dispose of any brush, trees, or other vegetation cleared for construction and/or land development purposes prior to recording the final map. Disposal shall be in accordance with Air Quality Management Regulations, State and S.L.F.P.D. burning permit regulations, and City of Shasta Lake Development Services Department requirements.

2) Driveways and roadways shall at minimum provide access per the currently adopted Fire Code as Amended by the S.L.F.P.D. to within 50 feet of all structures on each parcel. Minimum driveway/roadway width is 18 feet with 1 foot shoulders on each side (20 feet total clear width) and 15 feet of vertical clearance for the entire required width and shall be capable of supporting at a minimum 40,000 loads. The ability to park emergency vehicles clear of the traveled way of all roadways both public and private. Whether or not the road is to be a public or private road all turnarounds shall meet the requirements of the City of Shasta Lake if public but shall at minimum meet those of the Fire Code as Amended by the S.L.F.P.D. in figure 2-40. "No Parking Any Time" signs as approved by CSL Public Works may be required and installed where appropriate to assure a minimum of 20 feet of clear width and that parking does not occur within required turnarounds, turnouts, or required road widths.

3) A steamer type fire hydrant is required at intervals of no more than 500 between fire hydrants along all roadways both public and private. Commercial and/or industrial areas will require specific location or spacing based on the exact development (every effort should be made to properly locate water laterals and mains in commercial areas to avoid having to dig up roads for future connections). All fire hydrants in residential zones or areas shall be capable of flowing at least 1,000 gallons per minute for fire flows in addition to maximum daily demand. All fire hydrants in commercial and/or industrial zones shall flow a minimum of 1,500 gallons per minute in addition to maximum daily demand however may require over 3,000 gallons per minute depending on the size and occupancy classification of the commercial/industrial development being protected. The exact type and location of all fire hydrants shall be preapproved by the Shasta Lake Fire Protection District prior to start of installation. Water system design meeting the above requirements shall be demonstrated by plans and engineering data provided to the Shasta Lake Fire Protection District and the City Engineer of the City of Shasta Lake prior to start of project. At this time it appears that the project proposes a 8" connection to the south and in the opinion of the Fire District this would be insufficient to serve as a secondary source or loop part of the system (especially if the primary source is taken off line for maintenance or repairs).

4) All buildings or structures shall be provided with street address markers that are located with respect to the nearest roadway so as to be clearly visible at all times. Numbers shall be a minimum of four (4) inches in height, 3/8" stroke, reflectorized and shall contrast in color with the background (Black on White, White on Black, or similar sharp contrast in color; **NO brass, gold, silver, chrome or other polished finishes**). Commercial development may require 6" or larger size numbers depending on visibility from roadway the business is addressed on.

5) Untreated wood shake and shingle roofing is not permitted in this area. All roofing materials and systems shall have at a **minimum a Class B** fire retardant rating.

6) Accumulations of wastepaper, weeds, combustible waste material, waste petroleum products, tires or rubbish of any kind shall not be permitted to remain in the yard areas. All parcels shall be maintained in a fire safe condition year-round.

7) A copy of the final recorded map shall be provided to the Shasta Lake Fire Protection District. If available this copy shall be on PC compatible media and in AutoCAD "dwg" format or other acceptable (dxf, etc.) format approved by the S.L.F.P.D.. If the map was hand drawn then a paper copy of the map is acceptable provided sufficient survey or other engineering information is on the document to allow the electronic recreation of the land division.

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CITY OF SHASTA LAKE
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8) All trails created as part of this project shall accommodate a light fire engine (wildland fire engine) and ambulance in order to provide for emergency responses on the trail system and access to open space areas in response to wildland fires.

9) All residential development will require that all dwellings have a fire sprinkler system as required by the current California Title 24 (CBC/CRC). In addition all dwellings located in Very High Fire Danger areas shall meet the requirements of Chapter 7A for development within these zones.

10) All commercial/industrial/other buildings or structures shall have fire sprinkler systems designed and installed per NFPA Standard 13 Requirements.

11) A Vegetation Management Plan developed by a qualified professional forester shall be prepared that addresses the maintenance of all open space and other areas of the development that will be left in a vegetative condition both during the phased development and after completion of the project. This plan must address how all vegetation will be kept in a fire safe condition year around so as not to pose a threat to any part of the rest of the project lands or any adjacent lands both developed and undeveloped.

12) Road naming must be addressed and finalized EARLY in the planning stages of this project so as to allow for street addressing and consistent references to roadways, trail, and other accessways. Of primary concern is the road connecting to Shasta Dam Boulevard and Wonderland Boulevard as numerous "versions" of previous project naming have created misconceptions and bad references that are carrying on to this project.

13) Due to the uncertainty of development completion in these economic times all phases of this project will have a minimum through road structure when proposed for development of over 50 dwelling units or designed to accommodate more than 150 persons. This is a full, City of Shasta Lake specification roadway that is open 24 hours a day, 7 days a week and a public roadway that is designed to be used at will by any member of the public. This is especially important when addressing "Phase I" as currently presented as it would be totally land locked and surrounded by vegetation with only one way in and out. A written plan addressing the exact timing of all roads and accessways must be provided and approved by the Shasta Lake Fire Protection District prior to final acceptance of this project plans. Any and all "Emergency Access/Egress Routes" will be completed prior to the start of work within the area served by the route. The proposed "Emergency Vehicle Access" route as proposed to the end of Black Canyon Road shall meet the requirements for a 20 foot roadway capable of supporting 40,000 pound fire apparatus and meeting all other requirements for roads of the Shasta Lake Fire Protection District. A temporary connection of this "Emergency Vehicle Access" route shall be constructed to "Phase I" and maintained until appropriate connections are provided to "Phase II" and the permanent connection to "Phase III" when each phase is constructed.

14) With adjacent development in mind the Shasta Lake Fire Protection District questions the viability of a traffic circle as proposed near the north end of the project. This intersection would regularly be used by heavy commercial vehicles which would have a difficult time navigating this obstruction. We would propose this intersection would best be controlled by a traffic signal with appropriate turn lanes. Also, due to the internal (to the City of Shasta Lake) traffic flow it would appear that there would be no point along the proposed "Road A" route that a traffic circle would not create a problem. If it is to be a "traffic calming" mechanism then other methods should be evaluated along this route.

15) This entire development is subject to Impact Fees payable to the Shasta Lake Fire Protection District which at current would be $1,046 per dwelling and variably increases for multifamily, commercial, industrial, and other development. The impact fee ordinance allows for an annual evaluation for increase of current numbers and the exact cost cannot be determined until the time of building permit application. So far no increases have taken place since September 2006 when the ordinance was implemented however this cannot be guaranteed in the future.

16) Due to the distance from the main fire station which is the nearest Shasta Lake Fire Protection District fire station we request the developer contact Fire Chief Adrian Rogers to discuss dedication of approximately two acres near the north end of the project for a possible fire station site.

17) Due to the heavy emphasis on pedestrian, bicycle, and other non motor vehicle travel within the development it would make sense to have a "park and ride" facility that would accommodate bike rack space and other cage/enclosure lockup area at a centralized parking or transportation hub area near the north end of the project area possibly in or adjacent to proposed commercial areas.

18) Have project boundaries been identified and marked? If so provide staff with locations and descriptions of markers to allow site visits to properly respond to applicant's questions and comments.

19) Has the project been reviewed in connections with compatibilities and incompatibilities between the proposed adjacent quarry project?

20) Preliminary documents show no airstrips near the project however the FAA has designated "Tews Field Airport", CA53 which is an 1,800 foot private airstrip located just south of Shasta Dam Boulevard and on the East side of Interstate 5 Freeway. This airstrip is approximately 4,100 feet from the project boundary.

The conditions presented above are based on preliminary information provided to this agency. Additional conditions or changes may occur based on final project submittal.

Charles E. Dahlen
Battalion Chief / Fire Marshal

Carla Thompson

From: Northeastern Info Center [neinfocntr@csuchico.edu]
Sent: Wednesday, April 04, 2012 12:22 PM
To: Carla Thompson
Subject: RE: NOP - Proposed Mountain Gate at Shasta Area Plan

Carla,

Thanks for sending this to us, it looks like the cultural resources portion has been adequately covered.

Sincerely,

Amy Huberland
Assistant Coordinator
Northeast Information Center
123 West 6th Street, Suite 100
Chico, California 95928
ahuberland@csuchico.edu
530-898-5438

From: Carla Thompson [mailto:cthompson@cityofshastalake.org]
Sent: Wednesday, April 04, 2012 12:02 PM
To: Pat Minturn; Ross Bell; Adam Fieseler; Daniel Little; Dan Wayne; Mark Cramer; daniel.hebrard@fire.ca.gov; Tom Bosenko; demallie@ci.redding.ca.us; kmaze@ci.anderson.ca.us; mstuart@gwusd.org; tungaro@gwusd.org; mgcsd@shasta.com; chfdon@shasta.com; Adrian Rogers; Peter Bonkrude; mary@westernshastarcd.org; mark@shastaedc.org; wintu-tribe@hotmail.com; wintu.chairman@wintutribe.org; winnemem@msn.com; hopew@redding-rancheria.com; nahc@pacbell.net; Northeastern Info Center; rlis@dfg.ca.gov; bsmith@waterboards.ca.gov; marcelino_gonzalez@dot.ca.gov; bor@cpuc.ca.gov; pcrader@waterboards.ca.gov; matthew.p.kelley@usace.army.mil; jeff.mclain@noaa.gov; Fw1sacweb@fws.gov; sheywood@fs.fed.us; cluzietti@fs.fed.us; Forrest Bartell; Bill Walker; Dannas Berchtold; Shellisa Moore; Rick Simon; rmull@co.shasta.ca.us; lmorgan@co.shasta.ca.us
Cc: Milo Terzich; Mark Teague; Ron Alvarado; Mark Hanson; David Temblador; Wrenn Braxton
Subject: RE: NOP - Proposed Mountain Gate at Shasta Area Plan

It was brought to my attention that there was an error on page 4 of the Initial Study that was distributed yesterday. Attached is the corrected page verifying that an Environmental Impact Report will be prepared for this project.

I apologize for any inconvenience.

c

Carla L. Thompson, AICP
Development Services Director

City of Shasta Lake
P.O. Box 777
Shasta Lake, CA 96019

530.275.7460
530.275.7406 (FAX)

CITY OF SHASTA LAKE

Founded July 2, 1993

MEMORANDUM

To: **Carla Thompson, Development Services Director**
From: Adam Osborn, Administrative Services Assistant
Date: 04/20/2012
Subject: **Mountain Gate at Shasta Area Plan**

Electric

Services to the lots within the development will be underground; and the developer will be responsible for the installation of the necessary substructures, in accordance to the Electric Department's Underground Service Requirements. These underground facilities should be considered in the Environmental Impact Report. The development will require a 115kV/12.47kV substation, which should also be considered. The substation could also have noise and aesthetic impacts. The developer should indicate the location that is to be dedicated for substation, and it should be verified that the site is suitable for substation grounding and spill containment.

The phasing of the development will also have an effect on the construction requirements. If the lots farthest from our closest point of connection are developed first; we will need to build an overhead line, which should be considered in the EIR as well.

Transmission lines will also need to be built with the construction of the substation. These lines will be 115kV; dependent on the location of the substation; and require a 50' easement.

The development could also require an Automated Meter Reading repeater tower, depending on topography.

The EIR should also review the development, and how it affects the city's Renewable Portfolio Standard and Greenhouse Gas Emissions. AB32, SB1, and SB1X2, which require the city to purchase 33% renewable energy; should be considered when reviewing this project.

I think it would be beneficial to have a meeting with both the Electric Department and Development Services, to make sure we're not missing or forgetting anything that could be of value at this point in the development.

Carla Thompson

From: Paula Pearce
Sent: Tuesday, April 24, 2012 9:01 AM
To: Carla Thompson
Subject: FW: Mtn Gate at Shasta comments

Here are the comments from Jeff T on Mt Gate at Shasta

From: Jeff Tedder
Sent: Tuesday, April 24, 2012 8:55 AM
To: Paula Pearce
Subject: Mtn Gate at Shasta comments

P, these plans are so preliminary that most of these comments are not specific. But here you go:

1. General

It is the understanding of the PW Department that development of this project will start at the north end, near Mountain Gate. All City utilities are currently located at the south end of the project, meaning that northern development will require extensive infrastructure construction (including, possibly, roadways, a wastewater lift station, water tank, and distribution and collection system mains) throughout the project, only to serve development at the most remote location.

2. Wastewater:

Detailed review of collection system sizing was not completed, due to the limited information provided on the plans. However, the utility plan (sheet 5 of 7) shows a 15" gravity sewer main draining into Pump Station #2. Pump Station #2 does not have the capacity to handle the anticipated flows from this project. There are two options to address this:

- The developer can construct a new lift station at the south end of the project and run a force main to the large gravity main on Cascade Boulevard, completely bypassing Pump Station #2.
- The developer can acquire additional property surrounding Pump Station #2 and construct a new lift station at that location – however, this will require more planning and design work to keep the existing station operating and handle flows from existing customers during construction.

3. Water:

Water service to the project is shown as being provided from Tanks 3A and 3B (at the end of Shasta Way), as well as from the distribution system at Shasta Way and Main Street. Water main sizing at the north end of the project varies between 12" and 18". Extensive modeling will be required to determine the impact the project will have on the City's existing treatment, storage, and distribution systems to ensure that adequate water can be provided to the project. Note that Plate 1 of the City's Water Master Plan shows additional water service from Black Canyon Road, as well as a water storage tank to provide fire storage and surge protection – these items may be needed.

4. Transportation:

Road 'A' is currently shown terminating near the existing intersection of Shasta Dam Boulevard and Shasta Way. This intersection has been studied extensively, both by the developer and the City. It is unlikely that this connection point will be utilized, due to several factors:

- The intersection will likely need to be signalized. Caltrans has told the City on numerous occasions that their models show stacking flowing through both signals and backing up traffic in the east-west direction.
- Caltrans is constructing a project at the intersection of Shasta Dam Boulevard and Shasta Way in 2012 that will eliminate left turns onto SDB from the north. This will improve the LOS at the existing intersection at peak hour.
- Additional ROW will need to be obtained to allow the proposed routing to occur. Parceling out of the former Commercial Center property, as well as bus circulation near Grand Oaks Elementary School, need to be addressed, and will be difficult to accomplish.

An alternate connection point for Road 'A' has been identified on Cascade Boulevard near Pump Station #2.

5. Storm drainage:

It appears that many drainage areas will be crossing newly constructed roadways. The plans should reflect culvert location and sizing.

6. Grading:

It appears that grading will be limited to roadway alignments at this time. The plans should reflect City-standard cut and fill slopes at the edges of the road section.

Carla Thompson

From:	Rose Flame [mysecretfires@gmail.com]
Sent:	Friday, May 04, 2012 8:16 PM
To:	Carla Thompson
Cc:	hswriter@frontiernet.net; colleenleavitt@aol.com; ecassano@shastalake.com
Subject:	Mountain Gate Meadows EIR Comments, Shasta 123

Attn: Carla L. Thompson, AICP, Development Services Director
cthompson@cityofshastalake.org
530.275.7460
P.O. Box 777
1650 Stanton Drive
Shasta Lake, CA 96019

Dear Ms. Thompson

I am submitting my public comment regarding the proposed project request by Mountain Gate Meadows, LLC, for approval of:

a. General Plan Amendment (GPA 11-01) that would redesignate approximately 141 acres of the project area to Mixed Use (MU) consistent with the remaining 449 acres of the site. The remaining project area is currently designated MU consistent with proposed use of the site.
b. Rezone (Z 11-02) that would change the zoning of the entire 590-acre project site from Planned Development-Specific Plan (PD/SP) to Planned Development (PD).
c. Tentative Map (SD 11-01) for the creation of 21 parcels. Future development of the site will require additional tentative maps.
d. Area Plan for a mixed-use development on the 590-acre property with approximately 1,604 housing units, 195,584 square feet of commercial uses/professional offices, and 236 acres of open space, parks and trails.

The subject property is located in the northeast section of the City of Shasta Lake, south of the community of Mountain Gate, on the west side of Interstate 5, south of the Mountain Gate/Interstate 5 Interchange

My questions are as follows:

1. Will the proposed 3M Quarry site next door be utilizing any of the infrastructure of the this proposed project? Specifically will potable water, electricity lines, and wastewater disposal occur in conjunction with this project and this property?
2. How will the 3M Quarry operations impact the proposed residential habitations in the nearby vicinity? What health impacts will the 3M Quarry have on these sensitive recepters?
3. Since both the 3M Quarry site and the Mountaingate Meadows Project intend to use the same Mountain Gate/Interstate 5 Interchange, how will this dual usage impact residents. Specifically address what traffic hazards might develop and how combining these projects will impact fire safety standards for neaby residents.
4. The Mountain Gate of Shasta Initial Environmental Study(3.0-10)states "A roadway connection will be required to connect Shasta Dam Boulevard with the proposed project." Will this road be used by 3M for their quarry operations? What impact would use of this road have on the residents and businesses located near the 3M Quarry?
5. The Mountain Gate of Shasta Initial Environmental Study (3.0-11) states "Extension of water and wastewater collection systems to the site would be required and would involve work in Shasta Dam Boulevard and the new roadway extending from the Boulevard onto the project site. The proposed project may also require the construction of a 1.0 million gallon... water storage tank northwest of the site." Will any of this

infrastructure be used by the 3M Quarry? How will these extensions of water and wastewater impact existing natural habitats? Specifically, how will groundwater quality and wetlands be afftected?
6. How many acres of wetland will be affected by this proposed site? What is the cumulative impact to wetlands from both the 3M Quarry project and this project? How will proposed mitigations be enacted, taking into account the impact of the 3M Quarry project on mtitagtion measures. What endangered species will be impacted? What measures have been taken to ensure proper observaton and recording methods of potentially affected species and habitiat?

Thank you for your time.

Sincerely,

Celeste Draisner
530-921-0272

COMMENTS MTN GATE MEADOWS INITIAL ENVIRONMENT STUDY

April 26th, 2012

Carla Thompson, AICP
City of Shasta Lake
1650 Stanton Drive,
Shasta Lake, CA 96019

Dear Carla,

I realize a project of this magnitude has a lot of money involved and the interests behind the project may wish to treat the publics scoping period as a technicality; A procedure to be swiftly completed as they steam roll the project into existence before the public truly understands the 'scope' of the project and its full impacts.

I want to thank you in advance for safe-guarding your neighbors and friends as well as the environment's interest. For not allowing private interests to rush you through what should be a long, drawn out scoping process to ensure the effected public has time to receive well researched answers to their questions per SEQA guidelines and feel they have been respected and were allowed meaningful participation.

The California Natural Resources Agency instructs proposed projects evaluating impacts of special status native plant populations and natural communities to "[have a] discussion of direct, indirect, and cumulative impacts to the plants and natural communities."

To pretend to do an environmental study of this project without studying the indirect and cumulative impacts of the proposed 3M rock quarry right next door would be highly inadequate. In order to help your agency meet the requirements of your study, I am asking many relevant questions about the "indirect and cumulative impacts" of the proposed quarry.

The 3M project is proposing an aggregate, crushing, screening and washing plant within a few hundred yards of the Mountain Gate Meadows (MGM) project:

RECEIVED

APR 25 2012

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The Sacramento Air Quality District Describes an Aggregate Crushing, screening and washing plant as: The processing of sand and gravel for a specific market involves the use of different combinations of washers, screens, and classifiers to segregate particle sizes; crushers to reduce oversized material; and storage and loading facilities. The various types of equipment used in these plants include: hoppers, belt conveyors, screens, scrubbers, pumps, storage bins, crushers, jigs, screws, front end loaders, scrapers, trucks, engines, and generators.

- *ALL PARAGRAPHS IN TREBUCKET MS FONT ARE QUOTES.

In order for the SACD to make an informed decision regarding a potential project, they require the following information: Form G100: Form G101:Form BA100: Form HRA 100: (these forms are used by the District to characterize the type of process, size, flow rates, abatement devices, and exhaust stacks of the system)

Please provide the same information for the proposed aggregate, crushing, screening and washing plant proposed right next door. Without it, the public can not make an informed decision.

The SACD states: The following forms must be completed and submitted by the applicant when applying for an Authority to Construct and/or Permit to Operate any aggregate and rock crushing equipment:
Application for Authority to Construct and/or Permit to Operate
General Information Form
Baghouse
Health Risk Assessment Information
A separate Form G100 is required for an APC baghouse unit. 4.

Additional Information
Site plan and plot plan, with dimensions, showing location of equipment.
If required because of initial health risk screening, submit a risk reduction strategy. Information needed to evaluate the proposed risk reduction measure(s) shall include, but not limited to -- equipment layout with dimensions and location of process equipment; specification of the ventilation system (type of ventilation, rated air flow rate, exhaust stack diameter and stack height), and location of exhaust stack. PC Baghouses and IC Engines
When an aggregate and rock crushing process is permitted with an APC baghouse or IC engine, a separate application for Authority to Construct is required for these

types of equipment.

California Health & Safety Code, Part 6 (commencing with section 44300) -- Air Toxics "Hot Spots Information and Assessment Act of 1987:
Facilities subject to this requirement must identify and quantify emissions of toxic air contaminants. Facilities posing a potential health risk to the public must prepare a health risk assessment and if required, notify the public and implement a risk reduction plan."

I imagine 3M received assurance they qualify for a PSD permit before conducting a scoping meeting and pursuing an E.I.R. So, I am assuming the above information is available and very pertinent to a housing development right next door. Could I have one copy of all this information? I will be responsible for disseminating it to other concerned citizens.

Citizens request a copy of the 'initial health risk screening' as required for the quarry next door. Also, what are the 'proposed risk reduction measures' for the crushing plant right next door? Without these, there can be no meaningful citizen participation and the scoping meeting is a mere technicality to be checked off the list.

California Health & Safety Code §42301.6 -- Permit Approval: Powers & Duties of APCO:
Prior to approving an application for a permit to construct or modify a source which emits hazardous air pollutants, which source is located within 1,000 feet from a school site, the District must prepare a public notice. The notice must be sent to parent or guardians of children enrolled in any school located within 1/4 mile of the source and to each address within a radius of 1,000 feet of the source at least 30 days prior to taking final action on the application.

Is there a proposed school in the MGM proposal? If so, is the notification already prepared?

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations Title 17, CCR Section 93105:
The Asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations sets forth the requirements of an Asbestos Dust Mitigation Plan, and record keeping and reporting requirements for operations subject to this ATCM.

The Plan must be submitted to and approved by the District. Any fugitive dust mitigation measures specified in the Plan must be implemented and maintained throughout the duration of any quarrying or surface mining operation.

What is 3M's Asbestos Dust Mitigation Plan as it impacts the proposed 1604 homes in Mountain Gate Meadows?

Is this BACT?

What are the recording and reporting requirements for their Aggregate plant emissions next door?

Where can the public view these records?

How can the public participate in the emissions testing?

STANDARDS & REQUIREMENTS

The following standards and/or requirements must be met in order to obtain an Authority to Construct and/or a Permit to Operate:

1.Regulation 4 -- Prohibitory Rules

a) Rule 401, Section 301: Visible emissions may not exceed No. 1 on the Ringelmann Chart or 20% opacity for more than three minutes in any one hour.

What agency will be testing 3M's aggregate plant visible emissions?

How often?

Where can the residents of MGM inspect these tests?

What is the penalty for a violation?

How many violations over a year period before the aggregate plant would be closed?

How will the agency overseeing the aggregate plant ensure that any new pollution control technology is implemented?

b) Rule 402, Section 301: A person cannot discharge pollutants which cause injury, detriment, nuisance or annoyance to any considerable number of persons or which endanger the comfort, repose, health or safety of any such person, or which may cause damage to business or property.

This is of highly relevant to the Mountain Gates Meadow project since it is adjoining property. What agency do the residents of Mountain Gate Meadows talk to if this occurs? What is that agencies authority if the problem is not rectified? If the aggregate plant is designated a gross polluter, what agency will shut it down?

c) Rule 403, Section 301: A person shall take every reasonable precaution not to cause or allow the emissions of fugitive dust from being airborne beyond the property line from which the emission originates, from any construction, handling or storage activity, or any wrecking, excavation, grading, clearing of land or solid waste disposal operation. Reasonable precautions shall include, but are not limited to:

301.1 Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the construction of roadways or the clearing of land.

301.2 Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which can give rise to airborne dusts.

301.3 Other means approved by the Air Pollution Control Officer.
d) Rule 404, Section 301: Particulate matter concentration from any point source (i.e. stack) shall not exceed 0.1 grains per dry standard cubic foot of gas.
e) Rule 405, Section 301: A person shall not discharge into the atmosphere in any one hour from any source whatsoever dust or condensed fumes in total quantities in excess of the amount specified in the Rule. 2. 40CFR60 - NSPS

Is our local AQMD solely responsible for overseeing the aggregate plant next door? Are other agencies involved? What authority do these agencies have to enforce the regulations and to penalize the plant for any egregious behavior? Will these records be available to the public? Will it be possible to track any violations on-line?

Subpart OOO: - Non metallic mineral processing plants - For those affected facilities, a person shall not discharge into the atmosphere any stack emissions which contain particulate matter in excess of 0.022 gr/dscf and exhibit greater than 7 percent opacity, any transfer point fugitive emissions in excess of 10 percent opacity, any crusher at which a capture system is not used in excess of 15 percent opacity, any baghouse that controls storage bins in excess of 7 percent opacity, and no visible emissions from saturated materials in screening and other conveyance operations.

Future residents of Mountain Gate Meadows living directly next to the plant would presumably like to be a liaison with the Air Quality Management Officer supervising this facility. This way ongoing, comprehensive testing could occur at minimal time and expense to the county. Could the AQMD set up monitors at volunteers homes in Shasta Lake City, Redding and Mountain Gate?

Could they have authority to check the site-specific monitors near the plant?

3. Nuisance - Toxics Review and T-BACT
The District has the authority and responsibility to protect the public from the discharge of air contaminants or other materials, which endanger health and safety. Hence, the Supplemental Risk Assessment Guidelines for New and Modified Stationary Sources was issued in December 2000.

Any new or modified stationary sources are evaluated if they emit toxic air contaminants included under:
1. All toxic air contaminants listed by the California Air Resources Board pursuant to California Health and Safety Code, Section 39662b.
2. Substances listed as hazardous air pollutants pursuant to subsection (b) of Section 12 of the Federal Act (42 U.S.C. Sec 7412(b)).
The District's Supplemental Risk Assessment Guidelines for New and Modified Stationary Sources [December 2000] provides health risk thresholds as shown below:
Excess Cancer Risk Action Required
≤ 0.1 per million Exempt from toxic review.
> 0.1 per million but ≤ 1 per million No significant risk; No action required.
> 1 per million but ≤ 10 per million Acceptable risk; Provide TBACT

> 10 per million but ≤ 100 per million Provide strategies beyond TBACT that will reduce the facility's potential risk to an acceptable level pursuant to SB 1731 [Risk Reduction Measures].
> 100 per million Denial of permit.

A new or modified aggregate processing facility is acceptable if the excess cancer risk associated with the crystalline silica emissions is less than or equal to 10 per million [10E-06] based on a lifetime exposure of 70 years and Toxic Best Available Control Technology (TBACT) has been applied. If the incremental cancer risk is greater than 10 per million but less than or equal to 100 per million and TBACT has been provided, the applicant shall propose a reasonable risk reduction strategy to reduce the potential risk to an acceptable level.

TBACT is similar to BACT, but applies to any new or modified source of toxic air pollutants which have health risks that exceed the specified levels above. There are no toxic pollutants of concern at this time for sand and gravel processing plants.

4.New Source Review (NSR)

a)Rule 202 - Best Available Control Technology
Best Available Control Technology (BACT) - Section 301 requires a new emissions unit or modification of an existing emissions unit to apply BACT if it would result in an increase in quarterly emissions and if the daily potential to emit meets or exceeds the levels specified in Section 302.1 and below:
Pollutant BACT Trigger Level lb/day
Reactive Organic Compound, ROC 10
Nitrogen Oxides, NOx 10
Sulfur Oxides, SOx 10
Particulate Matter, PM10 10
Carbon Monoxide, CO 550
BACT is defined as the most effective emission control device, emission limit, or technique which has been required or used for the type of equipment.
Acceptable control options may include:

1. Baghouse: Preferred control device (99.9+% control efficiency)
2. Water Spray System (Atomized and/or Conventional)
3. Cyclone
4. Water Scrubber
5. Enclosure of Transfer Points

The current District BACT standards for an Aggregate Plant are as follows:

Process Technologically Feasible

Crushers & 1. Enclosure and Vented to Screens Baghouse(s) w/ <0.01 gr/dscf.

Conveyors

Material 1. Enclosure and Vented to Transfer Points Baghouse(s) w/ <0.01 gr/dscf.

Storage Piles Water Spray w/ Chemical Suppressants. Water Spray w/ Chemical Suppressants.

Site Road

Surfaces

1. Enclosure and Vented to Baghouse(s) w/ <0.01 gr/dscf.

Achieved in Practice

1. Vented to Baghouse
2. Water Spray

BACT may change for various processes over time due to improvements in control equipment or the cost effectiveness of existing technologies that are considered feasible to apply to these processes. BACT for a new source or modified process is determined at the time the Authority to Construct is being evaluated.

What is the Best Available [pollution] Control Technology for this aggregate crushing, screening and washing plant right next door? Shouldn't they go beyond that and apply <u>all</u> known pollution control technology so that they come in as clean as possible irregardless of expense? For example: If a baghouse brings the plant down to an 'acceptable level'... is it conscionable to stop there?

Perhaps a water scrubber, a second baghouse, a cyclone, enclosing the plant and/or limiting the hours of operation, etc. would lower the crystalline silica emissions by another 15%? Doesn't 3M have the moral responsibility to the surrounding environment and human population to come in as clean as possible. Isn't 'acceptable level' below what should be accepted when this project is right next door?

The public

b) Rule 202 - Emission Offsets

The source must provide emissions offsets for new or modified stationary sources where the cumulative emission increase for the facility exceeds the following levels (Rule 202, §302):

POLLUTANTS & POUNDS PER QUARTER

Reactive Organic Compounds (ROC) 5,000

Nitrogen Oxides (NOx) 5,000

Sulfur Oxides (SOx) 13,650

PM10 7,500

Carbon Monoxide (CO) 49,500

It is very relevant that there was no discussion of emissions at the 3M scoping meeting. Does 3M propose to exceed these limits? If so, what emission offsets are the proposing? Your future neighbors at Mountain Gate Meadows need the following information to evaluate the potential impacts to them of 3M's proposal; a list of any potentially hazardous discharges (including quantities) from the waste water, smoke stacks, pile formation particulate emissions from wind erosion from active and inactive storage piles, and any other source of potential risk to our health.

For the above information to be evaluated by residents of Mountain Gate Meadows , they would need to know at what levels each of these impacts are considered safe and at what level would be an immediate danger to the environment surrounding the plant. How can the MGM residents comment on the potential environmental impacts of the project as you request without such basic and vital information?

PORTLAND CEMENT CONCRETE PLANT

Here are some finding regarding the health effects of Portland Cement Plants on humans and plants.

HEALTH HAZARDS OF CEMENT DUST

Sultan A. Meo., MBBS, Ph.D.,Department of Physiology, College of Medicine, King Saud University Riyadh, Kingdom of Saudi Arabia

Running title: Occupational risk of cement dust.

Key words: Occupational hazards, Cement dust, Lung function, Radiological findings

Table 1. Summary: Hazards of cement dust on different organs.

Cough and phlegm production, chest tightness, impairment of lung function, obstructive and restrictive lung disease, Pleural thickening, fibrosis, Gastro Intestinal system , Oral cavity emphysema, lung nodulation, pneumoconiosis and carcinoma of lung.
Mechanical trauma, mucosal inflammation, loss of tooth surface, periodontal disease, ntal Liver abrasion and dental caries.

Diffuse swelling and proliferation of sinusoidal (hepatic) lining cells, sarcoid type granulomas, perisinusoidal and portal fibrosis and hepatic , Central nervous system, Lymphatic system Miscellaneous lesions. Stomach ache and cancer of stomach,
Brain ,Headache and fatigue
Spleen,Diminished lymphatic tissue and splenic lesions
skin Irritation of eyes, runny eyes and conjunctivitis, and bone, skin irritation, itching, skin boil and burn, osteonecrosis, lesion of the humerus, thinning of the cortex and reduction of epiphyseal cartilage.

Environmental effects from Portland Cement Concrete Plants (Wikipedia)

Portland cement manufacture can cause environmental impacts at all stages of the process. These include emissions of airborne pollution in the form of dust, gases, noise and vibration when operating machinery and during blasting in quarries, consumption of large quantities of fuel during manufacture, release of CO_2 from the raw materials during manufacture, and Portland cement manufacture can cause environmental impacts at all stages of the process. These include emissions of airborne pollution in the form of dust, gases, noise and vibration when operating machinery and during blasting in quarries, consumption of large quantities of fuel during manufacture, release of CO_2 from the raw materials during manufacture, and damage to countryside from quarrying.

> Epidemiologic Notes and Reports Sulfur Dioxide Exposure in Portland Cement Plants, from the Centers for Disease Control, states "Workers at Portland cement facilities, particularly those burning fuel containing sulfur, should be aware of the acute and chronic effects of exposure to SO_2 [sulfur dioxide], and peak and full-shift concentrations of SO_2 should be periodically measured."

"The Arizona Department of Environmental Quality was informed this week that the Arizona Portland Cement Co. failed a second round of testing for emissions of hazardous air pollutants at the company's Rillito plant near Tucson. The latest round of testing, performed in January 2003 by the company, is designed to ensure that the facility complies with federal standards governing the emissions of dioxins and furans, which are byproducts of the manufacturing process." [15] Cement Reviews' "Environmental News" web page details case after case of environmental problems with cement manufacturing.[16]

An independent research effort of AEA Technology to identify critical issues for the cement industry today concluded the most important environment, health and safety performance issues facing the cement industry are atmospheric releases (including greenhouse gas emissions, dioxin, NO_x, SO_2, and particulates), accidents and worker exposure to dust.[17]

Wikepedia discusses Portland Cement Plants burning toxic waste for fuel;

Due to the high temperatures inside cement kilns, combined with the oxidizing (oxygen-rich) atmosphere and long residence times, cement kilns are used as a processing option for various types of waste streams.

Waste materials used in cement kilns as a fuel supplement:

- Car and truck tires - steel belts are easily tolerated in the kilns
- Paint sludge from automobile industries
- Waste solvents and lubricants
- Meat and bone meal - slaughterhouse waste due to bovine spongiform encephalopathy contamination concerns
- Waste plastics
- Sewage sludge
- Rice hulls
- Sugarcane waste
- Used wooden railroad ties (railway sleepers)
- Spent Cell Liner (SCL) from the aluminum smelting industry (also called Spent Pot Liner or SPL)

Portland cement manufacture also has the potential to benefit from using industrial by-products from the waste-stream. These include in particular: Slag, Fly ash (from power plants),Silica fume (from steel mills) Synthetic gypsum (from desulfurisation)

All these effects are not contained within magical 3M borders. These are important questions for potential residents and shoppers of the MGM proposal.

Does 3M propose to burn toxic waste from other facilities in the Portland Cement plant?

If so, how would the highly toxic emissions and waste flow be safely handled?

"The latest round of testing[Rillito Portland Cement Plant] performed in January 2003 by the company, is designed to ensure that the facility complies with federal standards governing the emissions of dioxins and furans, which are byproducts of the manufacturing process." Why isn't the federal EPA the lead agency for this project?

The Rillito Plant is an example of what the public fears. The plant was non-compliant with *self-monitored* air samples. Were they shut down? Did the Arizona Air Quality Manager take over supervision of the testing until the plant was in compliance? No, they are going to do another round of self-monitoring.

What will you and other local agencies do to protect citizens living in the MGM development better than that? Citizens are eager to participate in the monitoring process. Please create a citizen liaison position at the AQMD with powers of enforcement.

A quarry operation digging below the water table has the potential to pollute groundwater and contaminate neighboring wells. What safeguards are in place to prevent that from happening to residents of MGM? This is a of crucial importance to citizens, so the more details you can give us on this issue the better.

ASPHALT CONCRETE PLANT

The crude oil in the production of asphalt releases a significant amount of benzene and other known cancer causing agents.

BLUE RIDGE ENVIRONMENTAL DEFENSE LEAGUE:

Asphalt plants mix gravel and sand with crude oil derivatives to make the asphalt used to pave roads, highways, and parking lots across the U.S. These plants release millions of pounds of chemicals to the air during production each year, including many cancer-causing toxic air pollutants such as arsenic,

benzene, formaldehyde, and cadmium. Other toxic chemicals are released into the air as the asphalt is loaded into trucks and hauled from the plant site, including volatile organic compounds, polycyclic aromatic hydrocarbons (PAHs), and very fine condensed particulates.

Asphalt Fumes are Known Toxins. The federal Environmental Protection Agency (EPA) states "Asphalt processing and asphalt roofing manufacturing facilities are major sources of hazardous air pollutants such as formaldehyde, hexane, phenol, polycyclic organic matter, and toluene. Exposure to these air

toxics may cause cancer, central nervous system problems, liver damage, respiratory problems and skin irritation." [EPA]. According to one health agency, asphalt fumes contain substances known to cause cancer, can cause coughing, wheezing or shortness of breath, severe irritation of the skin, headaches, dizziness, and nausea. [NJDHSS] Animal studies show PAHs affect reproduction, cause birth defects and are harmful to the immune system. [NJDHSS] The US Department of Health and Human Services has determined that PAHs may be carcinogenic to humans. [DHHS]

What specif toxins would this proposed plant emit into the MGM community?

In what quantity?

Your position, as the Development Services Director, is more encompassing than this Environmental study. New Shasta Lake residents living in the MGM development need to be considered regarding the following:

Health Impacts & Loss of Property Value. The Blue Ridge Environmental Defense League (BREDL), a regional environmental organization, has done two studies on the adverse impacts on property values and health for residents living near asphalt plants. A property value study documented losses of up to 56% because of the presence of a nearby asphalt plant. In another study, nearly half of the residents reported negative impacts on their health from a new asphalt plant. The door-to-door health survey found 45% of residents living within a half mile of the plant reported a deterioration of their health, which began after the plant opened. The most frequent health problems cited were high blood pressure (18% of people surveyed), sinus problems (18%), headaches (14%), and shortness of breath (9%).

Further, the BREDL states:

The EPA Worst Source model predicts that the acceptable ambient levels (AALs) would be exceeded 1.8 miles from the plant Arsenic, a toxic heavy metal, would exceed AALs 2.17 miles (3,500 meters) from the plant.

Is a setback from the Mountain Gate Meadows residence and retail outlets being proposed as a mitigation for the toxic heavy metals which travel long distances as well as the constant flow of dust particulates?

Can 3M been required to fence the property adjacent to Mountain Gate Meadows to prevent wildlife and children from wondering onto the site operating heavy equipment, 1,000s of gallons of hot asphalt, open retention ponds,etc?

What site specific health-based air pollution modeling and monitoring is proposed for the next door neighbors of the asphalt plant?

Is the Mountain Gate Meadows project monitoring the HAP's from right next door?

If not, why not?

"fugitive emissions" are the release of Hazardous Air Pollutants (HAP's) as the asphalt is moved and stored. This source of emissions is neither regulated nor monitored, and depending on the size of the asphalt operation, can release up to 50 tons of toxic air emissions annually.

In addition to smokestack emissions, large amounts of harmful "fugitive emissions" are released as the asphalt is moved around in trucks and conveyor belts, and is stored in stockpiles. A small asphalt plant producing 100 thousand tons of asphalt a year may release up to 50 tons of toxic fugitive emissions into the air. [Dr. R. Nadkarni] Stagnant air and local weather patterns often increase the level of exposure to local communities. In fact, most asphalt plants are not even tested for toxic emissions. The amounts of these pollutants that are released from a facility are estimated by computers and mathematical formulas rather than by actual stack testing, estimates that experts agree do not accurately predict the amount of toxic fugitive emissions released and the risks they pose. According to Dr. Luanne Williams, a North Carolina state toxicologist, 40% of the toxins from asphalt plant smokestacks even

meet air quality standards and for the other 60% of these emissions, the state lacks sufficient data to determine safe levels.

Once these 'fugitive' emissions from the refineries in the San Francisco Bay Area were monitored, it was revealed that were emitting twice what they were *self*-reporting. Certainly we can do better than that. How does the local AQMD plan to monitor these substantial 'fugitive' emissions next to federally protected wetlands?

Chemicals released from asphalt plants and asphalt terminals

- Sulfur dioxide (SO2): Environmental Defense, U.S. Agency for Toxic Substances and Disease Registry.
- Hydrogren sulfide (H2S): Environmental Defense, U.S. Agency for Toxic Substances and Disease Registry.
- Volatile organic chemicals (VOCs): Environmental Defense, List of all known volatile organic chemicals.

The environmental and human health concerns regarding the proposed asphalt plant next door are grave. It is very hard to assess the dangers of such a plant without knowing the quantities of asphalt they plan to produce, how much crude oil they propose to use each year in the production of asphalt. Where will this crude oil be stored? Are there other dangers regarding this plant we should be aware of? Please give us all the information available on this plant so we can be meaningfully involved in it's licensing and operations.

RECYLED CONSTRUCTION MATERIALS PROCESSING PLANT (RCMP)

WISCONSIN DEPARTMENT OF NATURAL RESOURCES:

Materials to be recycled will come from projects within an identified service area primarily consisting of portions of Waukesha, Racine, Kenosha, and Walworth counties in Wisconsin, and the northern one -half of McHenry and Lake counties in Illinois. C&D materials will be subject to a certification and screening process for unauthorized materials prior to acceptance.

All processing will be performed on a seven- acre paved surface that will be constructed within the existing gravel pit area on the property. This site is subject to regulatory storm water management and runoff controls. In addition, the BR Amon facility is subject to Tier 1 industrial storm water permit requirements under NR 216 Wisconsin Administrative Code. The processing area will be located 1600 feet north of Potter Road adjacent to the existing BR Amon hot mix asphalt plant shingle recycling operation. Due to the outdoor operations, the facility will operate only from April through December.

Construction Materials Recycling, LLC anticipates that residential roofing shingles, which have been accepted at the BR Amon asphalt plant since September 2007, will account for more than 50 percent of the C&D materials accepted at their processing operation. Materials that cannot be recycled will be hauled to a licensed landfill. The estimated C&D materials acceptance rate at the site will be an average of 104 tons per day. The operation is subject to DNR approval and licensing under Chapter NR 502.08 Wisconsin Administrative Codes.

Would construction waste be subject to a certification and screening process prior to acceptance at this plant so it doesn't endanger the groundwater near federally protected wetlands?

What are the specifics of this process?

What quantities do they expect to be accepting on a yearly basis?

Will trucks delivering this waste be using the freeway exit next to the wetlands identified on the environmental review map? What is proposed to protect them?

Would plant or government employees conduct the certification of waste to be accepted?

Would these certifications be available for public review?

If the waste certification is conducted by plant employees, would the overseeing agency conduct surprise inspections?

What impact level would institute harm prevention measures?

US ARMY CORPS OF ENGINEERS
CONCEPTS FOR REUSE AND RECYCLING OF CONSTRUCTION AND DEMOLITION WASTE: Technical Report 99/58 , June 1999

Lead-Based Paint
For lead-based paint (LBP) waste to be considered a hazardous waste, it must contain more than 5 parts per million (ppm) of leachable lead as determined by the TCLP test. While other hazardous substances, such as mercury as a fungicide, have been used in paint, lead presents the most serious problem due to its widespread use especially in pigments, which may comprise a major volume component of the paint film.

The site of C&D waste disposal has traditionally been either a landfill or backfill. With increased recycling, the final disposition for the material may still be fill, but may also be in the form of other building or consumer products. It is important to consider the final use or disposition of the wastes, particularly if the materials contain some hazardous or restricted materials. An example is the chipping or shredding of finished wood. Lead-based paint is considered a hazardous material, and reducing the wood to small particles make the lead more mobile in the environment. Using this material as mulch or landscape cover should actually increase the exposure of people to the lead than if the material were left in place.

The same is true when the hazardous material is reduced to a small particle size; in such a case, the dissolution by prolonged exposure to moisture will increase the level of the material in ground water. Reduction of the waste may also increase the density of its toxic constituent, therefore making it relatively more hazardous.

Reducing wood coated in lead-based paint or mercury into small particles makes them more mobile in the environment. Before final disposition, would you require 3M to do a TCLP lead test to ensure they are not contaminating their MGM neighbors?

What regulations regarding toxic materials apply to a California RCMP Plant?

What emissions are released from a RCMP smoke stack that may be of concern to MGM neighbors and the surrounding environment?

How much water does this plant require per year?

Will that effect the water available to the MGM project?

What pollutants can be found in their waste water stream?

What purification process will be implemented before this waste water is stored?

Would the waste water be stored in such a manner that it is not a danger to the MGM neighbors?

What mitigation measures is 3M proposing to lessen the impact of their RCMP plant on the MGM neighbors?

What regulatory storm water management and runoff controls apply to this proposed plant? Will it have safety mechanisms intact to ensure it never runs off into the adjoining MGM property?

What is the materials acceptance rate at the proposed site? The plant in Wisconsin is proposing 104 thousand pounds a day, so this is no small matter. Please expound on the possible impact on the MGM neighbors of the this plant. Truck traffic and exhaust, the leaching of the waste when it rains, etc.

Will waste be accepted from outside the county using the same exit as MGM residents?

The Wisconsin plant expects over 50% of it's waste to be roofing tiles. A significant portion of roofing is made of chemically treated wood, asphalt or asbestos. These are federally recognized toxins. Would 3M's proposed plant accept these wastes for disposal?

If so, what licensing would be required for the handling of toxic waste so it is not emitted onto its MGM neighbors?

What agencies would be overseeing the proper handling of these wastes for the same reason.

Does 3M propose to backfill this waste? If so, how will the air and water near the backfill be monitored to protect the groundwater and air?

Where would these records be accessible to the public?

The plant in Wisconsin is an 'outdoor operation' that operates from April through December. Is the proposed RCMP plant an outdoor operation?

If so, how can they limit their emissions to a risk level acceptable for the MGM neighbors only hundreds feet away?

What are the dimensions of the proposed RCMP plant? What type of equipment such a Jaw Crusher, mobile Cone Crusher, mobile Impact Crusher, etc would be used? I ask this because to better understand the visibility implications and noise implications to MGM residents.

If 104 thousand pounds of construction waste is brought to the proposed site a day, Will the area for sorting and storage be paved to prevent leaching into the ground and effecting any potential well on the MGM site?

This waste is brought in by private parties. What road would they use to access the plant?

How much private traffic does the plant expect on a daily basis?

What other precautions would be implemented to minimize impact to the surrounding MGM area?

TRUCK AND RAILROAD LOADING FACILITY

The Draft Environmental Impact Statement for the Dewey Conveyor Project in Custer County, South Dakota gave the following estimate of haul truck traffic to a railroad loading facility. The Dewey project would process half the material proposed by the 3M project.

Alternative C would use 25-cubic yard haul trucks with 12 cubic yard double axle pup-trailers; containing a total of about 37 cubic yards of material per truck (or 48 tons per truck at 1.3 tons per cubic yard).
Therefore, it would require about 83 round trips per day to haul the anticipated 4,000 tons of limestone mined per day to the rail load-out facility (or approximately one truck every three minutes of an 8-hour haul day).

The 3M scoping flier states; "Processing, loading and hauling would occur up to 24 hours a day, 7 days per week." Calculating double the production of the Dewey Conveyor Project and averaging it over a 24 hour period, that would mean an average of one truck every 4/12 minutes to the load-out facility.

25% of the quarry's product would be carried by truck. Every sixteen minutes, twenty four hours a day, a semi-truck loaded with rock and pulling a trailer loaded with rock would be entering public roads. A public safety issue of major concern for prospective MGM residents.

The roads these trucks plan to be using need to be clearly identified for the safety of future MGM families as well as endangered species in the immediate area.

How is the issue of public safety being addressed for children living in the MGM development?

Why is MGM housing project asking for eleven acres at the top of their project map to be rezoned "Industrial?" What are the environmental impacts from such a dramatic change in zoning?

fugitive dust emissions from so many trucks loading, unloading and driving on dirt would be a major impact to vegetation, wildlife and the MGM neighborhood. The detrimental health impacts are well documented. What is MGM's proposal to reduce the impact from this emission source on this new community?

The exhaust from the semi-trucks every four and a half minutes is of an even deeper health concern. What does MGM proposed to off-set this damage to new residents? What BACT is being applied?

WATER

Water is such a big issue, it can not begin to be addressed within the scoping deadline. Preliminary information on what entity would supply the water to MGM and the quantity to be supplied is critical for meaningful participation of the public in this process.

Another major concern is the aquifer below both the MGM and 3M properties. How will the rock quarry mining 700 feet down effect the MGM water supply?

WASTE WATER

Looking at the rough estimates on the water use for so many homes and a large shopping center, it is evident there would be a significant stream of waste water. What plans has the MGM project made with the City regarding waste water? Is the existing system big enough to handle this much additional wastewater?

Please provide details regarding how this waste water would be treated, stored, filtered and released. What agency monitors this testing?

NATIVE AMERICAN CONCERNS

A Native American graveyard rests on that picturesque property. Just as I have buried my ancestors, I am sure these families did not intend to ever move them. My question is will you carry out extensive, respectful communication with the Indian community. Has an extensive, site-specific evaluation of cultural resources already been performed? What is your position if the local Indian community feels the same way I do about moving my dead relatives for a shopping mall?

These sites are vulnerable if their location is divulged in public documents. How are these sites being protected?

If any additional sites are discovered during the construction and operation of this project, what is the protocol for proper notification procedures?

Is this procedure agreeable to the involved tribes?

ENDANGERED PLANTS

I believe the reason this land has not been developed even though it has been talked about for the last thirty years is the plethora of endangered species and plants that thrive there.

There is significant potential for sensitive species and plants to be disturbed on this project site. Many have been identified on and adjacent to the site.

Below is the California Natural Resources Agency's protocol for surveying and evaluating impacts of special status native plant populations and natural communities located in the State of California.. (I have lightly edited it for brevity. All underlining is mine.)

CALIFORNIA NATURAL RESOURCES AGENCY
Department of Fish and Game November 24, 20091

INTRODUCTION AND PURPOSE

The conservation of special status native plants and their habitats, as well as natural communities, is integral to maintaining biological diversity. The purpose of these protocols is to facilitate a consistent and systematic approach to the survey and assessment of special status native plants and natural communities so that reliable information is produced and the potential of locating a special status plant species or natural community is maximized.

They may also help those who prepare and review environmental documents determine when a botanical survey is needed, how field surveys may be conducted, what information to include in a survey report, and what qualifications to consider for surveyors. The protocols may help avoid delays caused when inadequate biological information is provided during the environmental review process; assist lead,

trustee and responsible reviewing agencies to make an informed decision regarding the direct, indirect, and cumulative effects of a proposed development, activity, or action on special status native plants and natural communities; meet California Environmental Quality Act (CEQA)2 requirements for adequate disclosure of potential impacts; and conserve public trust resources.

DEPARTMENT OF FISH AND GAME TRUSTEE AND RESPONSIBLE AGENCY MISSION
The mission of the Department of Fish and Game (DFG) is to manage California's diverse wildlife and native plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. DFG has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Fish and Game Code §1802).

DFG, as trustee agency under CEQA §15386, provides expertise in reviewing and commenting on environmental documents and makes protocols regarding potential negative impacts to those resources held in trust for the people of California. Certain species are in danger of extinction because their habitats have been severely reduced in acreage, are threatened with destruction or adverse modification, or because of a combination of these and other factors.

The California Endangered Species Act (CESA) provides additional protections for such species, including take prohibitions (Fish and Game Code §2050 et seq.). As a responsible agency, DFG has the authority to issue permits for the take of species listed under CESA if the take is incidental to an otherwise lawful activity; DFG has determined that the impacts of the take have been minimized and fully mitigated; and, the take would not jeopardize the continued existence of the species (Fish and Game Code §2081).

Surveys are one of the preliminary steps to detect a listed or special status plant species or natural community that may be impacted significantly by a project.

DEFINITIONS Botanical surveys provide information used to determine the potential environmental effects of proposed projects on all special status plants and natural communities as required by law (i.e., CEQA, CESA, and Federal Endangered Species Act (ESA)).

For the purposes of this document, special status plants include all plant species that meet one or more of the following criteria:

Listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing as threatened or endangered under the ESA (50 CFR § 17.12).

Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code § 2050 et seq.). A species, subspecies, or variety of plant is endangered when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors (Fish and Game Code § 2062).

A plant is threatened when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures (Fish and Game Code § 2067).

Listed as rare under the California Native Plant Protection Act (Fish and Game Code § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish and Game Code § 1901).

Meet the definition of rare or endangered under CEQA § 15380(b) and (d). Species that may meet the definition of rare or endangered include the following: Species that may warrant consideration on the basis of local significance or recent biological information; Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2); Some species included on the California Natural Diversity Database' s (CNDDB) Special Plants, Bryophytes, and Lichens List (California Department of Fish and Game 2008)

Considered a locally significant species, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA § 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Special status natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status species or their habitat. The most current version of the Department' s List of California Terrestrial Natural Communities indicates which natural communities are of special status given the current state of the California classification.

Most types of wetlands and riparian communities are considered special status natural communities due to their limited distribution in California. These natural communities often contain special status plants such as those described above. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants.

4 Refer to current online published lists available at:http://www.dfg.ca.gov/biogeodata.

under CEQA §15380. These plants may be included on special status plant lists such as those developed by counties where they would be addressed under CEQA §15380. List 3 plants may be analyzed under CEQA §15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not.

List 3 and 4 plants are included in the California Natural Diversity Database' s (CNDDB) Special Plants, Bryophytes, and Lichens List.

BOTANICAL SURVEYS

Conduct botanical surveys prior to the commencement of any activities that may modify vegetation, such as clearing, mowing, or ground-breaking activities. It is appropriate to conduct a botanical field survey when:

Natural (or naturalized) vegetation occurs on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation;

or special status plants or natural communities have historically been identified on the project site;

Or special status plants or natural communities occur on sites with similar physical and biological properties as the project site.

SURVEY OBJECTIVES

Conduct field surveys in a manner which maximizes the likelihood of locating special status plant species or special status natural communities that may be present. Surveys should be floristic in nature, meaning that every plant taxon that occurs on site is identified to the taxonomic level necessary to determine rarity and listing status. "Focused surveys" that are limited to habitats known to

support special status species or are restricted to lists of likely potential species are not considered floristic in nature and are not adequate to identify all plant taxa on site to the level necessary to determine rarity and listing status.

Include a list of plants and natural communities detected on the site for each botanical survey conducted. More than one field visit may be necessary to adequately capture the floristic diversity of a site. An indication of the prevalence (estimated total numbers, percent cover, density, etc.) of the species and communities on the site is also useful to assess the significance of a particular population.

SURVEY PREPARATION

Before field surveys are conducted, compile relevant botanical information in the general project area to provide a regional context for the investigators. Consult the CNDDB10 and BIOS11 for known occurrences of special status plants and natural communities in the project area prior to field surveys. Generally, identify vegetation and habitat types potentially occurring in the project area based on biological and physical properties of the site and surrounding ecoregion

12, unless a larger assessment area is appropriate. Then, develop a list of special status plants with the potential to occur within these vegetation types. This list can serve as a tool for the investigators and facilitate the use of reference sites; however, special status plants on site might not be limited to those on the list. Field surveys and subsequent reporting should be comprehensive and floristic in nature and not restricted to or focused only on this list. Include in the survey report the list of potential special status species and natural communities, and the list of references used to compile the background botanical information for the site.

SURVEY EXTENT

Surveys should be comprehensive over the entire site, including areas that will be directly or indirectly impacted by the project. Adjoining properties should also be surveyed where direct or indirect project effects, such as those from fuel modification or herbicide application, could potentially extend offsite.

Pre-project surveys restricted to known CNDDB rare plant locations may not identify all special status plants and communities present and do not provide a sufficient level of information to determine potential impacts.

FIELD SURVEY METHOD

Conduct surveys using systematic field techniques in all habitats of the site to ensure thorough coverage of potential impact areas. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity, which determines the distance at which plants can be identified. Conduct surveys by walking over the entire site to ensure thorough coverage, noting all plant taxa10

The level of effort should be sufficient to provide comprehensive reporting. For example, one person-hour per eight acres per survey date is needed for a comprehensive field survey in grassland with medium diversity and moderate terrain13, with additional time allocated for species identification.

TIMING AND NUMBER OF VISITS

Conduct surveys in the field at the time of year when species are both evident and identifiable. [also verify if times vary by species] Usually this is during flowering or fruiting. Space visits throughout the growing season to accurately determine what plants exist on site. Many times this may involve multiple visits to the same site (e.g. in early, mid, and late-season for flowering plants) to capture the floristic diversity at a level necessary to determine if special status plants are present.

The timing and number of visits are determined by geographic location, the natural communities present, and the weather patterns of the year(s) in which the surveys are conducted.

REFERENCE SITES

When special status plants are known to occur in the type(s) of habitat present in the project area, observe reference sites (nearby accessible occurrences of the plants) to determine whether those species are identifiable at the time of

the survey and to obtain a visual image of the target species, associated habitat, and associated natural community.

USE OF EXISTING SURVEYS

For some sites, floristic inventories or special status plant surveys may already exist. Additional surveys may be necessary for the following reasons: Surveys are not current; or surveys were conducted in natural systems that commonly experience year to year fluctuations such as periods of drought or flooding (e.g. vernal pool habitats or riverine systems);or surveys are not comprehensive in nature; or fire history, land use, physical conditions of the site, or climatic conditions have changed since the last survey was conducted;or surveys were

conducted in natural systems where special status plants may not be observed if an annual above ground phase is not visible (e.g. flowers from a bulb); or changes in vegetation or species distribution may have occurred since the last survey was conducted, due to habitat alteration, fluctuations in species abundance and/or seed bank dynamics.

NEGATIVE SURVEYS

The failure to locate a known special status plant occurrence during one field season does not constitute evidence that this plant occurrence no longer exists at this location, particularly if adverse conditions are present. For example, surveys over a number of years may be necessary if the species is an annual plant having a persistent, long-lived seed bank and is known not to germinate every year. www.fws.gov/sacramento/es/documents/kitfox_no_protocol.pdf

U.S. Fish and Wildlife Service Survey Guidelines available at http://www.fws.gov/sacramento/es/protocol.htm

More than one year increase the likelihood of detection of a special status plant especially if conditions change. To further substantiate negative findings for a known occurrence, a visit to a nearby reference site may ensure that the timing of the survey was appropriate.

REPORTING AND DATA COLLECTION

The next section describes necessary information to assess impacts. For comprehensive, systematic surveys where no special status species or natural communities were found, reporting and data collection responsibilities for investigators remain as described below, excluding specific occurrence information.

SPECIAL STATUS PLANT OR NATURAL COMMUNITY OBSERVATIONS
Record the following information for locations of each special status plant or natural community detected during a field survey of a project site.

A detailed map (1:24,000 or larger) showing locations and boundaries of each special status species occurrence or natural community found as related to the proposed project. Mark occurrences and boundaries as accurately as possible. Locations documented by use of global positioning system (GPS) coordinates must include the datum18 in which they were collected;

The site-specific characteristics of occurrences, such as associated species, habitat and microhabitat, structure of vegetation, topographic features, soil type, texture, and soil parent material.

If the species is associated with a wetland, provide a description of the direction of flow and integrity of surface or subsurface hydrology and adjacent off-site hydrological influences as appropriate;

The number of individuals in each special status plant population as counted (if population is small) or estimated (if population is large);

If applicable, information about the percentage of individuals in each life stage such as seedlings vs. reproductive individuals;

The number of individuals of the species per unit area, identifying areas of relatively high, medium and low density of the species over the project site; and

Digital images of the target species and representative habitats to support information and descriptions.

FIELD SURVEY FORMS

When a special status plant or natural community is located, complete and submit to the CNDDB a California Native Species (or Community) Field Survey Form19 or equivalent written report, accompanied by a copy of the relevant portion of a 7.5 minute topographic map with the occurrence mapped. Present locations documented by use of GPS coordinates in map and digital form. Data submitted in digital form must include the datum20 in which it was collected. If a potentially undescribed special status natural community is found on the site, document it with a Rapid Assessment or Relevé form21 and submit it with the CNDDB form.

BOTANICAL SURVEY REPORTS

Include reports of botanical field surveys containing the following information with project environmental documents:

Project and site description

A detailed map of the project location and study area that identifies topographic and landscape features and includes a north arrow and bar scale; and,
A description of the proposed project;

A written description of the biological setting, including vegetation and structure of the vegetation; geological and hydrological characteristics; and land use or management history.

Detailed description of survey methodology and results :
Dates of field surveys (indicating which areas were surveyed on which dates), name of field investigator(s), and total person-hours spent on field surveys;

A discussion of how the timing of the surveys affects the comprehensiveness of the survey;
A list of potential special status species or natural communities;
A description of the area surveyed relative to the project area;
References cited, persons contacted, and herbaria visited;
Description of reference site(s), if visited, and phenological development of special status plant(s);
A list of all taxa occurring on the project site. Identify plants to the taxonomic level necessary to determine whether or not they are a special status species;
Any use of existing surveys and a discussion of applicability to this project;
A discussion of the potential for a false negative survey;
Provide detailed data and maps for all special plants detected. Information specified above under the headings "Special Status Plant or Natural Community Observations," and "Field Survey Forms," should be provided for locations of each special status plant detected;
Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms should be included in the environmental document.
A vegetation map that uses the National Vegetation Classification System and highlights any special status natural communities. If another vegetation classification system is used, the report should reference the system, provide the reason for its use, and provide a crosswalk to the National Vegetation Classification System.

Assessment of potential impacts :

The California Natural Resources Agency requires parties to "Consider nearby populations and total species distribution"and "consider nearby occurrences and natural community distribution"and [a] discussion of direct, indirect, and cumulative impacts to the plants and natural communities."

as well as:

A discussion of threats, including those from invasive species, to the plants and natural communities;
A discussion of the degree of impact, if any, of the proposed project on unoccupied, potential habitat of the species;
A discussion of the immediacy of potential impacts; and,
Recommended measures to avoid, minimize, or mitigate impacts.

The following is a *partial* list of plants that have been identified in close proximity to the proposed project. Locating these plants should be a part of the comprehensive plant study.

Northern Clarkia flower.

Shasta Snow-Wreath

Cantelow's Lewesia

Shasta Clarkia

Silky Cryptantha

ENDANGERED SPECIES:
(Also shortened for brevity and my underlines for emphasis)

Below is excerpts from the Endangered Species Act. I believe it shows what a serious a moral and legal issue it is to protect endangered species.

Wikipedia: The **Endangered Species Act of 1973** (ESA; 7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.) is one of the dozens of United States environmental laws passed in the 1970s. Signed into law by President Richard Nixon on December 28, 1973, it was designed to protect critically imperiled species from extinction as a "consequence of economic growth and development untempered by adequate concern and conservation."
The Act is administered by two federal agencies, the United States Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA).

Endangered Species Act

President Richard Nixon declared current species conservation efforts to be inadequate and called on the 93rd United States Congress to pass comprehensive endangered species legislation.

Congress responded with a completely rewritten law, the Endangered Species Act of 1973...

The stated purpose of the Endangered Species Act is to protect species and also "the ecosystems upon which they depend." California historian Kevin Starr was more emphatic when he said: "The Endangered Species Act of 1982 is the Magna Carta of the environmental movement." [16]

The ESA is administered by two federal agencies, the United States Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) (which includes the National Marine Fisheries Service, or NMFS). NOAA handles marine species, and the FWS has responsibility over freshwater fish and all other species. [* These agencies should be involved now.]

Preventing extinction

The ESA's primary goal is to prevent the extinction of imperiled plant and animal life, and secondly, to recover and maintain those populations by removing or lessening threats to their survival.

etition presents information that the species is imperiled, a screening period of 90 days begins

Species survival and recovery

Critical habitat

The provision of the law in Section 4 that establishes critical habitat is a regulatory link between habitat protection and recovery goals, requiring the identification and protection of all lands, water and air necessary to recover endangered species. To determine what exactly is critical habitat, the needs of open space for individual and population growth, food, water, light or other nutritional requirements, breeding sites, seed germination and dispersal needs, and lack of disturbances are considered.

As habitat loss is the primary threat to most imperiled species, the Endangered Species Act of 1973 allowed the Fish and Wildlife Service(FWS) and National Marine Fisheries Service(NMFS) to designate specific areas as protected "critical habitat" zones. In 1978, Congress amended the law to make critical habitat designation a mandatory requirement for all threatened and endangered species.

Several studies on the effect of critical habitat designation on species' recovery rates have been done between 1997 and 2003. The Taylor study in 2003 found that, "species with critical habitat were... twice as likely to be improving...."

Critical habitats are required to contain "all areas essential to the conservation" of the imperiled species, and may be on private or public lands. The Fish and Wildlife Service has a policy limiting designation to lands and waters within the U.S. and both federal agencies may exclude essential areas if they determine that economic or other costs exceed the benefit. The ESA is mute about how such costs and benefits are to be determined.

All federal agencies are prohibited from authorizing, funding or carrying out actions that "destroy or adversely modify" critical habitats (Section 7(a) (2)). While the regulatory aspect of critical habitat does not apply directly to private and other non-federal landowners, large-scale development, logging and mining projects on private and state land typically require a federal permit and thus become subject to critical habitat regulations. Outside or in parallel with regulatory processes, critical habitats also focus and encourage voluntary actions such as land purchases, grant making, restoration, and establishment of reserves.

Most provisions of the ESA revolve around preventing extinction. Critical habitat is one of the few that focuses on recovery. Species with critical habitat are twice as likely to be recovering as species without critical habitat.

Recovery plan

Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) are required to create an Endangered Species Recovery Plan outlining the goals, tasks required, likely costs, and estimated timeline to recover endangered species (i.e., increase their numbers and improve their management to the point where they can be removed from the endangered list)....

The goal of the law is to make itself unnecessary, and recovery plans are a means toward that goal. Recovery plans became more specific after 1988 when Congress added provisions to Section 4(f) of the law that spelled out the minimum contents of a recovery plan. Three types of information must be included:

- A description of "site-specific" management actions to make the plan as explicit as possible.
- The "objective, measurable criteria" to serve as a baseline for judging when and how well a species is recovering.
- An estimate of money and resources needed to achieve the goal of recovery and delisting.

The amendment also added public participation to the process. There is a ranking order, similar to the listing procedures, for recovery plans, with the highest priority being for species most likely to benefit from recovery plans, especially when the threat is from construction, or other developmental or economic activity. Recovery plans cover domestic and migratory species.

The question to be answered is whether a listed species will be harmed by the action and, if so, how the harm can be minimized. If harm cannot be avoided, the project agency can seek an exemption from the Endangered Species Committee, an ad hoc panel composed of members from the executive branch and at least one appointee from the state where the project is to occur. Five of the seven committee members must vote for the exemption to allow taking (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or significant habitat modification, or to attempt to engage in any such conduct) of listed species.

Long before the exemption is considered by the Endangered Species Committee, the Forest Service, and either the FWS or the NMFS will have consulted on the biological implications of the timber harvest. The consultation can be informal, to determine if harm may occur; and then formal if the harm is believed to be likely. The questions to be answered in these consultations are whether the species will be harmed, whether the habitat will be harmed and if the action will aid or hinder the recovery of the listed species.

If harm is likely to occur, the consultation evaluates whether "reasonable and prudent alternatives" exist to minimize harm. If an alternative does not exist, the FWS or NMFS will issue an opinion that the action constitutes "jeopardy" to the listed species either directly or indirectly. The project cannot then occur unless exempted by the Endangered Species Committee.

The Committee must make a decision on the exemption within 30 days, when its findings are published in the *Federal Register*. The findings can be challenged in federal court. In 1992, one such challenge was the case of *Portland Audubon Society v. Endangered Species Committee* heard in the Ninth Circuit Court of Appeals.[45]

The court found that three members had been in illegal *ex parte* contact with the then-President George H.W. Bush, a violation of the Administrative Procedures Act. The committee's exemption was for the Bureau of Land Management's timber sale and "incidental takes" of the endangered Northern Spotted Owl in Oregon.

Please provide the details of the comprehensive study that will be conducted to ensure the "protection of all lands, water and air necessary to recover endangered species." for (but not limited to) the endangered species listed below:

Shasta Salamander

Foothill yellow-legged frog

Northern Pond Turtle

Western Purple Martin

California Yellow Warbler

Little Willow Flycatcher

Bald Eagle

Osprey.

After they are identified, will they be ignored or protected? If the answer is protected, how does MGM propose to do that? The community needs to be involved in this identification process. Local citizens can help locate species and plants native to the area. This would also foster trust in the outcome of the study.

WETLANDS

The wetlands on this property are federally protected. Before any other step, this critical issue needs to be resolved.

FEDERAL AGENCIES SHOULD BE INVOLVED IN THE PROJECT NOW

Please explain why the following agencies are not involved:

The Bureau of Reclamation appears to be the only likely source of water for the project. Water from this federal agency automatically triggers the necessity for an Environmental Impact Statement. If there is a private water contract for the MGM contract, the Bureau's involvement is still required because of the aquifer on the property.

The unjust treatment of poor and/or minority communities is the reason Environmental Justice was enacted. In 1999, the the EPA Environmental Appeals Board remanded Knauf Fiberglass' PSD back to the Shasta County Air Quality Mgmt District for 'failure to provide an environmental justice analysis in the administrative record in response to comments raising the issue." Shasta Lake residents require this level of protection from the beginning of this proposed project.

the property that MGM proposes to develop is located in an area designated by The National Forest Service as a scenic highway. Certainly before the city considers rezoning the project site they need to verify it is not in violation with this designation. Northern California's prized recreational destination, Lake Shasta, is located only a mile or so from the project site! The National Forest Service has a significant role to play in this project.

The ESA is administered by two federal agencies, the United States Fish and Wildlife Service (FWS) and the National Oceanic and Atmospheric Administration (NOAA) (which includes the National Marine Fisheries Service, or NMFS). NOAA handles marine species, and the FWS has responsibility over freshwater fish and all other species. [* These agencies should be involved now.]

Most importantly, the Army Corp of Engineers to determine if these protected wetlands can be altered in any way.

I appreciate this chance to have my preliminary questions answered so I can participate more knowledgeably once the E.I.R. Is released.

Thank you,

Ed W. Coleman

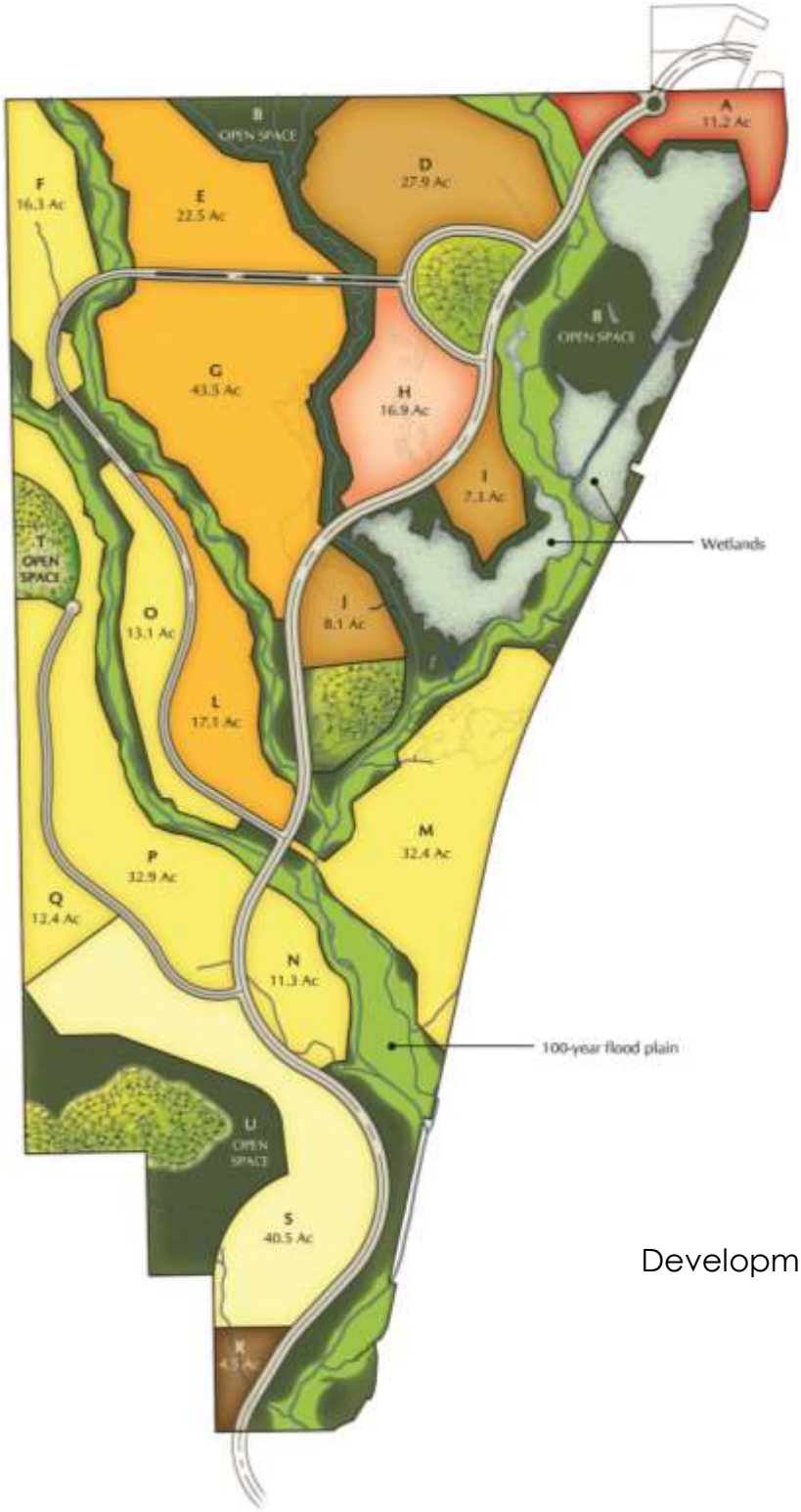
Ed W. Coleman
741Mussel shoals,
Shasta Lake, CA 96019

Appendix 3.0-1

AREA PLAN

Mountain Gate at Shasta

Area Plan



City of Shasta Lake
Development Services Department
1650 Stanton Drive
Shasta Lake, CA 96019

Draft
March 2014

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1.0 Area Plan Summary

1.1 *Purpose Statement and Range of Issues*

The purpose of the Mountain Gate at Shasta Area Plan (Area Plan) is to guide and regulate the land use and development of the Mountain Gate at Shasta property (Plan Area). The plan is accompanied by the Mountain Gate at Shasta Planned Development (PD) Zone District (**Attachment 1**) which implements the Area Plan and provides the City of Shasta Lake (City), current and future property owners, interested agencies, and the public with assurances as to the long-term development plan for the property. Related documents, incorporated herein by reference, include the Mountain Gate at Shasta Area Plan Environmental Impact Report (EIR), SCH# 2012-042010 and the Mountain Gate at Shasta Planned Development Zone District.

The policies and guidelines contained in this Area Plan and the adoption of this Area Plan represent the first step in the approval process. This Area Plan outlines future steps and approvals that will be required before physical development in the Plan Area occurs. The Area Plan addresses land use, the sequencing of development and implementation measures that will ensure public infrastructure and implementation of services occurs concurrently with new development.

Buildout of the Plan Area is anticipated to occur over a 15-25 year period, or as provided in the Development Agreement By and Between the City and Mountain Gate Meadows, LLC (the "Development Agreement"). This Area Plan attempts to balance the need for a coherent long-term vision with the equally important need to provide flexibility to accommodate changes in community needs and environmental regulations; to address specific site conditions; to simplify the review and implementation process by the City; and to accommodate other factors that will influence development during the buildout of the Plan Area.

1.2 *Project Location*

The approximately 590 acre property is located between Mountain Gate interchange and the extension of Cascade Boulevard just north of the Shasta Dam Boulevard interchange with Interstate 5 (I-5) as shown on **Figure 1-1**, Property Location Map). The property is entirely west of I-5, and is locally known as the Peri Property. The property is undeveloped and adjacent to developed areas of the City to the south and west as shown on **Figure 1-2** Aerial Photograph.

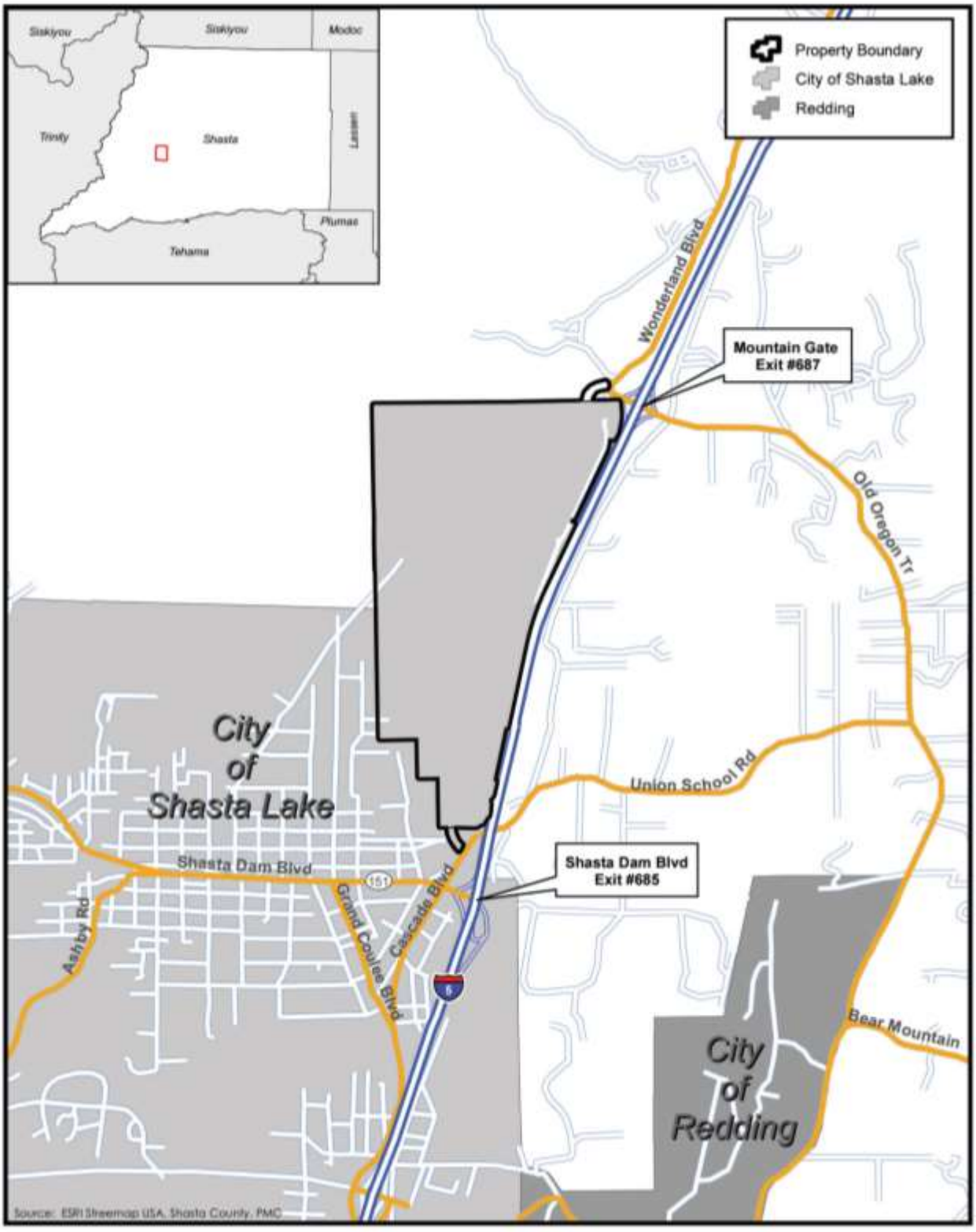


Figure 1-1
Property Location Map



Sharrah Dunlap Sawyer, Inc.

Figure 1-2
Aerial Photograph

1.3 *Compliance with the City's General Plan*

The purpose of the Area Plan is to implement the provisions of Shasta Lake General Plan Implementation Measure LU-(11), which applies to the Mountain Gate at Shasta development:

Prepare Area Plans for those areas identified in Policies LU-w and LU-x that will specifically address the following in a narrative and diagram form:

- *Master Development Plan*
- *The services and facilities necessary to serve the identified area based on ultimate development. Services and facilities include, but are not limited to roads, water, sewer, storm drainage, power, law enforcement, fire protection, schools, parks and trail system.*
- *Construction, maintenance and operation costs.*
- *Financing mechanisms to provide the necessary services and facilities.*
- *Maintenance finance mechanisms.*
- *A fiscal impact analysis of public services and facilities over a 20 year time period.*

  A schedule of the phasing of public improvements and anticipated development.
- *Preliminary grading and tree removal and replacement.*
- *The design and character of development must be identified including, but not limited to parcel sizes, building types, general architecture, scale, landscaping and amenities.*
- *Compatibility with adjacent land uses.*

The Area Plan also implements other applicable goals, objectives, and policies of the City's 1999 General Plan. By law, the provisions of the Area Plan must be consistent with the General Plan. This Area Plan amends the City's General Plan to include the schematic land plan and development concepts for the entire site.

This Area Plan is also a regulatory document. The Area Plan designations shown in Section 3 are intended to provide guidance for the Planned Development zoning for the property. The development performance standards in this Area Plan and Planned Development supersede any similar zoning districts or design standards in the City, and these standards were specifically designed and adopted by the City to apply to the property within the Area Plan.

2.0 Area Plan

2.1 *Area Plan Objectives*

The Mountain Gate at Shasta project has been designed to ensure the project will have positive benefits for the community. The following objectives have been identified:

- Provide a comprehensively planned project that is sensitive to environmental issues including wetlands, flood protection, the City's hillside grading concerns, and tree preservation.
- Protect the highest quality natural features and resources of the site.
- Conform to General Plan policies that designate the project site for urban development through implementation of an Area Plan.
- Promote compact mixed-use development that strives to provide a balance of uses, diverse housing and transportation choices, and contributes to a jobs-to-housing balance within the region.
- Provide a balanced mix of land uses that will allow a self-sufficient community, thereby reducing demands on regional roadways and services.
- Provide for a full range of housing densities and product choices affordable to a broad spectrum of income levels.
- Provide a master-planned community on a suitable site of sufficient size in proximity to an existing freeway, with access from existing interchange facilities.
- Establish a circulation system that meets local and regional transportation needs and accommodates a variety of transportation modes, including off-street trail systems and on-street bicycle lanes.
- Establish a pedestrian-friendly community that provides a continuous system of trails to link neighborhoods together and provide safe routes to parks and community-serving areas.
- Provide required park facilities sized to meet the needs of residents in the Area Plan and located as neighborhood focal elements.
- Provide a comprehensively planned infrastructure system (e.g., water treatment and distribution systems, sewer treatment and collection systems, electrical distribution systems, fire suppression facilities, general government facilities) to serve the needs of future residents of the development area.
- Provide adequate infrastructure improvements without adversely affecting existing levels of service.
- Phase development and infrastructure to respond to market demand while requiring new development to provide the infrastructure and public facilities necessary to serve the developing area.
- Establish financial mechanisms to ensure that the full range of services needed to serve the Area Plan are funded by the community and not by existing city residents.
- Provide revenue for the maintenance of public open space areas and park facilities, infrastructure, and public services within the development area.

2.2 *Development Plan*

The intended and preferred development is shown on **Figure 2-1,** Schematic Land Plan.

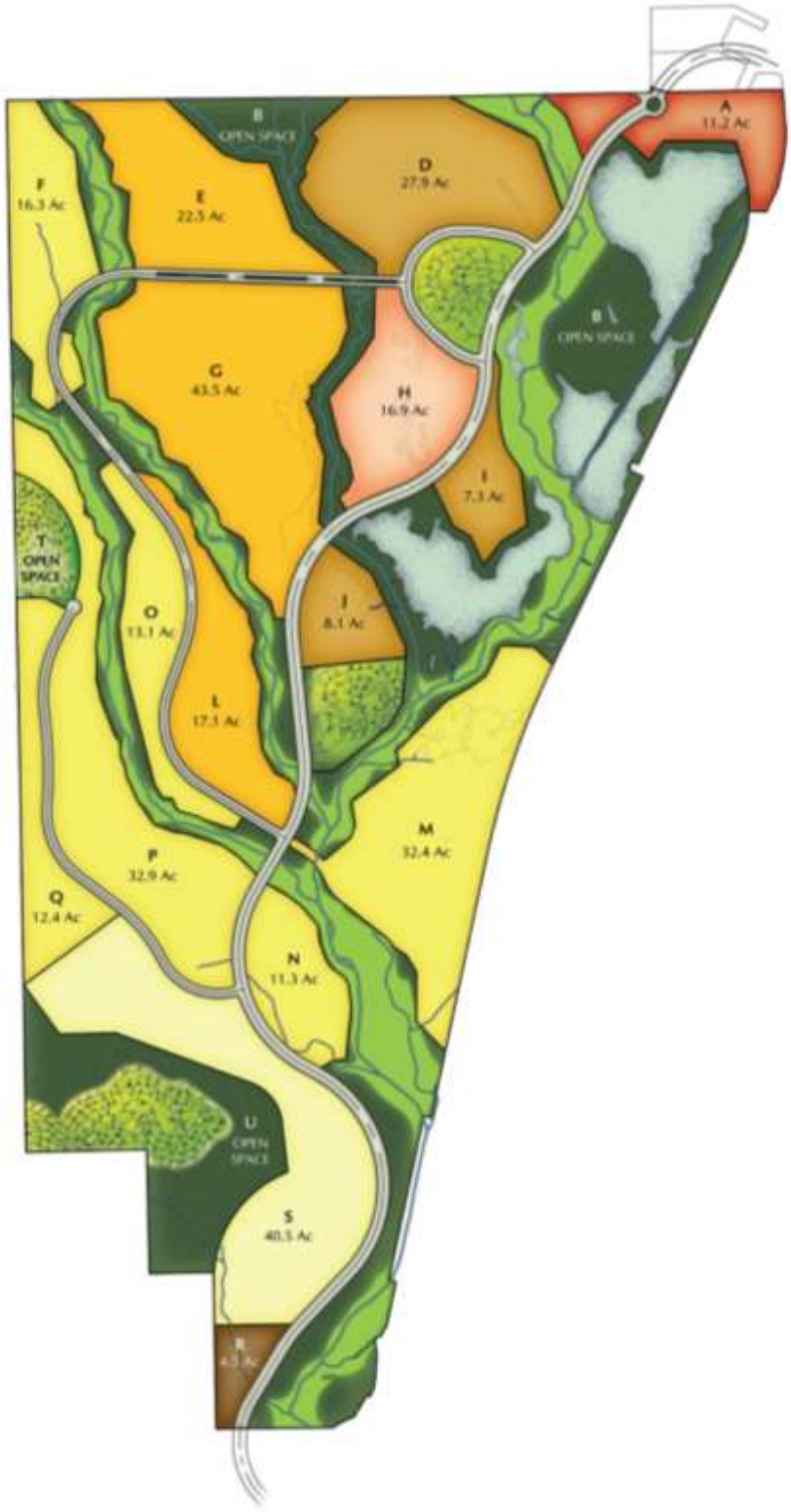


Figure 2-1
Schematic Land Plan

Sharrah Dunlap Sawyer, Inc. / William Hezmalhalch Inc.

Table 2-1 summarizes the land use categories shown in Figure 2-1 and implemented by the Mountain Gate Planned Development Zone District. The Unit Range column in Table 2-1 represents the maximum number of units possible in each land use designation. The calculations do not take into account site-specific characteristics or other factors that will reduce the maximum density from the upper values shown in Table 2-1. It is anticipated that some development may be clustered and designed to ensure density that might be reduced due to slopes or wetlands.

Housing types are expected to vary in each of the plan areas as project design incorporates the project site topography and site amenities. Several different housing types can occur in each of the plan areas as described in Section 2.4; however, the Area Plan limits overall density in each area. Housing types for each of the areas will be determined at the time of submittal of subsequent tentative subdivision maps.

The anticipated residential yield from this Area Plan is between 873 and 1,604 residential units of varying types. The Mixed Use commercial areas are not expected to develop into the maximum potential unit yield. The ranges shown are considered a maximum and may be less than shown but will not exceed the upper range.

Nonresidential land uses are concentrated in areas A and H as shown in **Figure 2-1** and **Table 2-1.** Area A allows for traditional commercial development; however, the uses in this area would be limited by the Planned Development zone proposed for the proposed project. Area H is intended as a mixed-use urban center and would contain both residential and nonresidential uses. This area may also contain live-work units with commercial and residential uses in the same building(s).

Neighborhood Parks are identified for areas C and K. A Community Park is identified in Area M as indicated in **Table 2-1;** however a more suitable location for the Community Park may be identified during review of subsequent tentative subdivision maps for the project.

2.3 *Density Transfer*

Each area of the Plan has been assigned a land use classification, which includes a density range. (See Table 2.1) An estimated unit yield for each area has also been assumed and is based upon factors such as site location, conditions and anticipated market demand for a variety of housing products. The estimated unit yield was used to determine the appropriate infrastructure needs for the Plan. As these areas develop, a more detailed assessment of the Plan may result in the need to adjust (reduce or increase) the number of units assigned to a particular area within the Area Plan.

It is the intent of the Area Plan to permit flexibility in adjusting the number of residential units assigned to each area within the Area Plan in response to market demand, subdivision design or other factors. To further this intent, units assigned to specific land use classifications or parcels may be transferred within the Area Plan area, provided that all the following criteria are met:

- The transferring and receiving parcels are within the Area Plan and the total maximum number of approved units is not increased (unless an increase is separately approved by the Planning Commission and City Council).

- The cumulative increase or decrease in units resulting from the minor density adjustment does not change by more than 20 percent (20%) the number of pre-transfer units allocated to any one of the parcels receiving or transferring the units as allocated by the Land Use Table (Table 2-1) of the Area Plan.

- The adjustments in density do not have a significant adverse effect on planned infrastructure, roadways, schools, or other public facilities.

To request a minor density adjustment, the owner or owners of both the transferring and receiving parcels shall submit to the Director all information needed to determine compliance with the above unit-transfer criteria. This submittal shall include information identifying the impacted parcels and designating the number of units being transferred; a Minor Amendment application with filing fee; and any other necessary documentation requested by the Director. The applicant shall also provide a revised Area Plan table reflecting the adjusted unit counts and densities, as well as any necessary maps. The revised table will allow the Director to track unit allocations within the Area Plan.

Table 2-1
MOUNTAIN GATE AT SHASTA AREA PLAN LAND USE
Proposed Density

Area[1]	Primary Land Use[2]	Acres[3]	Max. Building Coverage or FAR[4]	Potential Sq.Ft.[5]	Density Range	Unit Range	Probable Maximum Units[6]
A	Commercial	11.2	0.25	121,968	-	-	0
B	Open Space	181.5	0.1	-	-	-	0
C	Park	7.3	0.1	-	-	-	0
D	Medium Density Residential	27.9	0.7	-	4 - 7	112 - 195	176
E	Medium Density Residential	22.5	0.7	-	4 - 7	90 - 158	142
F	Very Low Density Residential	16.3	0.5	-	1 - 2	16 - 33	30
G	Medium Density Residential	43.5	0.7	-	4 - 10	174 - 435	392
H	Mixed Use Commercial	14.9	0.1	73,616	-	-	0
	High Density Mixed Use		0.7	-	11 - 20	131 - 238	215
	Fire Station	2	0.7	-	-	-	0
I	Medium Density Residential	7.3	0.7	-	4 - 7	29 - 51	46
J	Medium Density Residential	8.1	0.7	-	4 - 7	32 - 57	51
K	Park	7.6	0.1	-	-	-	0
L	Low Density Residential	17.1	0.5	-	2 - 4	34 - 68	61
M	Community Park	13	1.5		2 - 4	39 - 78	0
	Low Density Residential	19.4	0.5				70
N	Low Density Residential	11.3	0.5	-	2 - 4	23 - 45	41
O	Low Density Residential	13.1	0.5	-	2 - 4	26 - 52	47
P	Low Density Residential	32.9	0.5	-	2 - 4	66 - 132	119
Q	Very Low Density Residential	10.4	0.5		1 - 2	10 - 21	19
	Electric Substation	2	0.7				0
R	High Density Residential	4.5	0.7	-	11 - 30	50 - 135	122
S	Very Low Density Residential	40.5	0.5	-	1 - 2	41 - 81	73
T	Open Space	5.9	0.1	-	-	—	0
U	Open Space	33.6	0.1	-	-	—	0
R.O.W.	Rights-Of-Way	36.2	-		-	—	0
Totals		**590.0**	—	**195,584**	—	**873 – 1,779**	**1,604**

[1]See Figure 3.0-3 for location of land use areas.

[2]Several identified public uses (i.e., parks, fire station, electric substation) are likely to occur as indicated; however, it is possible that public uses will be located in other development areas, other land in the City, or removed from the Area Plan. In this instance, the development potential of the property formerly intended for the public use shall be equal to that of the lowest density in the same development area provided the overall number of units does not exceed 1,604 as shown in the table.

[3]All acreages are estimates.

[4]Floor area ratio for non-residential uses only, Maximum building coverage for residential uses.

[5]Maximum potential square footage of all structures within the land use designation.

[6]Topography and site constraints would limit the overall density. Approximately 1,604 units is considered the development limit of the site in this Draft EIR

2.4 *Area Plan Land Use Designations*

The Area Plan provides for the following land use designations:

Residential. This land use designation has five density ranges within the Area Plan: Very Low Density, Low Density, Medium Density, High Density, and High Density Mixed Use. Generally, each of the designations is intended to address a specific housing need.

- **Very Low Density Residential, 1 – 2 units per acre**. This housing type will be used in areas that would be difficult to provide a more intense development pattern due to wetlands, sensitive biological resources, or topography. This designation is consistent with the Large Lot design depicted in **Figure 2-2.**

- **Low Density Residential, 2 - 4 units per acre.** The Low Density Residential areas are intended for single-family detached, half-plex units and similar and compatible uses.

- **Medium Density Residential, 4 - 7 units per acre**. Homes in this designation will provide the majority of the housing opportunity within the Area Plan. Similar in intensity to other housing development in the City, this housing type will take advantage of the areas of the site largely unconstrained by wetlands, biological habitat or topography. This designation can accommodate the Large Lot design depicted in **Figure 2-2**, as well as Medium and Small Lot, and Alley Loaded designs depicted in **Figure 2-3.**

- **High Density Residential, 11 – 30 units per acre.** This housing type is intended to provide a variety of design options. Possible housing designs included in this designation include: Town Home and Multi-Family, Alley and Green Court, Small Lot Residential (**Figure 2-3**), Duplex, Triplex and apartment housing types.

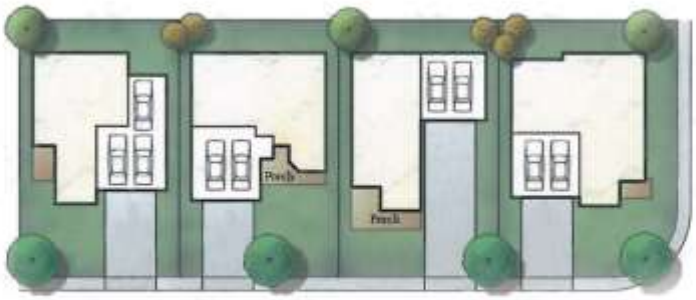
- **High Density Mixed Use, 11 – 20 units per acre.** This designation is also an integral part of the mixed-use Area H, intended to support a mix of residential and non-residential uses. The density range encourages different housing designs and apartments with a wide range of housing costs. (**See Figure 2-3**)

Note: Figures are representative. Individual floor plans and lotting considerations will be determined at the project level by individual developers during review and approval of each subsequent tentative subdivision map or other discretionary approval.

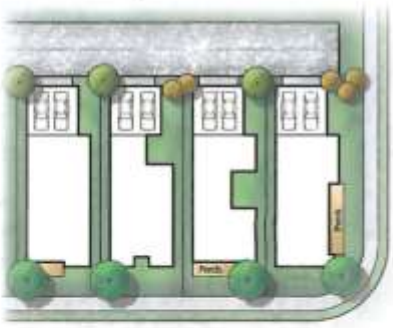




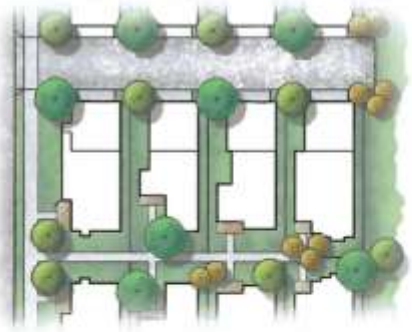
Figure 2-2
Very Low and Low Density Residential Lot Exhibits



Small Lots



Alley Loaded



Green Court



Town Homes



Apartments

Figure 2-3
Medium and High Density Residential Lot Exhibits

Commercial. There are two commercial areas within the Area Plan: Areas A and H. Area A is intended to support conventional commercial uses including retail stores, movie theaters, grocery stores, banks, health clubs, etc., that address the commercial needs of both the residents of the Area Plan, and the City as a whole. Area A, located nearer to the Mountain Gate Interchange at I-5, is also suited for freeway-oriented businesses such as hotel/motel, fast food and gasoline/fueling stations.

Mixed-Use. Area H is intended to provide design flexibility leading to the creation of a focal point for the Area Plan. By allowing a mix of residential and non-residential uses, the Area Plan envisions unique housing styles combined with specialty retail uses catering primarily to the Area Plan residents. Uses in this area might include professional offices, medical services, coffee shops, book stores, dry cleaners, and other service uses. Housing types may range from large lot single family detached to town homes or apartments located over street-front commercial uses. The maximum intensity of development for these areas is 20 units per acre for residential use and 73,616 square feet for non-residential use.

Park and Trail System. There are two neighborhood parks and one community park identified in the Area Plan that will be developed consistent with the City's Park System Master Plan. These may include ball fields, soccer fields, parking areas and restrooms. The parks are part of a larger open space and trail system intended to link the residential uses along roadways and water courses, to the recreation provided on site. This is intended to provide for restrooms, storage areas and pavilions or other neighborhood recreation structures. (**Figure 2-4**)

Wetland and Open Space. The Area Plan has a number of unique biological, wetland and topographical features that add character to the site and are incorporated into the design concept. Much of these areas will be left undisturbed during construction and left as open space after completion. These areas will have minimal improvements largely limited to trails. Because of the sensitivity of some of the areas, there may be no improvements at all. This would allow for small structures at trail crossings, picnic areas as appropriate, etc. No buildings or structured use is planned within these areas. Although storage for maintenance equipment might be appropriate.

Public Facilities. Public facilities are not shown on the land use map but may occur at any location within the area plan boundaries. Facilities can include water tanks, pump stations, wastewater lift stations, power substations, fire hydrants, street lights, parks, bike paths, trails, fire stations, schools, and similar facilities needed to serve the residents within the area plan. Specific needs and locations will be determined during review of subsequent tentative subdivision maps or other discretionary approvals for the project.

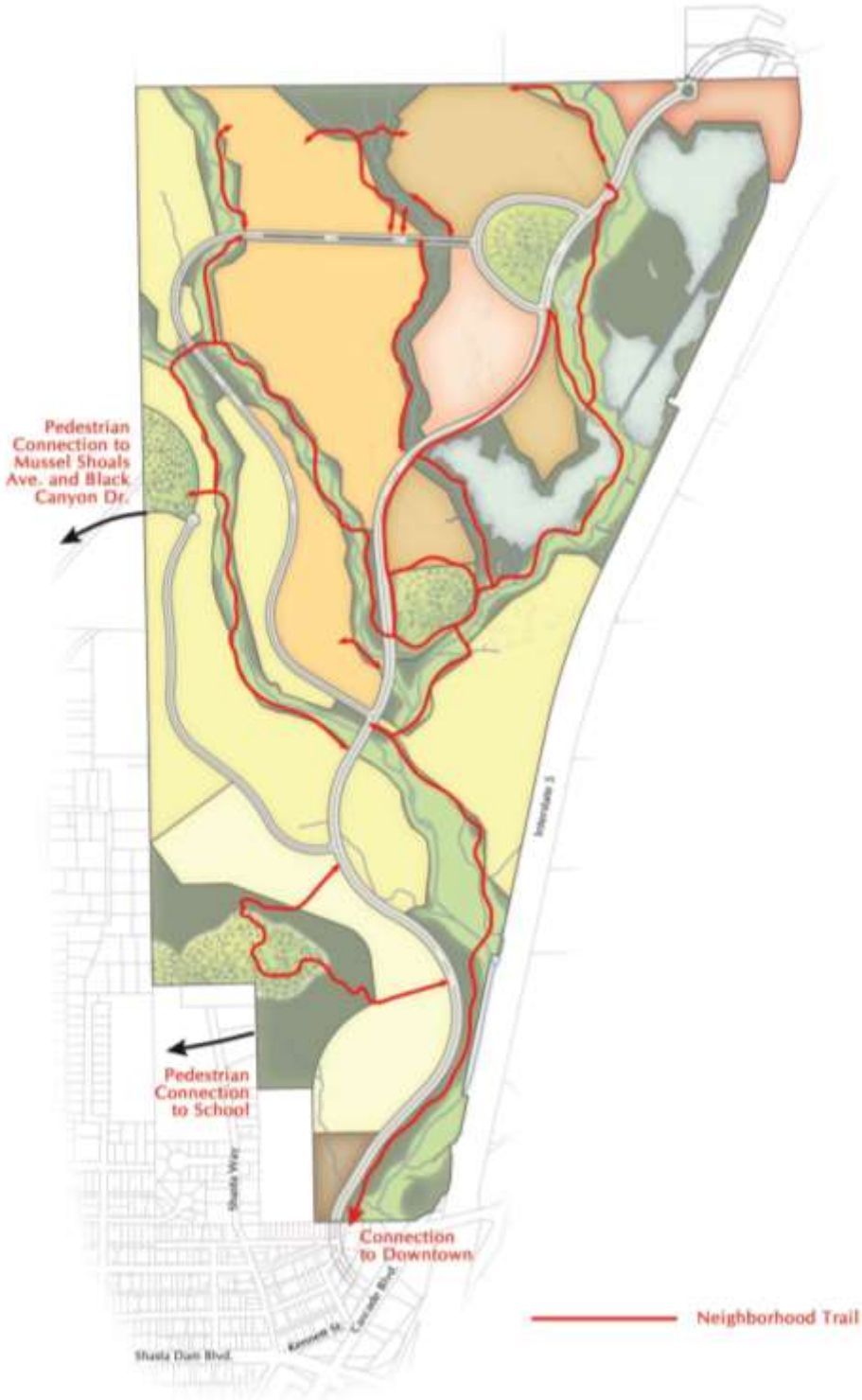


Figure 2-4
Neighborhood Trail System

Sharrah Dunlap Sawyer, Inc.

2.5 Area Plan Architectural and Site Design

Architectural and site design shall be governed by adopted Design Guidelines for the project. These guidelines shall be considered during the design and review of future development proposals, and are to be used in conjunction with other applicable zoning development standards, ordinances and/or special development requirements. Examples of possible architectural and site design for various development types are shown in **Table 2-3.**

In addition to the City's Design Guidelines, development within the Area Plan will be guided by Covenants, Conditions and Restrictions (CC&Rs) administered by future property owners and/or a Homeowner's Association. The CC&Rs will be recorded in the office of the Shasta County Recorder concurrently with each subsequent tentative subdivision map and will provide more specific criteria. The City shall review the CC&Rs prior to recordation to determine consistency with the City's requirements.

The City's design criteria are not intended to be rigid or restrict creative solutions. The planning commission, at its discretion, shall have the authority to consider and accept alternative site and/or building designs that are determined to meet the general intent of the adopted Design Guidelines. The Design Guidelines shall incorporate the following objectives for all development:

- Encourage originality, flexibility and innovation in site planning and development, including the architecture, landscaping and design of proposed developments in relation to the city as a whole and/or surrounding areas.

- Discourage monotonous, drab, unsightly, dreary and inharmonious developments, minimize discordant and unsightly surroundings and visual blight, and avoid inappropriate and poor quality design.

- Aid in assuring that structures, signs and other improvements are properly related to their sites and the surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping and that proper attention is given to exterior appearances of structures, signs and other improvements.

The Design Guidelines shall incorporate the following objectives for commercial, mixed-use and multi-family development.

Site Design

1. Sites shall be developed in a coordinated manner to complement adjacent structures through placement, architecture, colors and size/mass.

2. Buildings on the same site shall be clustered and incorporate plazas, court-yards, and other pedestrian use areas.

3. Sites shall be designed to avoid the appearance of domination by automobiles. Positive methods to achieve this concept include:

    - Orienting buildings to fronting streets and placing parking at the rear and/or sides;

    - Designing the required parking area into smaller, discrete, connected lots rather than large, single-use lots;

- Providing well-defined pedestrian walkways through parking areas and from public sidewalks into the site. Well-defined walkways use pavers, changes in color, texture and composition of paving materials and vertical plantings such as trees and shrubs. The minimum width of walkways shall be five feet.

- Parking areas shall be designed to be partially screened from view from adjacent streets and building occupants. Screening can be accomplished through a number of methods, including:

    - Orienting buildings away from parking areas;

    - Placing buildings between streets and parking lots;

    - Using extensive landscape screening, beams, and architecturally treated walls.

4. Sites shall incorporate transit-compatible designs. Transit compatibility means designs that are pedestrian oriented, provide safe and convenient access to transit facilities, and foster efficient transit service.

5. Site plans shall be designed to provide vehicle and pedestrian connections with adjacent sites.

6. All utility lines shall be placed underground onsite and along street frontages.

7. Phased projects shall be designed so each phase, in and of itself, is complete in its functional, traffic, parking, visual, drainage and landscaping aspects.

Building Design

1. No single architectural style is required. However, design themes that reflect the city's small-town atmosphere, and its natural resource and recreation-based heritage, are preferred. Such design themes typically include use of stone, heavy timbers, other natural appearing materials and colors in the building, and overall site design. Building accents which relate to the community's origin in the late 1930's and 1940's are also encouraged. Reliance on or use of standardized "corporate or franchise" design prototypes that are more representative of typical urban development is prohibited.

2. Buildings shall reflect an individual design that has considered site location, conditions, and surrounding development. Building design shall provide a sense of permanence and timelessness. High quality construction and materials should be used to ensure that buildings will not look dated or worn down over time. Building designs shall reflect an individual style and form and not merely current trends.

3. A consistent visual identity shall be applied to all sides of buildings visible to the general public. In these areas, all building sides shall have an equivalent level of quality of materials, detailing and window placement. Abrupt ending of architectural details shall be avoided with no radical change in details or features or materials.

4. Long blank walls shall be prohibited. Positive methods to achieve this objective include change in colors and materials, placement of windows, use of awnings and canopies, and architectural details and features such as corners, setbacks, and offsets. Windows at ground level may be tinted; however, mirrored windows are not allowed. Reflective roofing is not allowed.

5. Buildings facing streets shall incorporate pedestrian scaled entrances. Pedestrian scaled entrances are those that provide an expression of human activity or use in relation to building size. Doors, windows, entrances and other features shall be designed to respond to the size of the human body and not give the appearance of anonymity or over-whelming the building's users.

6. Modulation (defined as a measured setback or offset in a building face) shall be incorporated to reduce overall bulk and mass of buildings. The planes of exterior walls should not run in one continuous direction more than fifty (50) to sixty (60) feet without an offset or setback.

7. Large buildings shall have height variations to give the appearance of distinct elements.

8. Building design and/or facade shall incorporate traditional building materials such as masonry, stone, heavy timbers, brick and other natural appearing materials.

9. Building colors and roof materials shall accent, blend with, and complement surroundings. Bright or brilliant colors shall be reserved only for trim and accents.

10. Existing buildings that have faded exterior color(s), and/or that have generally a worn or weathered appearance, shall be repainted prior to establishment of any new uses.

11. Landscape areas or planting beds shall be provided around perimeters to separate buildings from surrounding pavement areas.

12. Outdoor storage areas, mechanical equipment, utility vaults, and trash receptacles shall not be visible from adjacent streets and pedestrian walkways.

13. Outdoor mechanical equipment shall be appropriately screened from view and shall be designed to minimize noise. The method of screening shall be architecturally integrated with the building with respect to materials, color, shape and size.

14. Site services shall be located on the least visible side of a building or site or within interior building spaces.

15. Ground level outdoor enclosures shall be composed of materials similar to the main structure.

16. Materials used for site features such as fences, screen walls, and signs shall be appropriate to the area where the development is located and shall complement building design through materials, color, shape, and size.

17. Developments shall provide transition with adjacent uses especially regarding building location, size and scale. No single building or development shall dominate adjacent uses in terms of size, bulk, view blockage, or shading.

Signs

Commercial signage shall take into consideration the scale and location of the project and signage needs for multi-use occupancies. The Design Guidelines shall incorporate the following:

Building Signs

1. Individual letters rather than cabinet signs are preferred.

2. Backlit individual letters are a preferred alternative.

3. Signs shall be compatible in scale and proportion with building design and other signs.

4. A specific sign program or concept shall be designed and approved by the Director for multiple tenant buildings or complexes. Color and letter style shall be coordinated when businesses share the same building and consistent sign patterns (placement on buildings) shall be utilized.

5. Exposed neon tubes are acceptable for non-letter sign elements but are prohibited for letters.

Freestanding Signs

1. Freestanding signs shall provide only the name and address of the building and/or building tenants.

2. Project landscaping shall be designed to incorporate freestanding signs.

Landscaping

1. All landscaping throughout the development shall comply with the City's Water Efficient Landscaping Ordinance as applicable to promote the values and benefits of landscaping while recognizing the need to invest water and other resources as efficiently as possible.

2. Landscape materials shall be native plants that are adaptable to local conditions, easily maintained, and drought tolerant.

3. Development shall provide unity of design through repetition of plants and coordination with adjacent developments.

4. The design for parking areas shall include deciduous and evergreen trees to provide shade and break up expanses of asphalt.

5. Landscape islands or medians shall have no dimension narrower than four to five feet.

6. Interior landscaping is required for parking lots containing ten or more spaces at a ratio of twenty (20) square feet of landscape area for every one hundred (100) square feet of parking area. All landscaped areas shall be protected by wheelstops or curbing, or be of sufficient width to prevent damage to plants by overhanging vehicles.

7. Existing vegetation shall be incorporated into overall site design.

8. Reclaimed water shall be used in the irrigation system if practicable.

9. Required perimeter setback areas shall be densely landscaped with a combination of trees and shrubs, which form a ninety (90) percent ground cover within three years of planting.

10. Interior site landscaping is required to define pedestrian ways, enclose outdoor gathering and seating areas, and reduce building mass.

11. Architectural features such as low walls, fountains and sculptures may be used in places where planting areas are limited or restricted.

12. Project entrances shall be enhanced through changes in paving materials such as brick payers, textured and colored concrete, providing entry structures and unity in planting of trees and shrubs.

13. Individual trees along walkways and along sidewalks in the internal portions of projects shall be planted in tree wells or planter boxes.

14. Open stormwater detention facilities shall be incorporated into project landscaping and open space where geographically feasible.

15. Open stormwater detention facilities shall be landscaped and visually screened.

Lighting

1. Moving and flashing lights are prohibited.

2. Cut-off lenses or hoods shall be used to prevent glare and light spill off project site onto adjacent properties, buildings and roadways.

3. Lighting standards shall be designed and sized to be compatible with the character of the development.

4. Building lighting shall be installed in such a manner as to accent the primary features of the building.

5. Landscape lighting shall be held to a minimum, particularly if the structural elements are washed with light. Soft, directed path lighting and accent lighting at feature planting spaces shall be the extent of any landscape lighting.

aScreening Objectives

1. Each site shall have a trash enclosure with three sides being of masonry or concrete, compatible with the masonry or concrete used for the building, with the fourth side being double gates for access to the enclosure. Gates and walls shall be at least six feet high to fully enclose all trash and trash bins. The gates shall be constructed of solid redwood or equally acceptable material.

2. Where transformer pads may be seen from any street, they shall be screened with either heavy planting of an appropriate height or a masonry wall similar to that required for trash enclosures. Screening shall not restrict access for servicing purposes.

3. Truck loading in view of any street shall be screened in a manner to complement the architecture of the building. Although rear loading is preferred, side loading will be permitted, but not within 70 feet of the front wall of the building. Street front loading shall not be permitted.

4. All outdoor storage shall be visually screened from all streets and adjacent property. Said screening shall form a complete opaque screen up to a point eight feet in vertical height but need not be opaque above that point. No storage shall be allowed to extend above the line of sight.

5. Outdoor storage may include all company-owned and operated motor vehicles, with the exception of passenger vehicles. No storage shall be permitted between a frontage street and the building line.

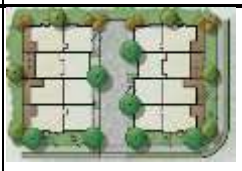
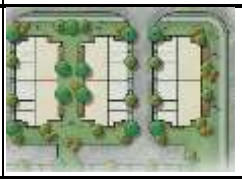
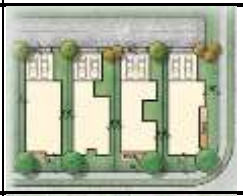
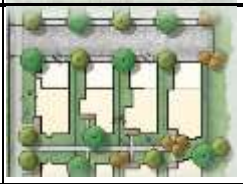
6. Roof-mounted ventilators shall be a maximum of 2½ feet above the point to which they are attached and are to be painted or prefinished to match the building parapet wall.

7. Down spouts and roof overflow drains required for the front half of a building are to be located inside the building. All others are to be painted to match the adjacent building color.

8. Vents, louvers, exposed flashing, tanks, overhead doors, rolling and service doors are to be painted to match the building color.

9. All mechanical equipment, including air conditioning, ventilators or antennas, located on any roof shall be screened with a material compatible with the building wall and roof surfaces. All sides are to be finished to match the adjacent color of the building. No mechanical equipment shall be exposed on the wall surface of a building.

TABLE 2-2
MOUNTAIN GATE AT SHASTA SITE DESIGN AND ARCHITECTURAL EXAMPLES

Housing Type	Typical Site Placement	Possible Elevations
Small Lot Medium Density		
Medium Lot Low- Medium Density		 
Large Lot Low–Very Low Density		 
Town Home Medium–High Density		
Multi-Family High–Very High Density		
Alley Loaded Medium Density		 
Green Court Medium Density		
High–Very High Density		

Use Type	Potential Site Plan	Possible Elevations
Parkland		
Mixed Use High Density		
Neighborhood Retail		

3.0 Area Plan Policies

3.1 *General*

1. Each sub-area (A through R) shall be master planned individually through one or more phased tentative/final subdivision maps to ensure that the anticipated Area Plan density is achieved. Once a final map for a given sub-area has been approved by the City, building may occur in stages.

2. Architectural design shall comply with the adopted Design Guidelines as discussed Under Section 2.3 Above. An applicant for a building permit or use permit shall submit a plan to the Director which indicates how the City's adopted design and architectural objectives will be met. The submittal shall be made on a form prescribed by the Director.

3. Site planning shall consider the natural terrain of the properties and the existence of significant native trees and vegetation. Development shall conform to the provisions of the Shasta Lake Municipal Code, in particular the Tree Protection and Replacement Standards provision of Chapter 15.08 (Grading, Erosion Control and Hillside Development), and Chapter 12.36 Tree Conservation, as may be amended from time to time.

4. Each phase of construction shall complete the infrastructure needed to serve the phase, together with any extensions thereof as reasonably required by the City to provide for orderly development and public safety within the Plan Area.

5. All utilities shall be installed underground, except for necessary above-ground appurtenances such as high-voltage transmission lines, transformer boxes, lift stations, pressure stations, and other infrastructure facilities for which undergrounding is infeasible.

6. All public utilities shall be installed within the roadway right-of-way or within defined easements.

3.2 *Residential*

1. Single-family homes within the district may be subdivided in conventional lot designs or in any form of planned unit development with common amenities.

2. Residential development shall comply with the City's adopted Design Guidelines for the Area Plan.

3. Off-street pedestrian walkways shall be provided as shown conceptually on the Master Trails Plan connecting the sub-areas and streets or other walkways/trails to encourage pedestrian access between various Area Plan uses. **(Figure 2-4)**

3.3 Commercial

1. Commercial development shall comply with the adopted Design Guidelines for the Area Plan.

2. Buildings and sites may be subdivided provided that all common parking, access, utility, and common areas are included in appropriate reciprocal access, parking, and maintenance agreements to provide for the perpetual operation of the entire zoning district as one development.

3. Each phase of construction shall complete the infrastructure and parking needed to serve the phase, together with any extensions thereof as required by the City to provide for orderly development and public safety within the Plan Area.

3.4 *Mixed Use*

1. Mixed-Use development shall comply with the adopted Design Guidelines for the Area Plan.

2. Buildings and sites within mixed use areas may be subdivided as a planned development using air spaces or building pads together with common areas for parking and other shared facilities.

3.5 *Parks, Open Space and Trails*

Community Park

A community park is planned primarily to provide active and structured recreation opportunities. Community park facilities are designed for organized activities and sports, although individual and family activities are also encouraged. Community parks can also provide indoor facilities to meet a wider range of recreation interests. These parks serve a much larger area and offer more facilities than neighborhood parks. As a result, they require more support facilities, such as parking, restrooms, and covered play areas. Community parks usually have sport fields or similar facilities as the central focus of the park. Their service area is roughly a one- to two-mile radius.

The Community Park is proposed in Area M and will be developed concurrently with Phase 3 of the project. As stated in Table 2-1, it may be determined during review of subsequent tentative subdivision maps that the Community Park is better suited in another sub-area. The community park shall be dedicated to the City at the time the final subdivision map for the applicable area is recorded.

Neighborhood Parks

1. Concurrent with the development of Area D or H, the neighborhood park shown in Area C shall be dedicated to the City. The City may allow for the phasing of the park dedication consistent with the number of homes projected in Areas D or H. The park in Area C shall commence prior to buildout of areas D, E, G and H.

2. Concurrent with the development of Area J or M, the neighborhood park shown in Area K shall be dedicated to the City. The City may allow for phasing of the park dedication consistent with the number of homes projected in Areas J and M. The park shall commence prior to buildout of Areas J, M and N.

3. The parks shall be offered for dedication to the City along with the phased filing of final subdivision maps containing the park site. These parks may be landscaped with grass and shrubs and have play equipment, picnic benches and barbeques in accordance with approved agreements between developer(s) within the Plan Area and the City.

Open Space & Trails

1. Trail design may be flexible to account for topography, wetland features, sensitive biological habitat, etc.

2. To the extent practical and as permitted by regulatory agencies, trails shall be sensitive to natural water courses, drainages and existing contours and shall connect to sidewalks or other trails. Trail design may be modified to meet the needs of the specific development, or due to site features or topography.

3. Development of all areas of the plan shall provide access to Area Plan trails, as provided in **Figure 2-4**. Trails shall be incorporated into the design of each Area as appropriate to facilitate connectivity.

4. Connectivity of the trail system is an integral design component of the Area Plan. Connectivity may occur along public and private roadways, within easements and in open space areas. The trails shall provide access to both residential and non-residential uses. Of particular importance will be connectivity between park facilities and residential areas.

5. Trails shall be a minimum of four to five feet wide and may be surfaced with asphalt paving, concrete, gravel, decomposed granite, or bark. Significant trees and significant rock outcrops shall be avoided wherever possible.

Wetlands and Open Space

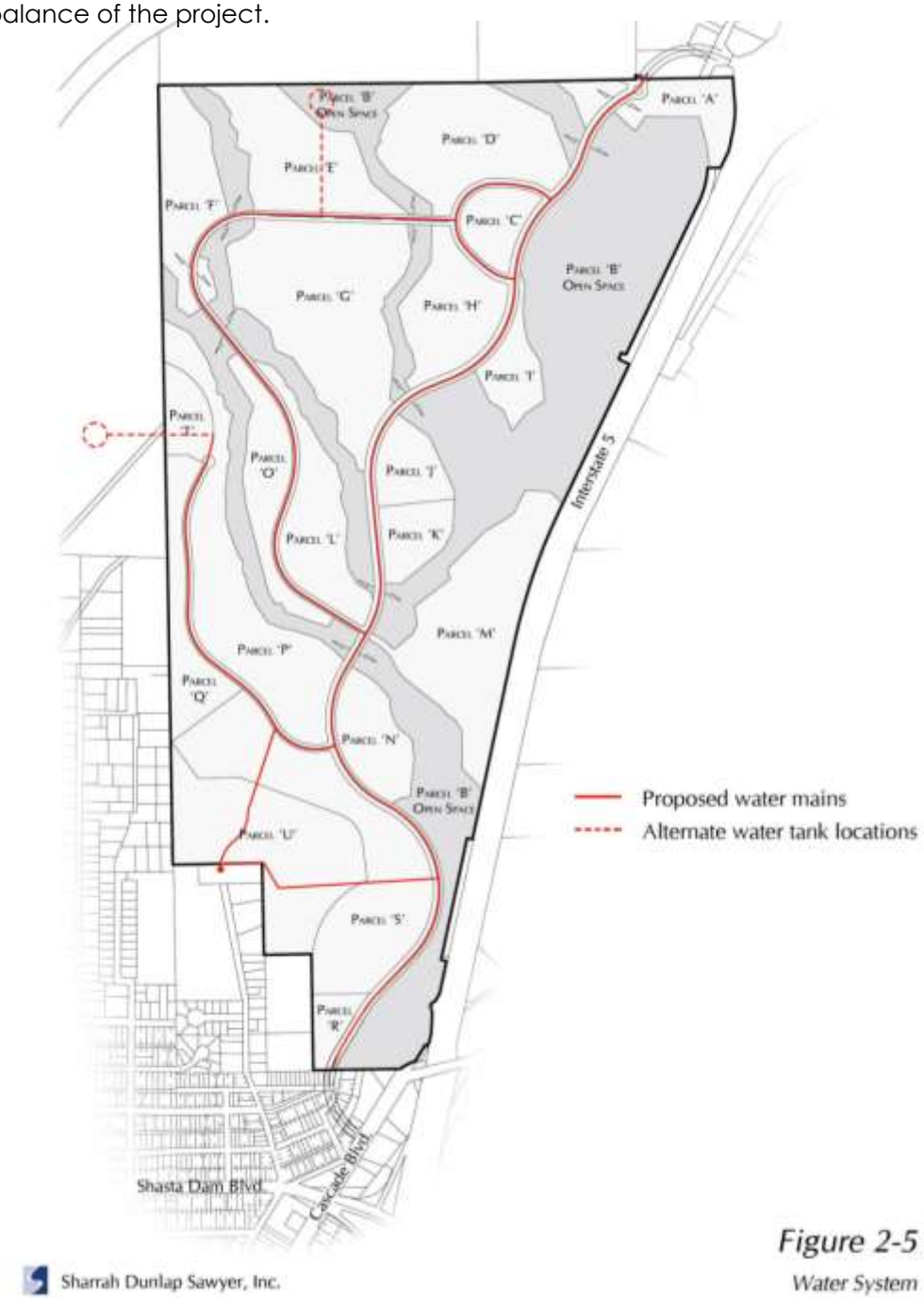
1. Areas designated as wetlands and open space shall be indicated on all development plans and maps.

2. The developer shall provide public access easements for trails of a width to be determined prior to approval of subsequent tentative subdivision maps or other discretionary approvals. The width of the easement shall take into consideration the paved/walkable surface width and setbacks from private property and waterways or sensitive areas. The public access easement shall not conflict with any requirements or easements stemming from any permit issued or that may be issued, by an agency of the State of California or the federal government.

3.6 *Water*

The Area Plan assumes the City will provide water service to the Mountain Gate at Shasta Project. The water distribution plan will follow subdivision streets as outlined in **Figure 2-5, Water System Plan**. A number of improvements to the City's water system are required to adequately serve the project. A 1.0 million-gallon tank may be constructed off-site from the project as identified in the City's Master Water Plan. If the off-site water tank is constructed, a water main will be constructed in Black Canyon Road to the new tank.

A water transmission line will be constructed from the tank to the project's water system in order to provide adequate water supply to the northerly two-thirds of the project. Booster pumps will be constructed offsite adjacent to existing Water Tanks Nos. 3A and 3B to provide adequate water supply to the balance of the project.



Sharrah Dunlap Sawyer, Inc.

Figure 2-5
Water System

3.7 *Wastewater*

The City's wastewater (sewer) collection system will be expanded to serve the Mountain Gate at Shasta Project. The wastewater collection system is shown on **Figure 2-6, Wastewater System Plan**. The majority of the wastewater system plan will follow subdivision streets. Those sewer mains that are required to be constructed outside of the subdivision's roads will be designed to provide for access to manholes. A number of downstream offsite improvements are required to the City's sewer system in order to adequately serve the project. A new lift station is required within the Plan Area near the southerly boundary of the project site. The lift station will tie in to the existing force main that terminates at Cascade Boulevard, north of Shasta Dam Boulevard. Additional off-site wastewater system improvements may be required and will be identified prior to approval of subsequent tentative subdivision maps or other discretionary permits. It is the intent of the project design to utilize reclaimed wastewater within the project boundaries to the extent practicable. The City has an existing reclaimed water system in place and an existing reclaimed water main near the south boundary of the project.



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Figure 2-6
Wastewater Collection System

3.8 *Storm Drainage*

The Mountain Gate Project is designed to continue to convey runoff from the three named streams (Moody Creek, Rancheria Creek, and Rancheria Creek—North Branch) as well as the unnamed tributary that is located between the two Rancheria Creeks. The project is designed to avoid the 100-year floodplain with the exception of necessary road crossings.

The storm drain collection and conveyance system will include inlets, manholes, pipes and outfall structures necessary to collect and convey runoff during the appropriate design storms as established by the City. The overall drainage system will be owned and operated by the City. Additionally, the storm drain system is required to provide storm water detention to a level that will mitigate an increase during peak flows from the project.

The storm drain system includes storm water detention basins that will be used to mitigate increases from the project. **Figure 2-7, Stormwater Detention System**, illustrates the proposed improvements. Finally, the storm water system will include water quality best management practices (BMPs) to control pollutant discharges to the extent practicable.

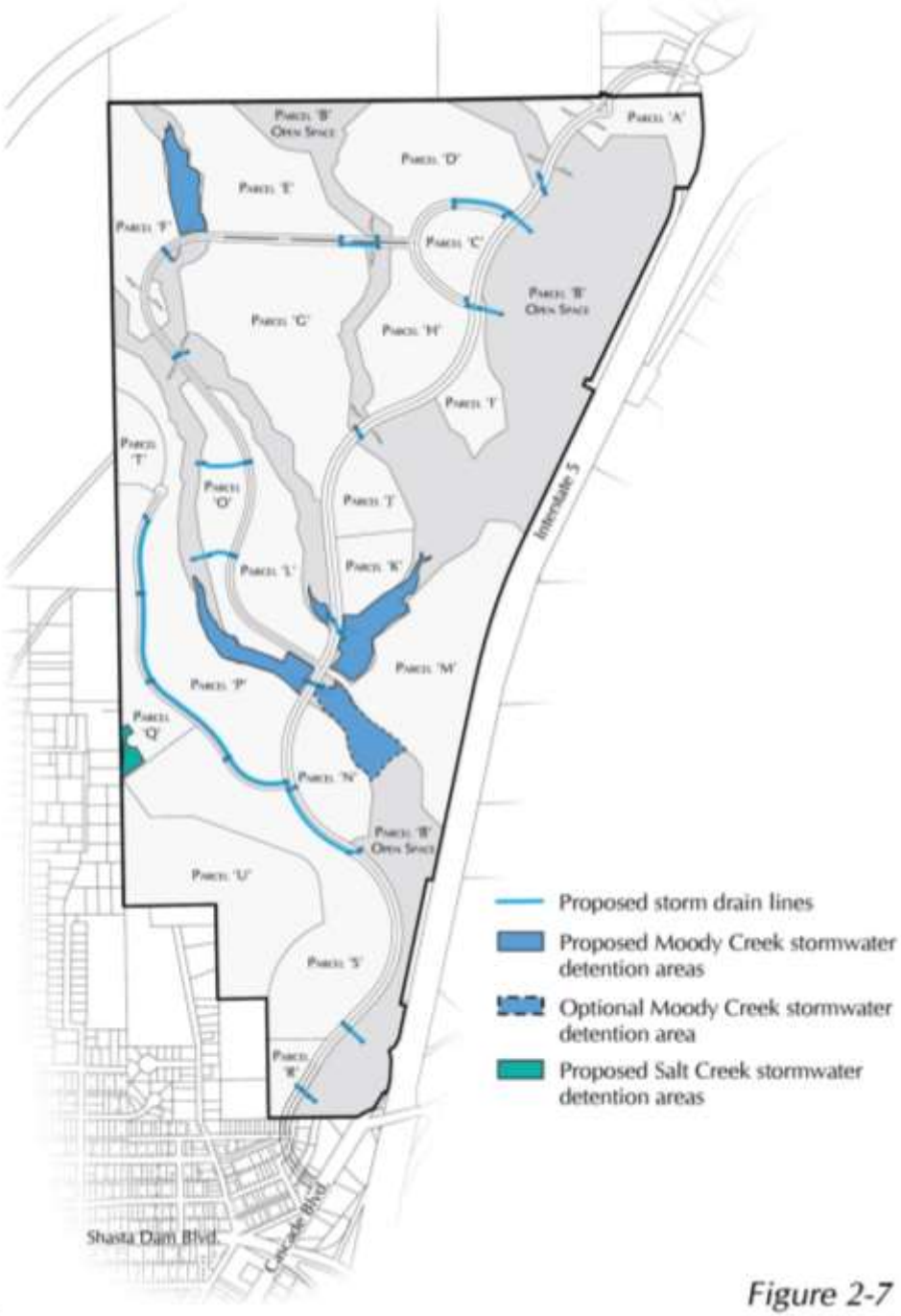


Figure 2-7

Stormwater Detention System

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3.9 Streets

1. Except as modified by the City Engineer as needed to ensure safe and efficient traffic, the requirements for minimum right-of-way widths shall be as shown on **Figure 2-8, Street Section,** and as defined below:

    a. 90' Right-of-Way (ROW) Arterial Road with separated sidewalks/trail easements, street trees and bicycle lanes. The width of each individual component may be reduced as appropriate to accommodate a landscaped center median.

    b. 82' ROW Arterial Road with separated sidewalks/trail easements, street trees and bicycle lanes. The width of each individual component may be reduced as appropriate to accommodate a landscaped center median.

    c. 74' ROW Residential Collector with separated sidewalks/trail easements, street trees, bicycle lanes and a landscaped center median

    d. 60' ROW Residential Collector with separated sidewalks/trail easements, and street trees and bicycle lanes. On-street parking may be prohibited as deemed appropriate. This street section does not include a landscaped center median.

    e. The roadway standards may be modified at the discretion of the City during review of subsequent tentative subdivision maps or other discretionary permits.

    f. All dead-end roads shall be constructed with a turn-around at the terminus approved by the City and the Shasta Lake Fire Protection District.

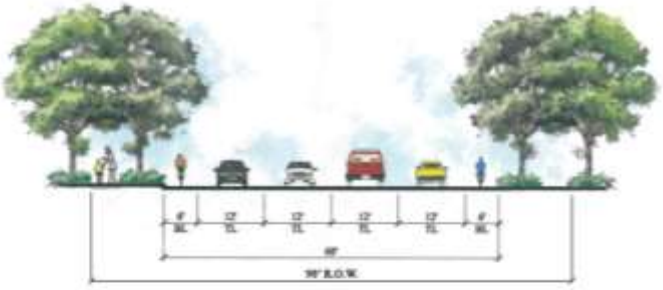
    g. The roadway standard may need to be widened in the vicinity of each fire hydrant or public transit/school bus stops, or at intersections to allow for efficient traffic flow.

    h. All private roads shall be developed to a structural standard, width, and design acceptable to the City Engineer.

    i. Pedestrian/bicycle and emergency vehicular access shall be provided via Black Canyon Road.

Arterial Road –

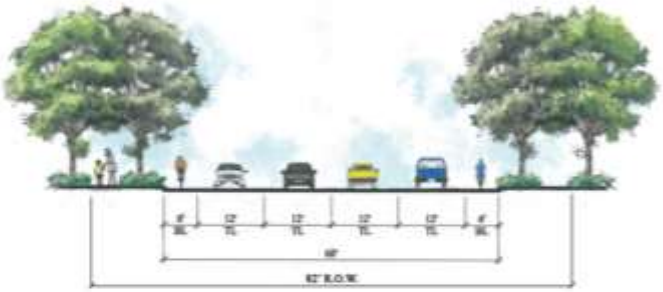
Includes separated sidewalks, street trees and bike lanes; can be modified to include a landscaped center median.



90' Right-of-Way Arterial Road

Arterial Road –

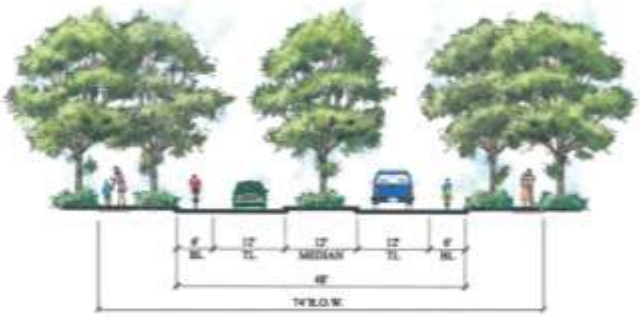
Includes separated sidewalks, street trees and bike lanes; can be modified to include a landscaped center median.



82' Right-of-Way Arterial Road

Residential Street –

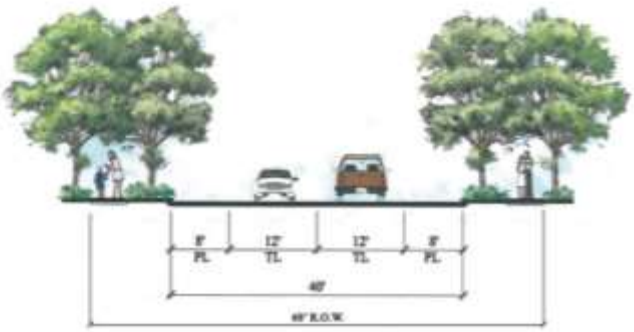
Includes landscaped center median, separated sidewalks, street trees and bike lanes.



74' Residential Collector with Median

Residential Street –

Includes separated sidewalk; can be modified to include bike lanes and restrict on-street parking



60' Residential Collector

Figure 2-8
Conceptual Street Sections

2. Street access onto Arterial Roadways from residential uses shall be from approved street intersections. No direct-driveway access to Arterial Roadways shall be permitted from single family residences. The City may approve shared driveway access from multiple-family or commercial developments as appropriate.

3. Street trees shall be provided along the Area Plan streets in accordance with landscape architect recommendations proposed by the applicant and approved by the City.

4. Streetlights will be provided along all Area Plan streets. Street lighting in residential areas shall consist of low, decorative fixtures along public walkways providing sufficient illumination for pedestrian safety. Parking lot lighting will be of a decorative nature compatible with the architecture surrounding the parking lot and will prevent light spill to the top and sides.

5. All construction shall meet the current standards of the City's adopted general engineering specifications and standard detail drawings unless an alternative standard is approved by the City Engineer.

6. Any entry treatments shall be approved by City staff prior to construction.

7. Area Plan streets, walks, drainage facilities, water facilities, sewer facilities, and underground utilities shall be based on plans approved by the City staff or utility provider, shall be inspected during construction to assure compliance with City or utility provider requirements, and shall be conveyed to the City staff or utility provider upon completion for operation and maintenance.

8. Provision for public transit and school bus stops shall be identified on improvement plans for each phase of development.

Solid Waste

1. Solid waste service to the site will be provided by the current franchise solid waste service provider serving the City. Curb side service will be available to all single-family residential areas and some multiple-family and non-residential areas. Where curb side service is not provided, all solid waste collection enclosures shall meet applicable standards for refuse receptacles, recycling areas, and hauler access.

3.10 *Other Public Services*

Schools

The Gateway Unified School District has established fees for new development, in accordance with state regulations, to be used to construct school facilities. School impact fees are paid directly to the Shasta County Office of Education. In addition, the school district receives money from various state funding sources and bond measures for the construction and improvement of school facilities.

Development within the Plan Area will contribute fees to the Gateway Unified School District for the construction and improvement of school facilities. The District will be included in review of all subsequent tentative subdivision maps within the Area Plan and may request a school site if needed as a result of the development proposal, or other development in the District. A school site can be located anywhere within the Area Plan.

Ten acres shall be set aside within the Area Plan for potential future development of a new school by the Gateway Unified School District. The ten acres shall be made available for purchase by the Gateway Unified School District for a period of three years from the date of approval of the applicable subsequent tentative subdivision map. In the event that the Gateway Unified School District elects not to purchase the site, the set aside land may be subdivided for future development consistent with the Area Plan.

Fire Protection

1. Prior to occupancy of the 50th housing unit, or earlier if directed by the City or Shasta Lake Fire Protection District in order to satisfy City requirements for fire safety access and evacuation, a paved fire access roadway shall be constructed from Cascade Boulevard to Wonderland Boulevard/Mountain Gate Road.

2. Prior to occupancy of the 500th residential unit, two acres located within either Area H or I shall be dedicated to the Shasta Lake Fire Protection District. The cost of construction of the fire station shall be borne by the Shasta Lake Fire Protection District.

Police Protection

1. All future development projects within the Area Plan shall participate in funding mechanisms designed to maintain the ratio of public safety officers to population, or population equivalent, at 1.5 officers per 1,000 residents.

4.0 Conceptual Phasing

4.1 *Overview*

The Area Plan provides for a comprehensively planned infrastructure system with coordinated phasing of development. Development in the Area Plan will occur over a multi-year timeframe, which may evolve in a variety of ways depending upon several factors. These factors include shifts in market demand for various housing types and changes in the development goals and capabilities of property owners within the Plan Area.

Other factors influencing phasing are financial considerations of the property owners and regulatory agency constraints. A series of discrete phases (and sub-phases) are reflected on **Figure 4-1.** The phase boundaries are intended to be conceptual in nature and may be amended, revised or combined as development progresses.

Infrastructure requirements for each phase of development include on-site backbone infrastructure and off-site facilities necessary for each phase to proceed. Each phase of improvements include roadway, sanitary sewer, water, recycled water, storm drainage, dry utilities, and other facilities and improvements. Development is anticipated to occur as depicted on **Figure 4-1**. However, it is recognized that construction of one or more phases may occur concurrently as factors dictate.

Because the necessary infrastructure will be phased along with the supported development, the opportunity exists for any and all parcels within a particular phase to proceed with development in any order, subject to applicable tentative subdivision map conditions of approval and/or site plan review and approval by the City (if required).



Figure 4-1
Phasing Plan

4.2 *Phasing Performance Standards*

This section discusses the phasing performance standards that will provide guidance to the City and property owners for determining the required elements and conditions of phased development within the Area Plan. The following is a general series of standards for phased development to assure adequate provision of public services and adherence to sound planning principles:

- Developers are responsible for the funding, design and construction of all facilities and infrastructure needed to serve the development identified for each phase. It is recognized that facilities are sequential; accordingly, parcels developed out of phase may be required to construct additional infrastructure and facilities outside of the phase boundary as necessary to provide services to the phase in question.

- Upon request by a Developer, the City may approve a deferral of certain segments of infrastructure for a particular phase or parcel, provided that the provision of services and community services is not adversely affected and that financial assurances for the deferred improvements are provided by the Developer.

- Prior to issuance of building permits for individual projects, funding or design and construction of necessary infrastructure are required unless deferral is approved by the City. The required entitlements, site-specific design, on-site improvements, plan processing/approval, and on-site construction may commence concurrently with the installation of backbone infrastructure facilities.

- Developers may propose the installation of interim facilities should the timing to complete certain permanent infrastructure components otherwise result in a delay of project construction. Proposals for interim facilities to serve one or more phases of development within the Plan Area shall be accompanied by studies demonstrating the adequacy of the proposed interim facilities to provide service pending completion of permanent facilities. Interim facilities that are accepted in writing by the governing agency as a permanent facility shall be eligible for reimbursement from public or private financing sources in the same manner as other permanent facilities.

- Developers may enter into reimbursement agreements for the costs associated with up-front backbone infrastructure that serves other parcels within the Area Plan. Reimbursement agreements may also be entered into with respect to improvements (either within or outside the Area Plan) benefiting projects outside the Area Plan.

4.3 *Public Services and Facilities Phasing Plan*

Phasing of the Area Plan must be carefully coordinated to not only ensure a comprehensive and efficient buildout, but to also allow for the financially feasible sequencing related to the construction of public services and facilities. Public services and facilities such as roadway, sanitary sewer, water, recycled water, storm drainage, dry utilities, police, fire and others can be phased to match the pace of development and to respond to the growing needs of the community as they arise.

The Area Plan development is anticipated to occur over a multi-year timeframe currently estimated at a 15 to 25 year time period. Based on market conditions and other prevailing factors, it is estimated that the entire project will require up to three (3) main phases and several sub-phases to complete as identified on **FIGURE 4-1**.

5.0 Financing and Maintenance of Public Improvements and Services

5.1 *Introduction*

The Mountain Gate at Shasta Planned Development (PD) Zone District and the Development Agreement (DA) will be adopted by the City to implement the project. The PD and DA will be executed simultaneously with the adoption of the Area Plan. The PD and DA assure the developers of land uses and provisions specified in the Area Plan in exchange for providing the City with the benefits identified in the PD and DA.

General Plan Policy LU-(11) requires the Area Plan to identify the public services and facilities necessary to serve the ultimate development of the Area Plan. In addition, this Policy requires the identification of financing mechanisms to fund necessary facilities and services. General Plan Policy PF-(8) requires the City to evaluate and adopt an "adequate public facilities and services" ordinance, or other regulatory mechanism, establishing a procedure for reviewing major development applications and requiring a determination that:

- Adequate public facilities and services would be available at the time of project occupancy and performance standards maintained following project occupancy; or

- Funds for required improvements are assured and that improvements would be completed within a stipulated time of project occupancy.

5.2 Fiscal Impact Analysis

A Fiscal Impact Analysis (FIA) was prepared for the project by Development Planning & Financing Group, Inc. (DPFG) in September 2012, to determine the fiscal impacts on the City as a result of development of the proposed project. The FIA considers increased demand for City services versus revenues generated by the project from property taxes, sales and use taxes and other revenue sources.

Information used in preparing the FIA was obtained from the City's annual budget, conversations with City staff, the State Board of Equalization, the California Department of Finance, the Shasta Association of Realtors, the U.S. Census Bureau, the U.S. Bureau of Labor Statistics and Hdl Companies Retail Taxable Sales Estimates (2007). The FIA provides revenue and expenditure projections for the ten-year period during which the project is expected to build out, and revenue and expenditure projections at Year 20.

As noted in the FIA, actual future revenue and expenditure impacts on the City will vary from estimates because events and circumstances can occur in a manner different than described in the FIA. This could include the timeline for buildout of the project, available grant funding for completing infrastructure improvements and the formation of assessment districts to off-set the City's costs for maintaining public improvements and providing public services such as law enforcement.

In addition, the types of commercial uses developed within the Area Plan have an impact on sales tax revenue. For example, automobile sales and large-volume stores are considered the greatest net revenue generators; motels and hotels not only increase tourism-related spending but also generate transient occupancy taxes.

Revenue Generated

The FIA concludes the project is estimated to generate approximately $2.36 million in annual revenue for the City's General Fund at project buildout and $2.88 million annually ten years following buildout. The FIA utilizes taxes, licenses and permits, revenues from other agencies, charges for services, fines and forfeitures, revenue from use of money and property and other revenues generated specifically for the General Fund.

General Fund Impacts

General Fund expenditures are utilized to fund costs associated with City departments, central services, capital projects, animal control, parks, recreation, public safety services, public services, personnel and labor relations and grant administration. The FIA adjusts expenditures related to planning and building as it is considered to be a direct offset to planning and building revenues generated by permit fees.

Per capita expenditure amounts were derived by adjusting actual budgeted figures by deducting all capital expenditures, debt service and other non-recurring expenditures. The assumption is that any new facilities and/or equipment required for the new population will be mitigated by the developer's payment of impact fees at the time of building permit issuance.

As stated in the FIA, the project is expected to incur approximately $2.3 million in operating expenditures for the City General Fund at project buildout and approximately $2.8 million ten years following project buildout.

Conclusion

The FIA concludes the City would be fiscally positive with approximately $72,605 surplus annually at project buildout, and approximately $88,505 gained annually ten years following project buildout based on the assumptions outlined in the FIA.

5.3 Infrastructure Improvements

Facilities will be constructed as they are needed to serve new development within the Area Plan. Development projects will be conditioned during review of subsequent tentative subdivision maps and other discretionary permits to construct facilities needed to serve the development. Developers may receive either fee credits or reimbursements for advancing eligible projects based on City or special district reimbursement policies. Developers participating in a debt financing mechanism may also receive fee credits for facilities funded through debt financing. If the bond capacity is insufficient to fund all the improvements, other funding mechanisms such as private financing will be required.

Several funding sources may be used to fund the infrastructure required to serve the projected development and to mitigate impacts on surrounding developments. Existing or newly created development impact fee programs may be used to fund a portion of the road, sewer, water, electric, law enforcement and park facilities. In addition to impact fees, which may not provide up-front funding in time for many of the facilities, debt financing (assessment district or Mello-Roos financing) may be used to fund facilities toward the beginning of development. School facilities will be funded through school mitigation fees and possibly through other funding sources, including the State School Building Program or local general obligation bonds.

It is expected that costs will change over time; therefore, each funding mechanism should include a method for adjusting the amount of funding to reflect current costs at the time of construction. At any stage, sub-areas may develop, depending on the financing capacity of the area, development plans, and market conditions.

5.4 Financing Public Services and Facilities

This section sets forth a strategy to finance public services and facilities required for new development in the Area Plan. This is accomplished by:

- Coordinating a phasing plan while identifying relevant public services and facilities required to serve the Area Plan;
- Providing an analysis of the estimated costs required to provide public services and facilities; and
- Identifying the sources of funding available to pay for the various types of public services and facilities and implementation of the applicable financing mechanisms.

Implementation of the financing plan will provide assurance that public services and facilities are constructed and available to serve new development in the Area Plan and mitigate its respective impact.

5.5 Financing Responsibilities and Sources by Type

1. Funding Sources

A number of strategic and creative mechanisms may be used to fund public services and facilities required for the Area Plan. The ultimate type of financing mechanisms will be determined based on a technical analysis of costs, financing requirements, duration of funding, reimbursement requirements, absorption rates, and market strategies.

Specific details on financing, long-term maintenance and other related funding requirements will be stipulated in the Development Agreement and/or Reimbursement Agreement with the developer and will be made a condition of approval for subsequent tentative subdivision maps or other discretionary approvals.

A. Developer Funding

Developer funding is the most common method of funding improvements that directly benefit the development. Private developers may construct many of the public facilities that are required to serve the Area Plan, using cash, funds from private investors, lines of credit, conventional lending sources, and other sources of private financing.

This method involves installation of the improvements at the developer's cost prior to filing a final map and/or occupancy of a portion of the development. Typically, this method works for improvements such as streets, sidewalks and utilities that are part of the proposed development, or involve only a short extension to reach existing improvements. If improvements are oversized, or are part of the City's capital improvement program, the City and developer may enter into a reimbursement agreement to reimburse the developer as other projects use the facilities.

Developer Cost Sharing/Reimbursement Agreement

Public facilities that directly benefit other properties within the Area Plan pay their proportionate share of costs upon some equitable factor. In the case where one property would develop first and construct public facilities benefiting additional properties, the provider of shared infrastructure may be entitled to reimbursement of costs.

B. Special Assessment Districts / Community Facilities Districts

Assessments

Special assessment districts may be formed to provide funding for long-term maintenance of landscaping, open space areas, drainage facilities, trails and government services such as law enforcement and fire protection.

Assessments are paid by property owners within the development when their properties benefit from the improvements through increased property values. Assessments include special, benefit and maintenance assessments, and special assessment taxes. Assessments are subject to a weighted election.

Benefit Assessment Act of 1982 (Government Code Section 54703 *et seq.)*

Benefit Assessment Districts allow the City to fund ongoing operation and maintenance of public drainage, flood control and street lighting systems by applying special assessments to the properties receiving the special benefit,

Landscape and Lighting Act of 1972 (Streets and Highways Code, Section 22500 *et seq.)*

Under the Landscape and Lighting Act, the City can fund various improvements such as:

- The installation or planting of landscaping, including street trees;
- The installation or construction of fountains and other ornamental structures and facilities;
- The installation or construction of public lighting facilities, including street lights and traffic signals;
- The installation of park/recreational improvements;
- Installation or construction of curbs, gutters, walls, sidewalks, paving, or water, irrigation, drainage or electrical facilities;
- The maintenance, repair, removal or replacement of any improvement funded by the District;
- Removal of trimmings, rubbish, debris or other solid waste;

Mello Roos - Community Facilities Act (Government Code Section 53311 *et seq.)*

The Mello Roos Community Facilities District (CFD) Act of 1982, allows a City to fund certain public services and facilities through the sale of CFD bonds. More than one CFD may be established to fund the proposed public improvements and services. Eligible public facilities and infrastructure include, but are not limited to:

- Local park, recreation, and open-space facilities;
- Parkway facilities;
- Elementary and secondary school sites and structures that meet the building area and cost standards of the State Allocation Board;
- Fire stations;
- Highway interchanges;
- Water and sewer systems;
- Libraries;
- Child care facilities;
- The undergrounding of utilities;
- Any governmental facilities which the legislative body creating the CFD is authorized by law to contribute revenue to, own, construct, or operate;

A CFD may also fund the following services, provided that the services are in addition to those services already provided in the territory and do not replace existing services:

- Police protection (including the provision of jails and detention facilities);
- Fire protection and suppression;
- Ambulance and paramedics;
- Flood protection;
- Recreational programs and library services;
- Additional funds for the operation and maintenance of parks, parkways, open space, museums, and cultural facilities (this final service cannot be approved through a landowner election).

C. Federal, State, County, or Local Funding

Federal, state, county, or local funding may be utilized to fund capital facilities through various funding sources such as voter approved measures. Other funding sources from federal, state and local agencies may become available in the form of grants or loans.

For certain capital facilities, the state or federal government may be able to provide low-cost loans. The most common loan programs are the U.S. Environmental Protection Agency's Clean Water Act (CWA) State Revolving Fund and Safe Drinking Water Act (SDWA) State Revolving Fund. The CWA provides funding for projects that address non-point source water pollution, certain watershed protection projects, and for municipal wastewater systems. The SDWA fund covers upgrades to public water systems to comply with safe drinking water standards.

D. Development Impact Fees

Development impact fees may be used to finance regional and citywide improvements. These fees are used to pay for costs of public facilities and infrastructure that the development will cause. Fees are charged to fund transportation-related improvements (i.e. streets, traffic signals, bridges, bike lanes, and sidewalks), storm drainage and flood control facilities, water and sewer facilities, and public buildings including libraries, police and fire facilities. If public facilities and infrastructure fall within an agency's development impact fee program, the developer may be eligible for credit and or reimbursement against such fee obligation.

The City currently has in place impact fee programs to fund a portion of its road, sewer, water, electric, and park facilities. Impact fees are paid at the time of issuance of a building permit.

E. Quimby Act and Parks Reimbursement

Cities and Counties have been authorized since the passage of 1975 Quimby Act to adopt ordinances requiring developers set aside land, donate conservation easements, or pay fees for park land and improvements. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities. The act ensures open space acreage in jurisdictions adopting Quimby Act standards of 3-5 acres per 1,000 residents.

F. School Facility Financing

School revenue for public facilities comes from three sources: state school construction programs, school mitigation fees paid at building permit issuance, and any general obligation or Mello-Roos bond. In 1986, the State Legislature approved AB 2926 which authorized school districts to levy development fees and at the same time placed a cap on the total amount of fees that could be levied. Additionally, the School Facilities Act provides a means for overcrowded school districts to receive fees for interim school facilities necessitated by new residential development. In Shasta County, fees are paid by the developer directly to the Shasta County Office of Education. This law enables a school district board that receives fees to use those funds for any "construction or reconstruction."

On November 4, 2008, voters within the Gateway Unified School District approved a $19 million general obligation bond (Measure G) to provide funding for renovation and construction of school facilities. The bond will be repaid by an ad valorem tax on all property owners within the boundaries of the Gateway Unified School District.

G. Operation and Maintenance of Public Services and Facilities

The Area Plan may participate in and/or create special districts to fund the ongoing operation and maintenance of public services and facilities within the Area Plan and/or citywide services and facilities. The City can provide funding from local funds (i.e. property tax and sales tax revenue) generated by development of the Project to assist in maintaining an affordable level of public services based on the Project fiscal impact analysis.

The City currently requires the formation of or participation in an assessment district/CFD to fund maintenance of landscaping, trails, drainage systems and street lighting along all Area

Plan streets. Additionally, the City will require the Area Plan to participate in the formation of an assessment district/CFD to fund the cost of fire suppression, rescue, emergency medical and law enforcement services. The specific funding needs for each phase of development will be identified prior to approval of subsequent tentative subdivision maps or other discretionary permits.

H. Funding Sources Table

Table **5-1** identifies some of the funding sources that are available and/or are appropriate for the various types of public services and facilities required for Area Plan. Additional funding sources may be identified in the future.

Table 5-1
Public Services and Facilities – Potential Funding Sources

Improvements / Services	Developer Funding	City Impact Fees	Mello Roos (CFD)	Landscape and Lighting Act of 1972	Benefit Assessment District of 1982	Federal, State, Local (Loans, Grants)	Quimby Act, Land Dedication	School Facility Financing
Law Enforcement / Fire Protection Services			X			X		
Parks, Open Space, Trails	X	X	X	X		X	X	
Schools			X			X		X
Transportation / Streets	X	X	X	X	X	X		
Water System	X	X	X			X		
Wastewater System	X	X	X			X		
Storm Drain Facilities	X	X	X		X	X		
Dry Utilities	X	X	X			X		
Maintenance (landscaping, trails, parks, open space, drainage facilities)	X	X	X	X	X	X		

6.0 Implementation

6.1 *Purpose*

To give effect to General Plan Policy LU- (11), this Area Plan includes a program of implementation measures, including regulations and financing measures, as necessary to carry out the proposed land uses, infrastructure, development standards and other criteria outlined in the Area Plan. This section outlines the methods by which the Area Plan will be implemented and includes discussion on administration, subsequent entitlements, phasing and financing.

6.2 *Area Plan Administration*

The regulatory elements of this Area Plan are approved by resolution that are consistent with the General Plan and Zoning Ordinance (as amended) and are subject to the enforcement requirements found in the Zoning Ordinance. The City Zoning Ordinance specifies the City's enforcement procedures.

The Development Services Director (Director) is responsible for the administration, implementation and enforcement of this Area Plan. This Area Plan delegates various implementing decisions for consideration to the Director.

6.3 *Entitlements and Approvals*

The following actions are anticipated concurrent with or subsequent to the adoption of this Area Plan.

- **Final Environmental Impact Report (FEIR):** The City Council will certify the Final EIR (SCH #2012-042010) addressing the environmental impacts and mitigation measures applicable to development within the Area Plan.

- **General Plan Amendment:** Designation of the entire project site to Mixed Use and a Plan Line Amendment to change the location of the southerly General Plan road extension to Cascade Boulevard.

- **Rezone:** Adoption of the Mountain Gate at Shasta Lake Planned Development Zone District, implementing the Area Plan.

- **Design Guidelines:** Adoption of Site and Architectural Design Guidelines for the Area Plan.

- **Area Plan:** Adoption of the Area Plan establishing land use designations and a circulation pattern for the project site.

- **Development Agreement:** The Applicant will enter into a Development Agreement with the City. The Agreement will set forth the property owner's obligations related to the construction and financing of infrastructure and public services, including financial contributions for infrastructure maintenance. The Development Agreement will vest the property with the right to proceed with development subject to the limitations and obligations of the Development Agreement and the Area Plan.

- **Large Lot Tentative Subdivision Map:** The first tentative subdivision map will subdivide the 590-acre property into twenty-one (21) parcels in support of the Area Plan.

- **Tentative Subdivision Map:** Future subdivision of parcels in support of the Area Plan.
- **Improvement Plans and Grading Permits:** Engineered plans for all infrastructure improvements and grading will be required.
- **Conditional Administrative Permits and Use Permit / Building Permits:** Administrative permits and Use Permits will be required for certain uses within the Area Plan. Building permits will be required for all construction pursuant to the California Building Codes.
- **Road Maintenance Agreement:** A portion of the extension of Wonderland Road to the Mountain Gate Interchange with I-5 will be in the jurisdiction of Shasta County. The City may need to enter into an agreement to maintain the portion of the roadway within Shasta County.
- **Agency Permits**
    - Regional Water Quality Control Board, Waste Discharge Permit, National Pollutant Discharge Elimination System Permit, Storm Water Pollution Prevention Program and Water Quality Certification or Waiver, under Sections 401 and 402 of the Clean Water Act.
    - U.S. Army Corps of Engineers – Section 404 of the Clean Water Act.
    - California Department of Fish and Wildlife – Streambed Alteration Agreement.
    - Shasta County Air Quality Management District – Dust Control Plan and Equipment Emissions Reduction program for construction activities.
    - Shasta County – Encroachment Permit.
    - California Department of Transportation (CALTRANS) Encroachment Permit.

6.4 *Development Standards within the Area Plan*

The Area Plan and Planned Development Ordinance will serve as the use regulation and zoning for the Area Plan. These standards shall govern development, improvements, and construction within the Area Plan and supersede conflicting standards in the Zoning and Subdivision Ordinances.

6.5 *Subsequent Entitlements*

Development within the Area Plan will be subject to approval of subsequent entitlements by the City. Examples of such entitlements include tentative subdivision maps, Area Plan amendments, conditional use permits, tree permits, design/ site review applications, and building and grading permits.

Individual project applications will be reviewed to determine consistency with the Area Plan and other regulatory documents and guidelines. Application and processing requirements shall be in accordance with the City Zoning Code and other regulations, unless otherwise modified by this Area Plan or Development Agreement. All subsequent development projects, public improvements, and other activities shall be consistent with this Area Plan, Development Agreement, and all applicable City policies, requirements, and standards. If the applicant or Director determines that an amendment to the Area Plan is warranted, an amendment to the Area Plan may be requested.

6.6 *Future Environmental Review*

All applications for a development entitlement that are submitted after approval of the Area Plan shall be reviewed for conformity with the Area Plan and for compliance with the California Environmental Quality Act (CEQA), *Public Resources Code* Section 21000 *et seq*. An environmental impact report (EIR) will be certified concurrent with the approval of the Area Plan and shall serve as the base environmental document for subsequent entitlement approvals within the Area Plan. The Director will determine the appropriate level of environmental review for subsequent projects.

The rules governing the extent of any future environmental review are set forth in Sections 15183 and 15183.5 of the State CEQA Guidelines. Under this section of the State CEQA Guidelines, projects that are consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.

The City will consider environmental effects that were not analyzed as significant effects in the certified FEIR for the project, or if there are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the project. In addition, the City will consider whether there are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

6.7 *Interpretations*

Although every effort has been made to include provisions in this Area Plan that are clear, the necessity of interpreting such provisions in light of specific and unusual cases will occur from time to time. Interpretations are judgments that apply the vision, goals, and intent of the Area Plan to specific issues and situations related to the land use decisions and development. Interpretations are generally limited to details where the requirements and guidelines of this Area Plan may appear to provide alternative guidance and differ from each other or from other adopted City policies, or requirements of other agencies.

Interpretations may be needed when the City is considering discretionary development applications (such as tentative subdivision maps or use permits), or a ministerial application (such as a building permit). The Director shall have the administrative authority for interpretation related to the implementation and enforcement of the Area Plan. In making interpretations, the Director will consult with any other affected City department or other agencies as needed. The Director may submit his/her interpretations for review by the Planning Commission; review decisions of the Planning Commission shall be subject to appeal to the City Council.

In the event of any ambiguities or silence contained in this Area Plan or Development Standards that cannot be resolved through the provisions of these documents, other sections of the City General Plan and Zoning Ordinance shall guide interpretation.

6.8 *Amendments and Modifications*

It is recognized that dynamic market conditions and changes in circumstances may warrant changes to the Area Plan in appropriate situations, including changes to the Area Plan elements, including differences in land use development types assigned to specific parcels; changes to

capacity requirements; changes to the intensity or density of land uses on specific parcels (including public facilities); density transfers; or changes in policies. For the purposes of implementation, changes to the Area Plan shall be categorized as either a Major Amendment or an Administrative Modification. Proposed changes to the Area Plan, whether in the form of a request for Major Amendment or Administrative Modification, shall be submitted to the City in an application form and shall include a justification statement explaining in detail why the proposed change is warranted. Exhibits or other materials deemed necessary by the Director for evaluation of the proposed change to the Area Plan shall be submitted with the application or upon request to the applicant.

6.9 *Major Amendments*

A Major Amendment is any change proposed to the Area Plan that could significantly increase environmental impacts or other changes determined to be significant by the Director. A Major Amendment is the appropriate procedure where changes to the Area Plan are proposed that meet one or more of the following criteria:

- A new category of land use not specifically discussed in the Area Plan is introduced.
- Significant changes to the distribution of land uses beyond those allowed under the Area Plan are introduced.

Major Amendments require approval by the Planning Commission and/or the City Council.

6.10 *Administrative Modifications*

The Director may determine through the interpretation process that a particular request for approval is in substantial conformity with the provisions and intent of the Area Plan. "Substantial conformity" may include requests for a 10% or less adjustment to quantifiable or measurable standards contained in the Area Plan or Development Standards and requests that are not readily quantifiable or measurable, which the Director in his/her discretion determines are minor in nature. All other requests for variations shall be submitted to the Planning Commission for review and consideration.

Administrative Modifications are appropriate for requests that conform to one or more of the following criteria or circumstances:

- The Director determines that the proposed adjustments are off-set by the merits of the proposed design and do not significantly change the anticipated physical characteristics, goals, and intent of the Area Plan.
- Granting of the Administrative Modification will result in design improvements, where there are space or other restrictions on the site which preclude literal compliance with the Development Standards without hardship.
- Granting of the Administrative Modification, with any conditions imposed, will not be materially detrimental to the public welfare or injurious to the property or improvements.
- Proposed changes to land use diagram shapes or to the alignment of streets maintain the general land use pattern and/or provide an improved circulation system consistent with the intent and direction of the vision, goals, and policies of the Area Plan.

- The proposed change is not expected to significantly increase environmental impacts beyond the levels identified in the Final EIR.

- The Director determines that a new land use not specifically addressed in the Area Plan is similar in nature to a land use specifically allowed.

An Administrative Modification may be reviewed and acted upon by the Director. In granting an Administrative Modification, the Director may impose conditions to safeguard public health and safety, and to ensure that development so authorized is consistent with the objectives and intent of the Area Plan. No Planning Commission or City Council review is required, unless the Administrative Modification is appealed.

Appendix 3.0-2

PLANNED DEVELOPMENT ZONE DISTRICT

DRAFT

CHAPTER 17.63

MOUNTAIN GATE AT SHASTA PLANNED DEVELOPMENT (PD 2013-01)

Sections:

17.63.010 Purpose
17.63.020 Objectives
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17.63.040 Allowable Density
17.63.050 Density Transfer
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17.63.010 Purpose

The purpose of the Mountain Gate at Shasta Area Planned Development Zone District is to guide and regulate the land use and development of the Mountain Gate at Shasta Area Plan (Area Plan).

17.63.020 Objectives

The Area Plan has been designed to ensure the project will have positive benefits for the community. Objectives of the Area Plan include:

A. Provide a comprehensively planned project that is sensitive to environmental issues including wetlands, flood protection, the City's hillside grading concerns, and tree preservation.

B. Protect the highest quality natural features and resources of the site.

C. Conform to General Plan policies that designate the project site for urban development through implementation of an Area Plan.

D. Promote compact mixed-use development that strives to provide a balance of uses, diverse housing and transportation choices, and contributes to a jobs-to-housing balance within the region.

E. Provide a balanced mix of land uses that will allow a self-sufficient community, thereby reducing demands on regional roadways and services.

F. Provide for a full range of housing densities and product choices affordable to a broad spectrum of income levels.

G. Provide a master-planned community on a suitable site of sufficient size in proximity to an existing freeway, with access from existing interchange facilities.

H. Establish a circulation system that meets local and regional transportation needs and accommodates a variety of transportation modes, including off-street trail systems and on-street bicycle lanes.

I. Establish a pedestrian-friendly community that provides a continuous system of trails to link neighborhoods together and provide safe routes to parks and community-serving areas.

J. Provide required park facilities sized to meet the needs of residents in the Area Plan and located as neighborhood focal elements.

K. Provide a comprehensively planned infrastructure system (e.g., water treatment and distribution systems, sewer treatment and collection systems, electrical distribution systems, fire suppression facilities, general government facilities) to serve the needs of future residents of the development area.

L. Provide adequate infrastructure improvements without adversely affecting existing levels of service.

M. Phase development and infrastructure to respond to market demand while requiring new development to provide the infrastructure and public facilities necessary to serve the developing area.

N. Establish financial mechanisms to ensure that the full range of services needed to serve the Area Plan are funded by the community and not by existing city residents.

O. Provide revenue for the maintenance of public open space areas and park facilities, infrastructure, and public services within the development area.

17.63.030 Applicability of Regulations

The regulations of this Chapter shall apply exclusively to the property defined within this Planned Development District known as the Mountain Gate at Shasta Area Plan as shown on Exhibit A. The Planned Development Zone District shall be combined with the regulations of Title 17 (Zoning) of the City of Shasta Lake Municipal Code (SLMC).

17.63.040 Allowable Density and Density Transfer

A. **Table 17.63.040.a** summarizes sub-areas of the Area Plan. The Unit Range column represents the maximum number of units possible in each land use designation. It is anticipated that some development may be clustered and designed to ensure density that might be reduced due to topography or to avoid sensitive biological habitat. Section 17.63.050 of this Chapter provides regulations regarding density transfers.

Table 17.63.040.a
MOUNTAIN GATE AT SHASTA AREA PLAN LAND USE
Area Plan Density

Area[1]	Primary Land Use[2]	Acres[3]	Max. Building Coverage or FAR[4]	Potential Sq.Ft.[5]	Density Range	Unit Range	Probable Maximum Units[1]
A	Commercial	11.2	0.25	121,968	-	-	0
B	Open Space	181.5	0.1	-	-	-	0
C	Park	7.3	0.1	-	-	-	0
D	Medium Density Residential	27.9	0.7	-	4 - 7	112 - 195	176
E	Medium Density Residential	22.5	0.7	-	4 - 7	90 - 158	142
F	Very Low Density Residential	16.3	0.5	-	1 - 2	16 - 33	30
G	Medium Density Residential	43.5	0.7	-	4 - 10	174 - 435	392
H	Mixed Use Commercial	14.9	0.1	73,616	-	-	0
	High Density Mixed Use		0.7	-	11 - 20	131 - 238	215
	Fire Station	2	0.7	-	-	-	0
I	Medium Density Residential	7.3	0.7	-	4 - 7	29 - 51	46
J	Medium Density Residential	8.1	0.7	-	4 - 7	32 - 57	51
K	Park	7.6	0.1	-	-	-	0
L	Low Density Residential	17.1	0.5	-	2 - 4	34 - 68	61
M	Community Park	13	1.5		2 - 4	39 - 78	0
	Low Density Residential	19.4	0.5				70
N	Low Density Residential	11.3	0.5	-	2 - 4	23 - 45	41
O	Low Density Residential	13.1	0.5	-	2 - 4	26 - 52	47
P	Low Density Residential	32.9	0.5	-	2 - 4	66 - 132	119
Q	Very Low Density Residential	10.4	0.5		1 - 2	10 - 21	19
	Electric Substation	2	0.7				0
R	High Density Residential	4.5	0.7	-	11 - 30	50 - 135	122
S	Very Low Density Residential	40.5	0.5	-	1 - 2	41 - 81	73
T	Open Space	5.9	0.1	-	-	—	0
U	Open Space	33.6	0.1	-	-	—	0
R.O.W.	Rights-Of-Way	36.2	-		-	—	0
Totals		**590.0**	—	**195,584**	—	**873 – 1,779**	**1,604**

[1]See Exhibit A for location of land use areas.

[2]Several identified public uses (i.e., parks, fire station, electric substation) are likely to occur as indicated; however, it is possible that public uses will be located in other development areas, other land in the City, or removed from the Area Plan. In this instance, the development potential of the property formerly intended for the public use shall be equal to that of the lowest density in the same development area provided the overall number of units does not exceed 1,604 as shown in the table.

[3]All acreages are estimates.

[4]Floor area ratio for non-residential uses only, Maximum building coverage for residential uses.

[5]Maximum potential square footage of all structures within the land use designation.

[6]Topography and site constraints would limit the overall density. Approximately 1,604 units is considered the development limit of the site in this Draft EIR

17.63.050 Density Transfer

Density ranges for each sub-area are identified in Table 17.63.040a. An estimated unit yield and probable maximum units for each area has also been identified and is based on factors such as site location, topography, sensitive biological habitat, and anticipated market demand for a variety of housing products. As these areas develop, a more detailed assessment of the Plan may result in the need to adjust (reduce or increase) the number of units assigned to a particular area within the Area Plan.

It is the intent of the Area Plan to permit flexibility in adjusting the number of residential units assigned to each sub-area. To further this intent, units assigned to specific land use classifications or parcels may be transferred within the Area Plan boundaries, provided that all the following criteria are met:

1. The transferring and receiving parcels are within the Area Plan boundaries and the total maximum number of approved units is not increased (unless an increase is separately approved by the Planning Commission and City Council).

2. The cumulative increase or decrease in units resulting from the minor density adjustment does not change the number of pre-transfer units allocated to any one of the parcels receiving or transferring the units by more than 20 percent (20%), based on the density ranges shown in Table 17.63.040.a.

3. The adjustments in density do not have a significant adverse effect on planned infrastructure, roadways, schools, other public facilities or sensitive biological habitat.

To request a minor density adjustment, the owners of both the transferring and receiving parcels shall submit to the Development Services Director or his/her designee (Director) an application on a form prescribed by the Director and all information needed to determine compliance with the above unit-transfer criteria. This submittal shall include information identifying the impacted parcels and designating the number of units being transferred, site plans and maps, and any other necessary documentation requested by the Director.

Upon approval of any density transfer, the Director shall prepare an updated Area Plan density table reflecting the adjusted unit counts and densities for all sub-areas of the Area Plan. The revised table will allow the Director to track total residential units within the Area Plan.

17.63.060 Permitted and Conditionally Permitted Uses

A. Table 17.63.050.a identifies uses permitted outright; uses permitted pursuant to issuance of a Use Permit or Administrative Permit; and uses permitted after review and approval of a Zoning/Site Development Permit pursuant to Section 17.63.090 of this Chapter.

B. Housing types may vary in each of the residential sub-areas as project design incorporates the project site topography and site amenities. Housing types for each of the sub-areas will be determined at the time of submittal of subsequent tentative subdivision maps.

Table 17.63.060.a
Mountain Gate at Shasta

PLANNED DEVELOPMENT ZONE DISTRICT
PERMITTED AND CONDITIONALLY PERMITTED USES

P: Uses Permitted Outright

AD: Uses Permitted after review and approval of an Administrative Permit by the Development Services Director or his/her designee

UP: Uses permitted after review and approval of a Use Permit by the Planning Commission

Z: Uses permitted after review and approval of a Zoning/Site Development Permit by the Development Services Director or his/her designee

- Use Not Permitted

Accessory dwelling units (second units) are allowed pursuant to SLMC Chapter 17.81, Affordable Housing

Land Use	**Area A**	**Areas F, Q, S**	**Areas L, N, O, P,**	**Area M**	**Areas D, E, G, I, J**	**Area R**	**Area H**
	Commercial	*Very-Low Density*	*Low Density*	*Low Density, Community Park*	*Medium Density*	*High Density*	*Mixed Use*
RESIDENTIAL							
Single-Family	-	P	P	P	P	-	-
Two-Family	-	-	-	-	-	AD	Z
Multiple-Family (apartments)	-	-	-	-	-	AD	AD
Condominiums	-	-	-	-	-	AD	AD
Live-Work Units	-	-	-	-	-	-	Z
Non-dwelling accessory structures appurtenant to the permitted use	P	P	P	P	P	P	P

Land Use	**Area A**	**Areas F, Q, S**	**Areas L, N, O, P,**	**Area M**	**Areas D, E, G, I, J**	**Area R**	**Area H**
	Commercial	*Very-Low Density*	*Low Density*	*Low Density, Community Park*	*Medium Density*	*High Density*	*Mixed Use*
Small Family Daycare Home (six or fewer)	-	P	P	P	P	P	P
Large Family Daycare Home (seven or more)	-	AD	AD	AD	AD	AD	AD
Bed and Breakfast Guest Facility	-	AD	AD	AD	AD	-	AD
Home occupation business per SLMC 17.88.220	-	Z	Z	Z	Z	Z	Z
COMMERCIAL							
Automobile/Vehicle Service and Repair: Gasoline, diesel, propane, butane, fuel oil dealers/stations; Gasoline station convenience mini-marts; Oil, tune-up, brake and muffler shops; Tire sales and installation; Self-serve and non-self-serve auto wash; Small engine repair (excludes body and fender work, vehicle painting, towing, vehicle dismantling, or repair of heavy trucks or construction vehicles).	UP	-	-	-	-	-	-

Land Use	**Area A**	**Areas F, Q, S**	**Areas L, N, O, P,**	**Area M**	**Areas D, E, G, I, J**	**Area R**	**Area H**
	Commercial	*Very-Low Density*	*Low Density*	*Low Density, Community Park*	*Medium Density*	*High Density*	*Mixed Use*
Automobile sales and leasing: automobiles, trucks, motorcycles, lawn and garden-type tractors.	AD	-	-	-	-	-	-
Bars, nightclubs, wine tasting, brewery.	UP	-	-	-	-	-	-
Eating and Drinking Establishment (no drive-thru).	P	-	-	-	-	-	AD
Eating and Drinking Establishment (with drive-thru).	Z	-	-	-	-	-	-
Hotel / Motel	UP	-	-	-	-	-	-
Instructional services or facilities: Health/fitness club, dance or music studio, driving school, photography, arts and crafts.	Z	-	-	-	-	-	Z
Offices: Administrative, executive, insurance, legal, medical, professional, real estate, travel agency, etc.	P	-	-	-	-	-	P
Personal Service uses: Barber, beauty salon, day spa, tattoo parlor, locksmith, shoe repair, computer repair, print shop, Laundromat.	P	-	-	-	-	-	P

Land Use	**Area A**	**Areas F, Q, S**	**Areas L, N, O, P,**	**Area M**	**Areas D, E, G, I, J**	**Area R**	**Area H**
	Commercial	*Very-Low Density*	*Low Density*	*Low Density, Community Park*	*Medium Density*	*High Density*	*Mixed Use*
Recreation/Entertainment: Movie theater, miniature golf, bowling alley, ice/roller skating rink, tennis/racquetball courts, pinball arcades/electronic games centers, pool/card rooms.	AD	-	-	-	-	-	UP
Small Retail Sales (under 15,000 square feet for single tenant): Grocery/food/beverage market, florist, bookstore, drug store, pet store, hardware store, furniture, appliances, electronics, variety store.	Z	-	-	-	-	-	Z
Large Retail Sales (over 15,000 square feet): Grocery store, home improvement center, discount or wholesale retail sales.	AD	-	-	-	-	-	UP
Temporary Uses: Farmer's Markets; produce sales; carnivals; Christmas tree or pumpkin sales.	Z	-	-	Z	-	-	Z
Veterinarian / Animal Hospital (no outdoor kennels).	Z	-	-	-	-	-	UP

PUBLIC AND SEMI-PUBLIC FACILITIES							
Public Government Offices	P	-	-	-	-	-	P
Fire Station *	AD	-	-	*	*	-	AD
Law Enforcement Substation (no jail)	UP	-	-	-	-	-	UP
Public utility substations, structures, facilities, water tanks, etc.	Z	Z	Z	Z	Z	Z	Z
Park and Recreation Facilities: Public park, playground, sports fields, gymnasiums, swimming pools, picnic facilities, including related food concessions. *	AD	-	-	P	-	Z	AD
College and Trade School, public or private	P	-	-	-	-	-	P
Schools, K-12, public or private *	AD	-	-	AD	AD	-	AD
Nursery School, Pre-School (licensed or certified by the state).	P	-	-	-	-	AD	P
Day Care Center (licensed or certified by the state for 14 or more) for children or adults.	P	-	-	-	-	-	P
Clubs and Lodges.	AD	AD	AD	AD	AD	AD	AD
Conference Center, Meeting Hall.	AD	AD	AD	AD	AD	AD	AD
Community Center, Youth Center, Senior Center.	AD	AD	AD	AD	AD	AD	AD

Religious Facilities (church, temple, synagogue, shrine, mosque, etc.) used exclusively for religious worship and incidental accessory uses.	AD	AD	AD	AD	AD	AD	AD
Cultural Institution: Library, museum, art gallery, performance art center, amphitheater.	P	-	-	AD	-	-	P
Amphitheater / Performance Center – Outdoor.	P	-	-	P	-	-	AD
Commuter Parking Lot	P	-	-	-	-	-	P
Electric Charging Station	P	-	-	P	P	P	P

* Several identified public uses (i.e., parks, fire station, electric substation) are likely to occur as indicated in Table 3.0-1; however, it is possible that public uses will be located in other development areas as reviewed and approved by the Development Services Director or his/her designee if found to be consistent with the intent of the Area Plan.

Other approved uses shall be pursuant to Section 17.63.060 of this Chapter.

17.63.070 Other Permitted Uses.

A. Table **17.63.050.a** identifies representative land uses for each sub-area of the Area Plan. During implementation of the Area Plan, other land uses may be proposed that are not specifically listed, but are consistent with the intent of the Area Plan and this Chapter.

The Director may make a determination that a requested use is similar to those uses listed as permitted uses or uses subject to issuance of a Use Permit, Administrative Permit, or Zoning/Site Development Permit if the following findings are made:

1. The proposed unlisted use is similar in character and impact to a listed use; and

2. The proposed use will be treated in the same manner as the listed use including determining where it is allowed, what permits are required, and what standards affect its establishment.

B. Accessory dwelling units (second units) are allowed pursuant to SLMC Chapter 17.81, Affordable Housing.

17.63.080 Live-Work Units

A. A Live-Work unit means a structure or portion of a structure:

1. That combines a commercial activity allowed in the zone with a residential living space for the owner of the business and that person's household, or the owner's employee; and

2. Where the resident owner or employee of the business is responsible for the commercial activity performed; and

3. Where the Live-Work unit complies with all applicable state and local Building and Fire-Life Safety codes.

B. Allowable Commercial uses in Live-Work Units:

1. Art and craft work such as ceramics, painting, photography, sculpture, and similar cottage industries;

2. Office uses by architects, attorneys, consultants, writers, owners of e-commerce businesses;

3. One-on-one services and lessons such as music, art, dance, tutoring, licensed counseling;

4. Tailoring and sewing;

5. Limited, brief, pet care services such as grooming;

6. Hair Stylists;

7. Catering preparation for off-site events;

8. Cottage food businesses;

9. Other occupations determined by the Director to be similar and compatible in nature to the uses listed above.

C. Prohibited Commercial Uses in Live-Work Units.

1. Adult entertainment activities/businesses;

2. The retail sale of food and/or beverages with customers arriving on-site.

3. Entertainment, drinking, and public eating establishments;

4. Animal hospitals and clinics;

5. The boarding or breeding of animals;

6. Sales, repair or maintenance of vehicles, including automobiles, boats, motorcycles, aircraft, trucks, or recreational vehicles;

7. Commercial cabinet or furniture making;

8. Mobile food vendors;

9. Gun and weapons sales;

10. Uses which involve medical procedures;

11. Uses that require explosives or highly combustible materials;

12. Welding, machine shop operations, or metal fabricating (except for artisan metal sculpture); and

13. Other uses that the Director determines to be similar in character to those listed above.

D. A valid City Business License and Zoning/Site Development Permit for the commercial use shall be maintained at all times.

E. Only one business per Live-Work unit is allowed.

F. No more than two employees (excluding residents of the dwelling unit) may be employed, unless otherwise provided pursuant to issuance of a use permit by the Planning Commission.

G. Residential areas are permitted above or below the commercial component, or in a portion of a single-story structure, provided there is internal access between the residential and commercial space.

H. At least ten percent but no more than 35 percent of the total floor area of the Live-Work unit shall be working space.

I. The commercial component shall be restricted to the unit and shall not be conducted in the yard, garage or any accessory structure.

J. No portion of a Live-Work unit may be separately rented or sold as a commercial space for a person or persons not living on the premises, or as a residential space for a person or persons not working on the premises.

K. Access to the commercial component shall be oriented to the street and shall have at least one access separate from the living space.

L. Signage intended to promote on-site commercial uses shall be restricted to two 1½ square-foot signs permanently affixed to the door or wall of the business component.

M. Customer vehicle trips and business-related deliveries shall be limited to 7:00 AM to 8:00 PM, Monday through Sunday.

N. Customer vehicle trips are limited to no more than eight per day, and no more than two customers shall be on-site at any given time. Business-related deliveries are limited to no more than one per day. The commercial use shall not generate vehicular traffic that will interfere with residential traffic circulation.

O. The Live-Work unit shall be required to provide two-car covered parking in an attached or detached garage, plus two additional off-street parking spaces.

P. No outdoor storage of materials or equipment related to the business shall be permitted.

Q. No outdoor activity related to the business shall be permitted.

R. The commercial component shall not detract from, or otherwise be a nuisance to, the residential character or appearance of the dwelling unit or neighborhood and shall not generate external noise, odor, glare, vibration or electrical interference detectable to the normal sensory perception by adjacent neighbors;

S. No explosive, toxic, combustible or flammable materials in excess of what would be allowed incidental to normal residential uses shall be stored or used on the premises.

T. After approval, a Live-Work unit shall not be converted to either entirely residential use or entirely business use unless authorized by the Director.

17.63.090 Development Permit Procedures

A. **Use Permits:** The process for reviewing and approving Use Permits shall be the procedure outlined in SLMC Section 17.92.020.

B. **Administrative Permits:** The process for reviewing and approving Administrative Permits shall be the process outlined in SLMC Section 17.92.050.

C. **Zoning/Site Development Permits:** The process for reviewing and approving Zoning/Site Development Permits shall be as follows:

1. An application for an Zoning/Site Development permit shall be made in writing on a form prescribed by the Director, and shall be accompanied by the following:

2. A clear and concise description of the use and accompanying activities;

3. Site plans, maps or other documents showing the details of the proposed use, building or facilities, including how the applicable design standards of this Chapter will be satisfied; and

4. Information demonstrating compliance with the criteria applicable to the proposed use.

5. No application shall be accepted as complete unless and until all fees, the application form and related information are filed with and accepted by the Director. Failure of any applicant to respond, within thirty (30) days of mailing, to any notice that the application is incomplete or to any request to clarify, amplify, correct or otherwise supplement the application shall be deemed an abandonment of the Zoning/Site Development permit application and no further action shall be taken upon it.

6. The Director shall consider approval of the application after the application is deemed complete.

7. If the Director determines that the proposed use meets all criteria applicable to the proposed use, the Director will approve or conditionally approve the proposal.

8. If the Director determines that the proposed use does not meet all criteria applicable to the proposed use, the director shall deny the application.

9. The Director may refer any Zoning/Site Development permit proposal to the Planning Commission for a decision when it is determined that the nature of the project, or the existence of a policy question, requires such referral. If a decision to approve or deny the permit application requires the exercise of substantial discretion, then the application shall be referred to the Planning Commission for a decision following a noticed public hearing.

   Notice of the time and place of the public hearing shall be given by publication as required by Government Code Section 65090, and by mail as required by Government Code Section 65091.

10. The granting of any Zoning/Site Development permit may be conditioned upon the dedication of land or the posting of a bond to guarantee the installation of public improvements, provided the dedication or public improvements are reasonably related to the use for which the Zoning/Site Development permit is granted.

11. Any Zoning/Site Development permit granted under this section may be limited to a term set when the permit is granted. The establishment, maintenance or

operation of any use under this section shall cease at the end of the term established by the permit, if any. The term limit on the permit may be extended by the Director upon written request by the applicant prior to expiration of the term based on conditions appropriate at the time of such time extension.

12. Every Zoning/Site Development permit issued under this section is revocable. Whenever the Director determines that one or more grounds exist for revocation, the applicant shall be notified in writing by the Director of the date of revocation.

13. Every Zoning/Site Development permit expires and is automatically null and void without further action by the City if the activity or use for which the Zoning/Site Development permit was granted has not been actively and substantially commenced within one year of the date of its approval.

14. The Director may extend the time for commencement of the use or activity during the one year following approval of the Zoning/Site Development permit, if an application for an extension of time is made prior to expiration of the Zoning/Site Development permit. An extension of time shall be approved if the applicant shows reasonable cause for the extension. Reasonable cause exists if the applicant shows that circumstances beyond his/her control have prevented him/her from taking sufficient action.

17.63.100 Site and Building Development Plans

A. All applicants shall submit a conceptual development plan of the project showing the location of buildings, building elevations, streets, walkways, parking and landscaping, the proposed uses of the buildings and grounds, staging of the development and other information which the Director may require in order for the City to properly evaluate the application.

B. Prior to issuance of a building permit, detailed development plans, drawn to scale, shall be submitted to the Director for plan check and approval to ensure conformity with the approved conceptual development plans and with the intent of the Area Plan.

17.63.110 Site and Building Development Standards.

Site and building development standards are as shown in Table **17.63.110.a**. Specific requirements shall be identified during preparation and review of conceptual development plans for each subsequent development project and may vary from the standards identified in the Table based on topography, surrounding uses, sensitive biological habitat, density transfers and other development constraints. Minor modifications may be approved by the Director pursuant to Section 17.63.170 of this Chapter.

TABLE 17.63.110.a
Mountain Gate at Shasta
Minimum Site and Building Development Standards

					Building Setbacks (feet)						
Land Use	**Housing Type**	**Lot Size (Square Feet)**	**Width**	**Depth**	**Front**	**Front Garage**	**Side**	**Exterior Side**	**Rear**	**Rear w/alley access**	**Height**
Residential	Large Lot	8,000	80	100	15	20	5-15	10	15	5	30
	Medium Lot	6,000	60	100	15	20	5-15	10	15	5	30
	Small Lot	3,200	40	80	10	18	5	10	12	5	30
	Alley Loaded	3,200	40	80	10	N/A	0-5	10	10	5	30
	Cluster	2,000	40	50	8	18	5	10	10	5	30
	Duplex/ Triplex	8,000	80	100	15	20	5	10	5	5	30
	Townhouses	6,000	60	100	15	20	5	10	10	5	30
	Multi-Family/ Apartments	8,000	100	100	15	20	5	15	10	5	30
Non-Residential	Mixed Use	5,000	50	100	10-20	N/A	0-5	0-10	0-10	0-10	30
	Commercial	10,000	75	100	10	N/A	0-10	0-10	0-10	N/A	40

17.63.120 Architectural and Site Design Standards

A. Architectural and site design shall be governed by Design Guidelines for the project adopted by Resolution of the City Council. These Guidelines shall be considered during the design and review of all future development proposals, and are to be used in conjunction with other applicable zoning development standards, ordinances and/or special development requirements.

B. In addition to the City's Design Guidelines, development within the Area Plan will be guided by Covenants, Conditions and Restrictions (CC&Rs) administered and enforced by future property owners and/or a Homeowner's Association. The CC&Rs will be recorded in the office of the Shasta County Recorder concurrently with each subsequent tentative subdivision map. The City shall review the CC&Rs prior to recordation to determine consistency with the Area Plan and PD Zone District.

C. The City's design criteria are not intended to be rigid or restrict creative solutions. For uses that require a Use Permit, the Planning Commission, at its discretion, shall have the authority to consider and accept alternative site and/or building designs that are determined to meet the general intent of the adopted Design Guidelines. For uses that require an Administrative Permit or Zoning/Site Development Permit, this authority shall extend to the Director pursuant to the authority granted by this Chapter. The Design Guidelines shall incorporate the following objectives for all development:

1. Encourage originality, flexibility, innovation in site planning and development, including the architecture, landscaping and design of proposed developments in relation to the city as a whole and/or surrounding areas.

2. Discourage monotonous, drab, unsightly, dreary and inharmonious developments, minimize discordant and unsightly surroundings and visual blight, and avoid inappropriate and poor quality design.

3. Aid in assuring that structures, signs and other improvements are properly related to their sites and the surrounding sites and structures, with due regard to the aesthetic qualities of the natural terrain and landscaping and that proper attention is given to exterior appearances of structures, signs and other improvements.

D. The Design Guidelines shall incorporate the following objectives for commercial, mixed-use and multi-family development.

1. <u>Site Design</u>

a. Sites shall be developed in a coordinated manner to complement adjacent structures through placement, architecture, colors and size/mass.

b. Buildings on the same site shall be clustered and incorporate plazas, court-yards, and other pedestrian use areas.

c. Sites shall be designed to avoid the appearance of domination by automobiles. Positive methods to achieve this concept include:

i. Orienting buildings to fronting streets and placing parking at the rear and/or sides;

ii. Designing the required parking area into smaller, discrete, connected lots rather than large, single-use lots;

iii. Providing well-defined pedestrian walkways through parking areas and from public sidewalks into the site. Well-defined walkways use pavers, changes in color, texture and composition of paving materials and vertical plantings such as trees and shrubs. The minimum width of walkways shall be five feet.

iv. Parking areas shall be designed to be partially screened from view from adjacent streets and building occupants. Screening can be accomplished through a number of methods, including:

- Orienting buildings away from parking areas;
- Placing buildings between streets and parking lots;
- Using extensive landscape screening, beams, and architecturally treated walls.

d. Sites shall incorporate transit-compatible designs. Transit compatibility means designs that are pedestrian oriented, provide safe and convenient access to transit facilities, and foster efficient transit service.

e. Site plans shall be designed to provide vehicle and pedestrian connections with adjacent sites.

f. All utility lines shall be placed underground onsite and along street frontages.

g. Phased projects shall be designed so each phase, in and of itself, is complete in its functional, traffic, parking, visual, drainage and landscaping aspects.

h. The form, mass, and profile of the individual buildings and architectural features shall be designed to blend with the natural terrain and preserve the character and profile of the natural slope. Some techniques that may be considered include:

i. Split pads, stepped footings and grade separations to permit structure to conform to the natural terrain.

ii. Detaching parts of a dwelling (e.g., a garage).

iii. Excessive cantilevers should be avoided on downhill building elevations.

iv. Roofs on lower levels should be used as the deck open space of upper levels.

v. Exterior structural supports and undersides of floors and decks not enclosed by walls shall be permitted provided fire safety considerations have been adequately addressed.

vi. To the extent possible, the width of a building measured in the direction of the slope, shall be minimized in order to limit the amount of cutting and filling and to better "fit" the house to the natural terrain.

vii. Additional design standards for development in hillside areas, as defined by SLMC Section 05.08.030, shall be required pursuant to SLMC 15.08.270.

2. <u>Building Design</u>

a. No single architectural style is required. However, design themes that reflect the city's small-town atmosphere, and its natural resource and recreation-based heritage, are preferred. Such design themes typically include use of stone, heavy timbers, other natural appearing materials and colors in the building, and overall site design. Building accents which relate to the community's origin in the late 1930's and 1940's are also encouraged. Use of standardized "corporate or franchise" design prototypes that are more representative of typical urban development shall be limited.

b. Buildings shall reflect an individual design that has considered site location, conditions, and surrounding development. Building design shall provide a sense of permanence and timelessness. High quality construction and materials shall be used to ensure that buildings will not look dated or worn down over time. Building designs shall reflect an individual style and form and not merely current trends.

c. A consistent visual identity shall be applied to all sides of buildings visible to the general public. In these areas, all building sides shall have an equivalent level of quality of materials, detailing and window placement. Abrupt ending of architectural details shall be avoided with no radical change in details or features or materials.

d. Long blank walls shall be prohibited. Positive methods to achieve this objective include change in colors and materials, placement of windows, use of awnings and canopies, and architectural details and features such as corners, setbacks, and offsets. Windows at ground level may be tinted; however, mirrored windows are not allowed. Reflective roofing is not allowed.

e. Buildings facing streets shall incorporate pedestrian scaled entrances. Pedestrian scaled entrances are those that provide an expression of human activity or use in relation to building size. Doors, windows, entrances and other features shall be designed to respond to the size of the human body and not give the appearance of anonymity or over-whelming the building's users.

f. Modulation (defined as a measured setback or offset in a building face) shall be incorporated to reduce overall bulk and mass of buildings. The planes of exterior walls should not run in one continuous direction more than fifty (50) to sixty (60) feet without an offset or setback.

g. Large buildings shall have height variations to give the appearance of distinct elements.

h. Building design and/or facade shall incorporate traditional building materials such as masonry, stone, heavy timbers, brick and other natural appearing materials.

i. Building colors and roof materials shall accent, blend with, and complement surroundings. Bright or brilliant colors shall be reserved only for trim and accents.

j. Existing buildings that have faded exterior color(s), and/or that have generally a worn or weathered appearance, shall be repainted prior to establishment of any new uses.

k. Landscape areas or planting beds shall be provided around perimeters to separate buildings from surrounding pavement areas.

l. Outdoor storage areas, mechanical equipment, utility vaults, and trash receptacles shall not be visible from adjacent streets and pedestrian walkways.

m. Outdoor mechanical equipment shall be appropriately screened from view and shall be designed to minimize noise. The method of screening shall be architecturally integrated with the building with respect to materials, color, shape and size.

n. Site services shall be located on the least visible side of a building or site or within interior building spaces.

o. Ground level outdoor enclosures shall be composed of materials similar to the main structure.

p. Materials used for site features such as fences, screen walls, and signs shall be appropriate to the area where the development is located and shall complement building design through materials, color, shape, and size.

q. Developments shall provide transition with adjacent uses especially regarding building location, size and scale. No single building or development shall dominate adjacent uses in terms of size, bulk, view blockage, or shading.

3. Signage

The Design Guidelines for commercial signage shall take into consideration the scale and location of the project and signage needs for multi-use occupancies. The Design Guidelines shall incorporate the following:

a. Building Signs

i. Individual letters rather than cabinet signs are preferred.

ii. Backlit individual letters are a preferred alternative.

iii. Signs shall be compatible in scale and proportion with building design and other signs.

iv. A specific sign program or concept shall be designed and approved by the Director for multiple tenant buildings or complexes. Color and letter style shall be coordinated when businesses share the same building and consistent sign patterns (placement on buildings) shall be utilized.

v. Exposed neon tubes are acceptable for non-letter sign elements but are prohibited for letters.

vi. Roof Signs are prohibited in all sub-areas of the Area Plan boundaries.

b. Freestanding Signs

i. Freestanding monument signs shall provide only the name and address of the building and/or building tenants.

ii. Project landscaping shall be designed to incorporate freestanding monument signs.

iii. Pole/Pylon signs shall be allowed only in sub-area A. Pole/Pylon signs are prohibited in the mixed-use sub-area (Area H) or other areas within the Area Plan boundaries.

iv. Outdoor advertising signs (billboards) are prohibited within the boundaries of the Area Plan.

c. The general appurtenant sign standards as specified in SLMC Section 17.84.060 shall apply

4. Landscaping / Tree Planting

a. All landscaping throughout the development shall comply with the City's Water Efficient Landscaping Ordinance as applicable to promote the values and benefits of landscaping while recognizing the need to invest water and other resources as efficiently as possible.

b. Landscape materials shall be native plants that are adaptable to local conditions, easily maintained, and drought tolerant.

c. Development shall provide unity of design through repetition of plants and coordination with adjacent developments.

d. Landscape islands or medians shall have no dimension narrower than five feet.

e. Interior landscaping is required for parking lots containing ten or more spaces at a ratio of twenty (20) square feet of landscape area for every one hundred (100) square feet of parking area. All landscaped areas shall be protected by wheelstops or curbing, or be of sufficient width to prevent damage to plants by overhanging vehicles.

f. Street trees and parking lot trees shall be large canopy shade trees of sufficient size at maturity to provide shade to pedestrians and break up expanses of asphalt.

g. Bioretention areas that permit stormwater runoff to infiltrate planted areas shall be incorporated into site design of landscaping associated with buildings and parking lots.

h. Open stormwater detention facilities shall be landscaped and visually screened.

i. Rain gardens, cisterns and other landscape features and practices that increase rainwater capture and create opportunities for infiltration and/or onsite storage shall be incorporated into the project.

j. Reclaimed water shall be used in the irrigation system if practicable.

k. Existing vegetation shall be incorporated into overall site design.

l. Required perimeter setback areas shall be densely landscaped with a combination of trees and shrubs, which form a ninety (90) percent ground cover within three years of planting.

m. Interior site landscaping is required to define pedestrian ways, enclose outdoor gathering and seating areas, and reduce building mass.

n. Architectural features such as low walls, fountains and sculptures may be used in places where planting areas are limited or restricted.

o. Project entrances shall be enhanced through changes in paving materials such as brick payers, textured and colored concrete, providing entry structures and unity in planting of trees and shrubs.

p. Individual trees along walkways and along sidewalks in the internal portions of projects shall be planted in tree wells or planter boxes.

q. Transitional slopes shall be replanted with self-sufficient trees, shrubs and ground cover that are compatible with existing surrounding vegetation in order to enhance the blending of manufactured and natural slopes.

4. Lighting

a. Moving and flashing lights are prohibited.

b. Cut-off lenses or hoods shall be used to prevent glare and light spill off project site onto adjacent properties, buildings and roadways.

c. Lighting standards shall be designed and sized to be compatible with the character of the development.

d. Building lighting shall be installed in such a manner as to accent the primary features of the building.

e. Landscape lighting shall be held to a minimum, particularly if the structural elements are washed with light. Soft, directed path lighting and accent lighting at feature planting spaces shall be the extent of any landscape lighting.

f. Streetlights shall provide a safe level of illumination for both vehicular traffic and pedestrians without intruding into residential areas;

g. Lighting fixtures should relate to the human scale;

h. All street lighting shall be subject to an approved lighting program.

5. Screening Objectives

a. Each site shall have a trash enclosure with three sides being of masonry or concrete, compatible with the masonry or concrete used for the building, with the fourth side being double gates for access to the enclosure. Gates and walls shall be at least six feet high to fully enclose all trash and trash bins. The gates shall be constructed of solid redwood or equally acceptable material.

b. Truck loading in view of any street shall be screened in a manner to complement the architecture of the building. Although rear loading is preferred, side loading will be permitted, but not within 70 feet of the front wall of the building. Street front loading shall not be permitted.

c. Access for delivery trucks shall be functionally separate from parking areas and pedestrian walkways to avoid potential conflicts with delivery and service vehicles.

d. All outdoor storage shall be visually screened from all streets and adjacent property. Said screening shall form a complete opaque screen up to a point eight feet in vertical height but need not be opaque above that point. No storage shall be allowed to extend above the line of sight.

e. Outdoor storage may include all company-owned and operated motor vehicles, with the exception of passenger vehicles. No storage shall be permitted between a frontage street and the building line.

f. Where transformer pads may be seen from any street, they shall be screened with either heavy planting of an appropriate height or a masonry wall similar to that required for trash enclosures. Screening shall not restrict access for servicing purposes.

g. Down spouts and roof overflow drains required for the front half of a building are to be located inside the building. All others are to be painted to match the adjacent building color.

h. Vents, louvers, exposed flashing, tanks, overhead doors, rolling and service doors are to be painted to match the building color.

i. All mechanical equipment, including air conditioning, ventilators or antennas, located on any roof shall be screened with a material compatible with the building wall and roof surfaces. All sides are to be finished to match the adjacent color of the building. No mechanical equipment shall be exposed on the wall surface of a building. Roof-mounted ventilators shall be a maximum of 2½ feet above the point to which they are attached and are to be painted or prefinished to match the building parapet wall.

17.63.130 Yard / Setback Requirements.

Setbacks shall be as shown in Table **17.63.100.a.**

A. Accessory structures shall be located outside any required setback. No accessory structure shall be permitted within the front yard setback.

B. The front property line shall be the narrowest portion of the parcel adjacent to the primary access road, public or private, regardless of the orientation of the structure.

C. Encroachments of up to five (5) feet into any front or rear yard setback, and two and a half (2.5) feet into any side yard setback are permissible for architectural features or to avoid trees or encourage innovative design.

17.63.140 Parking

A. Off street parking shall be consistent with the provisions of SLMC Section Chapter 17.86.

B. Development in mixed-use areas shall require review and approval of a Master Parking Plan by the Director prior to issuance of a building permit.

C. Development proposed in mixed-use areas may include a shared parking arrangement as part of the Master Parking Plan. The Director may approve the request based on factors such as anticipated parking demands and the days and hours of operation for each use.

D. Where a proposed use is not specifically listed in SLMC Chapter 17.86, the Director has the authority to determine the required number of parking spaces based on similarity of the proposed use to other listed uses.

17.63.150 Fences and Walls

A. Fencing and walls shall be consistent with SLMC Section 17.84.030. The height and location of fencing may be amended by the Director to address site-specific constraints such as topography, sensitive biological habitat, trails, etc.

B. Fencing and walls shall be integrated into site design to contribute to a consistent appearance and may be combined with landscaping as appropriate.

C. To promote the commercial and mixed-use areas as a pedestrian-friendly area, the use of fencing and walls shall be minimized. Walls will be used only where necessary for sound attenuation, primary screening or monumentation. Residential neighborhoods shall appear to have an open character and high visibility. Where wall separation is required, perimeter walls will receive green landscape treatments (vines or vegetative screening) to minimize the impact of long solid walls.

D. Fencing and walls around non-residential uses can be used to screen visibility of unattractive areas (loading and service areas), and act as barriers to protect persons

and property (separation of incompatible uses). Where used, fencing and walls for non-residential development shall be consistent with the following:

1. Fencing and walls along property frontages shall be avoided whenever possible to prevent the obstruction of pedestrian circulation.

2. Fencing and walls shall be of durable construction, using wood, stone, masonry or brick, or a combination thereof.

3. Chain link, razor and barbed wire fencing is prohibited.

17.63.160 Streets

a. Except as modified by the City Engineer as needed to ensure safe and efficient traffic, the requirements for minimum right-of-way widths shall be as indicated in the Area Plan and on any subsequent tentative subdivision map or improvement plans.

b. All dead-end roads shall be constructed with a turn-around at the terminus approved by the City of Shasta Lake and the Shasta Lake Fire Protection District.

c. Private roadways shall be constructed to minimum standards established by the City Engineer.

d. The roadway standard may need to be widened in the vicinity of each fire hydrant and public transit or school bus stops.

e. Traffic calming measures shall be implemented when determined necessary by the Director or City Engineer to ensure safe pedestrian and bicycle circulation. This may include small scale round-abouts at residential intersections, chicanes, bulb-outs pedestrian signals, lighted crosswalks, pedestrian refuge islands, wider sidewalks and/or bicycle lanes and narrower right-of-way widths

17.63.170 Administrative Modifications

A. The Director may determine through the plan review and permitting process that a particular request for approval is in substantial conformity with the provisions and intent of the Area Plan. “Substantial conformity” may include requests for a 10% or less adjustment to quantifiable or measurable standards contained in the Area Plan or Development Standards and requests that are not readily quantifiable or measurable, which the Director determines are minor in nature. All other requests for variations shall be submitted to the Planning Commission for review and consideration.

B. Administrative Modifications are appropriate for requests that conform to one or more of the following criteria or circumstances:

1. The Director determines that the proposed adjustments are off-set by the merits of the proposed design and do not significantly change the anticipated physical characteristics, goals, and intent of the Area Plan.

2. Granting of the Administrative Modification will result in design improvements, where there are space or other restrictions on the site which preclude literal compliance with the Development Standards without hardship.

3. Granting of the Administrative Modification, with any conditions imposed, will not be materially detrimental to the public welfare or injurious to the property or improvements.

4. Proposed changes to land use diagram shapes or to the alignment of streets maintain the general land use pattern and/or provide an improved circulation system consistent with the intent and direction of the vision, goals, and policies of the Area Plan.

5. The proposed change is not expected to significantly increase environmental impacts beyond the levels identified in the Final EIR pursuant to Section 17.63.170 of this Chapter.

6. An Administrative Modification may be reviewed and acted upon by the Director. In granting an Administrative Modification, the Director may impose conditions to safeguard public health and safety, and to ensure that development so authorized is consistent with the objectives and intent of the Area Plan. No Planning Commission or City Council review is required, unless the Administrative Modification is appealed pursuant to Section 17.63.180 of this Chapter.

17.63.180 Environmental Review

All applications for a development entitlement shall be reviewed for conformity with the Area Plan and for compliance with the California Environmental Quality Act (CEQA), *Public Resources Code* Section 21000 *et seq*. The certified Environmental Impact Report (EIR) for the Area Plan shall shall serve as the base environmental document for subsequent entitlement approvals within the Area Plan. The Director will determine the appropriate level of environmental review for subsequent projects.

The rules governing the extent of any future environmental review are set forth in Sections 15183 and 15183.5 of the State CEQA Guidelines. Under this section of the State CEQA Guidelines, projects that are consistent with the development density established by existing zoning, community plan or general plan policies for which an EIR was certified shall not require additional environmental review, except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.

The Director will consider environmental effects that were not analyzed as significant effects in the certified EIR for the project, or if there are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the project. In addition, the City will consider whether there are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR.

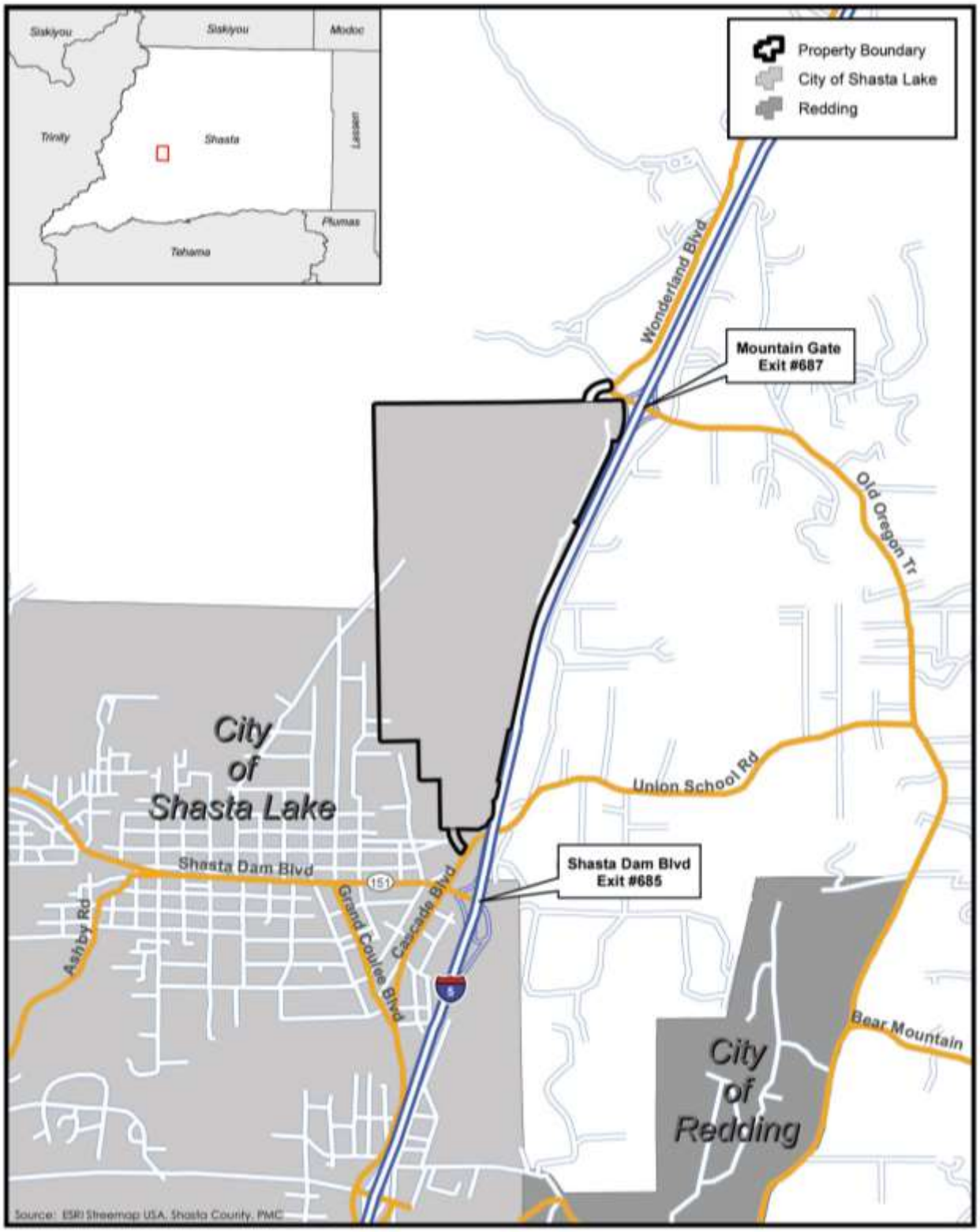
17.63.190 Appeals

An applicant or any interested party who disagrees with the Director's decision to issue, issue with conditions, or to deny a permit or time extension may appeal such decision to the Shasta Lake Planning Commission by submitting a written appeal within five (5) calendar days of the decision pursuant to the requirements of Shasta Lake Municipal Code Section 17.92.050(G). A decision of the Planning Commission may be appealed to the City Council if the appeal is submitted in writing to the City Clerk within five (5) calendar days following the Planning Commission's action. The fee for filing an appeal shall be the same as that required for appeals of actions related to a use permit.

17.63.200 Administrative Enforcement

The provisions of SLMC Section 17.94.060 for administrative enforcement shall apply.

EXHIBIT A


Siskiyou
Siskiyou
Modoc
Trinity
Shasta
Lassen
Plumas
Tehama
Property Boundary
City of Shasta Lake
Redding
Wonderland Blvd
Mountain Gate
Exit #687
Old Oregon Tr
City
of
Shasta Lake
Union School Rd
Shasta Dam Blvd
151
Shasta Dam Blvd
Exit #685
Ashby Rd
Grand Coulee Blvd
Cascade Blvd
5
Bear Mountain
City
of
Redding
Source: ESRI Streetmap USA, Shasta County, PMC

Appendix 4.3-1

TRAFFIC STUDY, August 2008

Mountain Gate at Shasta Lake
Traffic Impact Analysis Report

Draft Report

Prepared For:
PMC on behalf of the
City of Shasta Lake

Prepared By:

omni · means
ENGINEERS · PLANNERS

MOUNTAIN GATE AT SHASTA LAKE TRAFFIC IMPACT ANALYSIS

DRAFT REPORT

PREPARED FOR:
PMC ON BEHALF OF CITY OF SHASTA LAKE

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AUGUST 2008

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APPENDIX

EXECUTIVE SUMMARY

This report has been prepared to present the results of a traffic impact analysis performed by OMNI-MEANS for the proposed Mountain Gate at Shasta Lake development within 592 acres of vacant land in the north most part of the City of Shasta Lake, south of the community of Mountain Gate, west of Interstate 5 (I-5). Per the current *City of Shasta Lake General Plan*, a major portion of the site is designated as mixed-use (MU) and a minor portion is designated as commercial. The requested action associated with the proposed project is a subdivision and various lot line adjustments.

For traffic analysis purposes, it is assumed that the project will develop ± 273 residential units, 2,500 sq. ft. of office space and 5,000 sq. ft. of retail space by year 2010. Again, for traffic analysis purposes, it is assumed that the project will develop an additional ±1331 residential units, 12,500 sq. ft. of office space and 215,000 sq. ft. of retail by year 2020. No project specific phasing has been identified for the project.

It is estimated that the proposed Mountain Gate at Shasta Lake development will generate a total of 3,329 weekday daily trips in year 2010, 219 of which would occur during the AM peak hour, and 398 of which would occur during the PM peak hour.

Complete build-out of the proposed Mountain Gate development is anticipated to generate 19,424 weekday daily trips, 1,680 of which would occur during the AM peak hour, and 1,835 of which would occur during the PM peak hour.

The traffic analysis identifies potential traffic impacts to the following facilities:

- 34 intersections (21 of which fall within the City of Shasta Lake's limits, four in unincorporated Shasta County and the remaining nine of which are within the City of Redding's limits)
- eleven roadway segments
- Ten I-5 mainline segments (between the I-5/Mountain Gate Boulevard and the I-5/Cypress Avenue interchanges)
- Six merge/diverge junctions (at Cypress, State Route (SR) 44, SR 273, Oasis Road, SR 151 and Mountain Gate Boulevard)

The following traffic scenarios were analyzed as a part of this report:

- *Existing* conditions
- *Year 2010 No Project* conditions
- *Year 2010 Plus Project* conditions
- *Year 2020 No Project* conditions
- *Year 2020 Plus Project* conditions
- *Year 2030 No Project* conditions
- *Year 2030 Plus Project* conditions

The Shasta County Regional Travel Demand Model was used to derive intersection, roadway, and freeway volumes for the Years 2010, 2020 and 2030. Within the urbanized area of Shasta County, the Shasta County Regional Transportation Planning Agency (SCRTPA) has developed the Shasta County Regional Travel Demand Model (Model) for projecting future traffic flows based upon anticipated land development in Shasta County. The Model uses a traditional four-step travel demand forecasting process: trip generation, trip distribution, mode usage, and network assignment. Simply put, the Model predicts the amount of traffic that will be generated by various developments, where the traffic will go, and what roadways will be used. The Model is the best available source for predicting future traffic flows and traffic patterns.

If the reader would like more information about travel demand modeling, they are directed to *"An Introduction to Urban Travel Demand Forecasting – Self Instructional Text"*, US Department of Transportation, National Transportation Library (http://ntl.bts.gov/DOCS/UT.html).

The Regional Model was modified by OMNI-MEANS to reflect the development size and timing proposed for this project. The intersection Levels of Service (LOS) for all scenarios listed above are summarized in **Table ES 1A** and **Table ES 1B.** A full description of LOS may be found in **Table 2** included in the body of this report. All those intersections that are found to operate at unacceptable conditions under various scenarios are illustrated by **Figure ES 1A, Figure ES 1B, Figure ES 2A** and **Figure ES 2B**.

EXECUTIVE SUMMARY TABLE 1 A
(City of Shasta Lake and County of Shasta Intersections)

Intersection	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
LEVEL OF SERVICE SUMMARY MATRIX	Wonderland Blvd./Mt Gate Rd.	Mountain Gate Rd./I-5 SB Ramps	Mountain Gate Rd./I-5 NB Ramps	Mountain Gate Rd./Holiday Rd.	SR 151/Ashby Rd.	SR 151 (WB)/ Montana Ave.	SR 151 (EB)/ Montana Ave.	SR 151/Median Ave.	Mussel Shoals Ave./Red Bluff St.	Mussel Shoals Ave./Main St.	SR 151/Mussel Shoals Ave.	Shasta Wy./Front St.	SR 151/Shasta St.	SR 151/Cascade Blvd.	SR 151/I-5 SB Off Ramp	Lake Blvd./Pine Grove Ave.	Pine Grove Ave./Ashby Rd.	Pine Grove Ave./Cascade Blvd.	Pine Grove Ave./I-5 SB Ramps	Pine Grove Ave./I-5 NB Ramps	Pine Grove Ave./Twin View Blvd.
Target LOS	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
AM PEAK HOUR	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**
Existing	A 9.1	B 10.7	B 10.8	B 10.4	B 12.0	B 13.8	C 15.3	C 20.4	A 7.0	A 7.2	**D 29.6**	A 9.0	**F 328.8**	C 24.5	B 10.5	B 12.3	B 12.6	C 22.4	B 10.6	B 12.1	B 10.3
Year 2010 No Project	A 9.2	B 11.2	B 11.3	B 10.5	B 12.5	B 14.0	C 16.0	C 24.7	A 7.1	A 7.2	**D 29.5**	A 9.8	**F 621.5**	C 27.1	B 10.5	C 16.8	C 16.9	**E 39.5**	B 11.0	B 14.5	B 10.5
Year 2010 Plus Project	B 14.7	B 11.7	B 12.7	B 10.5	B 12.6	B 14.1	C 16.1	**D 25.5**	A 7.1	A 7.3	**D 30.8**	A 9.8	**F 697.2**	C 27.3	B 10.5	C 17.0	C 16.9	**E 42.6**	B 11.0	B 14.6	B 10.5
Delay Increase Due to Project	5.5	0.5	1.4	0.0	0.1	0.1	0.1	0.8	0.0	0.1	1.3	0.0	75.7	0.2	0.0	0.2	0.0	3.1	0.0	0.1	0.0
Significant Impact?	No	No	No	No	No	No	No	**Yes**	No	No	No	No	**Yes**	No	No	No	No	No	No	No	No
Year 2020 No Project	A 9.2	B 11.1	B 11.2	B 10.4	C 15.3	B 14.5	C 18.1	**D 28.5**	A 7.1	A 7.2	**D 34.1**	B 10.3	**F OVR**	C 26.0	A 9.3	C 17.4	C 17.0	**F 184.5**	B 13.5	C 24.1	B 13.8
Year 2020 Plus Project	**F 110.7**	C 16.1	**F 52.9**	B 10.8	C 16.3	C 15.9	C 20.2	**E 44.3**	A 7.2	A 7.4	**F 105.5**	B 10.6	**F OVR**	**E 58.8**	B 13.0	C 19.6	C 18.7	**F 343.8**	C 19.9	**E 47.6**	C 15.3
Delay Increase Due to Project	101.5	5.0	41.7	0.4	1.0	1.4	2.1	15.8	0.1	0.2	71.4	0.3	**OVR**	32.8	3.7	2.2	1.7	159.3	6.4	23.5	1.5
Significant Impact?	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	**Yes**	No	**Yes**	**Yes**	No	No	No	**Yes**	No	**Yes**	No
Year 2030 No Project	B 11.0	B 11.6	B 11.8	B 10.4	C 17.1	C 15.3	C 18.7	**D 29.5**	A 7.1	A 7.2	**E 35.3**	B 12.2	**F OVR**	C 24.6	A 9.4	C 21.2	C 20.3	**F OVR**	**E 35.4**	**F 325.2**	C 23.6
Year 2030 Plus Project	**F 226.7**	C 17.1	**F 65.0**	B 10.9	C 18.6	C 16.8	C 21.1	**E 47.3**	A 7.3	A 7.4	**F 114.4**	B 12.5	**F OVR**	**E 55.8**	B 16.1	C 25.0	C 22.8	**F OVR**	**F 127.7**	**F 585.3**	**D 30.0**
Delay Increase Due to Project	215.7	5.5	53.2	0.5	1.5	1.5	2.4	17.8	0.2	0.2	79.1	0.3	**OVR**	31.2	6.7	3.8	2.5	**OVR**	92.3	240.1	6.4
Significant Impact?	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	**Yes**	No	**Yes**	**Yes**	No	No	No	**Yes**	No	**Yes**	**Yes**
PM PEAK HOUR	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**	**LOS Delay**
Existing	A 9.0	B 10.4	B 10.8	B 10.4	B 11.4	B 13.9	B 13.3	C 24.7	A 7.2	A 7.2	**D 33.6**	A 9.4	**F 86.7**	C 21.7	B 12.0	B 14.4	B 11.5	**D 33.8**	B 13.3	C 17.5	B 10.7
Year 2010 No Project	A 9.0	B 10.7	B 11.0	B 10.5	B 11.9	B 14.3	B 13.6	**D 27.4**	A 7.2	A 7.4	**F 109.1**	A 9.8	**F 471.7**	C 21.1	B 11.2	C 24.0	B 13.5	**F 163.0**	C 15.7	**D 28.8**	B 10.9
Year 2010 Plus Project	C 17.9	B 13.3	C 18.6	B 10.6	B 12.1	B 14.7	B 13.9	**D 30.8**	A 7.3	A 7.5	**F 135.8**	A 9.8	**F 654.0**	C 21.6	B 11.2	C 24.4	B 13.5	**F 193.1**	C 15.9	**D 32.9**	B 10.9
Delay Increase Due to Project	8.9	2.6	7.6	0.1	0.2	0.4	0.3	3.4	0.1	0.1	26.7	0.0	182.3	0.5	0.0	0.4	0.0	30.1	0.2	4.1	0.0
Significant Impact?	No	No	No	No	No	No	No	No	No	No	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	No
Year 2020 No Project	A 9.1	B 11.1	B 11.2	B 10.4	B 13.8	C 15.2	B 14.2	**D 29.4**	A 7.2	A 7.4	**F 111.8**	B 10.2	**F OVR**	C 20.8	A 9.3	C 23.5	C 19.9	**F 1012.7**	**D 31.4**	**F 185.6**	B 14.7
Year 2020 Plus Project	**F 158.7**	C 19.7	**F 57.8**	B 11.0	B 14.7	C 16.5	C 15.8	**F 54.2**	A 7.4	A 7.6	**F 297.3**	B 10.5	**F OVR**	**E 70.7**	A 9.9	**D 28.4**	C 22.3	**F OVR**	**F 77.6**	**F 392.2**	C 17.2
Delay Increase Due to Project	149.6	8.6	46.6	0.6	0.9	1.3	1.6	24.8	0.2	0.2	185.5	0.3	**OVR**	49.9	0.6	4.9	2.4	**OVR**	46.2	206.6	2.5
Significant Impact?	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	**Yes**	No	**Yes**	**Yes**	No	**Yes**	No	**Yes**	**Yes**	**Yes**	No
Year 2030 No Project	B 10.2	B 11.3	B 11.2	B 10.4	C 16.7	C 16.3	C 15.4	**D 32.8**	A 7.2	A 7.5	**F 149.8**	B 10.4	**F OVR**	C 22.6	A 9.2	**E 36.4**	**D 31.9**	**F OVR**	**F 567.3**	**F 860.7**	**D 25.7**
Year 2030 Plus Project	**F 200.8**	C 21.6	**F 59.5**	B 10.9	C 18.4	C 17.9	C 17.3	**F 65.1**	A 7.4	A 7.7	**F 386.4**	B 10.7	**F OVR**	**F 83.2**	A 9.6	**E 49.2**	**E 38.0**	**F OVR**	**F 869.9**	**F OVR**	**E 37.2**
Delay Increase Due to Project	190.6	10.3	48.3	0.5	1.7	1.6	1.9	32.3	0.2	0.2	236.6	0.3	**OVR**	60.6	0.4	12.8	6.1	**OVR**	302.6	**OVR**	11.5
Significant Impact?	**Yes**	No	**Yes**	No	No	No	No	**Yes**	No	No	**Yes**	No	**Yes**	**Yes**	No[1]	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Fair-Share	95%		90%					59%			57%		50%	62%	51%	15%	17%	7%	9%	14%	14%

Notes:

OVR - *Overflow Conditions,* ***LOS -*** *Level of Service*

Signalized Intersections *: The project is considered to have a significant effect if it would:*

a)Result in a roadway or signalized intersection operating at an acceptable LOS under the no project (base condition)to deteriorate to an unacceptable LOS: or

b)Increase the delay by more than 5 seconds at a signalized intersection that is/will operate at an unacceptable LOS without the project.

Unsignalized Intersections: *The project is considered to have a significant effect if it would:*

a)Result in an unsignalized intersection movement/approach currently operating at an acceptable LOS to deteriorate to an unacceptable LOS, and/or also cause the intersection to meet the peak hour signal warrant: or

b)For an unsignalized intersection that meets the peak hour signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.

EXECUTIVE SUMMARY TABLE 1B
MOUNTAIN GATE TRAFFIC IMPACT ANALYSIS REPORT
(City of Redding Intersections)

Intersection	22		23		24		25		26		27		28		29		30		31		32		33		34	
LEVEL OF SERVICE SUMMARY MATRIX	Oasis Rd./Cascade Blvd.		Oasis Rd./I-5 SB Ramps		Oasis Rd./I-5 NB Ramps		Oasis Rd./Twin View Blvd.		SR 273/Caterpillar Rd.		SR 273/Northpoint Dr.		SR 273/Lake Blvd. (SR 299)		SR 299/I-5 SB Ramps		SR 299/I-5 NB Ramps		Cypress Ave./Bechelli Ln.		Cypress Ave./I-5 SB Ramps		Cypress Ave./I-5 NB Ramps		Cypress Ave./Hilltop Dr.	
Target LOS	C		C		C		C		D		D		D		D		D		C		D		D		C	
AM PEAK HOUR	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
Existing	**D**	**25.5**	C	22.3	**D**	**29.8**	B	14.2	C	31.2	B	16.7	C	26.5	B	10.4	B	18.8	C	21.0	B	15.9	B	17.4	C	22.9
Year 2010 No Project	**F**	**64.0**	**F**	**OVR**	**F**	**413.0**	**F**	**58.6**	C	32.1	B	16.4	C	29.1	B	10.6	C	20.1	B	17.9	C	22.8	C	29.5	C	29.4
Year 2010 Plus Project	**F**	**67.2**	**F**	**OVR**	**F**	**431.5**	**F**	**60.1**	C	32.1	B	16.5	C	29.3	B	10.8	C	20.9	B	18.4	C	23.0	D	45.5	C	29.4
Delay Increase Due to Project	3.2		**OVR**		18.5		1.5		0.0		0.1		0.2		0.2		0.8		0.5		0.2		16.0		0.0	
Delay Increase Significant?	No		**Yes**		**Yes**		No		No		No		No		No		No		No		No		No		No	
Year 2020 No Project	**D**	**38.7**	A	6.7	B	17.6	C	26.8	C	31.0	B	16.2	C	32.0	B	13.1	C	20.8	C	25.8	C	22.5	C	27.7	C	20.1
Year 2020 Plus Project	**D**	**41.6**	A	8.4	B	19.8	C	27.3	D	35.3	B	16.3	C	33.7	B	13.2	C	21.2	C	25.9	C	24.5	C	29.8	C	20.1
Delay Increase Due to Project	2.9		1.7		2.2		0.5		4.3		0.1		1.7		0.1		0.4		0.1		2.0		2.1		0.0	
Delay Increase Significant?	No		No		No		No		No		No		No		No		No		No		No		No		No	
Year 2030 No Project	**D**	**37.1**	B	14.4	C	25.7	C	30.7	D	35.6	B	16.9	D	36.7	B	15.2	C	22.2	C	21.0	C	29.1	D	37.1	C	25.3
Year 2030 Plus Project	**D**	**38.4**	B	14.5	C	29.6	C	31.4	D	38.2	B	17.0	D	39.3	B	17.2	C	24.1	C	21.1	C	32.8	D	42.1	C	25.3
Delay Increase Due to Project	1.3		0.1		3.9		0.7		2.6		0.1		2.6		2.0		1.9		0.1		3.7		5.0		0.0	
Delay Increase Significant?	No		No		No		No		No		No		No		No		No		No		No		No		No	
PM PEAK HOUR	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**
Existing	**D**	**33.0**	B	14.7	**F**	**68.8**	B	14.5	C	26.4	C	21.8	D	36.6	B	12.1	B	18.1	C	30.5	C	22.4	B	19.6	C	28.1
Year 2010 No Project	**F**	**88.7**	**F**	**757.8**	**F**	**799.2**	**F**	**215.8**	C	31.2	B	19.0	D	35.4	B	16.1	B	19.2	C	32.9	D	47.1	**E**	**55.6**	**D**	**38.5**
Year 2010 Plus Project	**F**	**95.8**	**F**	**839.6**	**F**	**847.3**	**F**	**228.8**	C	31.2	B	19.2	D	35.7	B	16.3	B	19.2	C	33.0	D	51.1	**E**	**57.7**	**D**	**38.8**
Delay Increase Due to Project	7.1		81.8		48.1		13.0		0.0		0.2		0.3		0.2		0.0		0.1		4.0		2.1		0.3	
Delay Increase Significant?	**Yes**		**Yes**		**Yes**		**Yes**		No		No		No		No		No		No		No		No		No	
Year 2020 No Project	**D**	**40.9**	B	10.9	C	32.7	C	29.7	C	26.4	C	21.2	D	42.6	B	19.9	C	21.4	C	31.1	**E**	**58.5**	D	47.2	C	30.0
Year 2020 Plus Project	**D**	**44.0**	B	10.9	**D**	**41.0**	C	30.0	C	26.8	C	21.6	D	45.1	C	22.2	C	22.7	C	33.4	**E**	**60.2**	D	53.1	**D**	**35.7**
Delay Increase Due to Project	3.1		0.0		8.3		0.3		0.4		0.4		2.5		2.3		1.3		2.3		1.7		5.9		5.7	
Delay Increase Significant?	No		No		**Yes**		No		No		No		No		No		No		No		No		No		No	
Year 2030 No Project	**F**	**86.9**	B	10.6	**D**	**44.9**	**D**	**43.0**	C	27.1	C	23.6	**E**	**58.7**	C	22.5	C	25.6	C	32.9	**F**	**84.7**	**E**	**58.6**	**D**	**42.6**
Year 2030 Plus Project	**F**	**88.2**	B	13.8	**E**	**57.0**	**D**	**47.4**	C	27.9	C	26.4	**E**	**63.6**	C	25.9	C	27.0	C	34.9	**F**	**89.0**	**E**	**62.9**	**D**	**46.9**
Delay Increase Due to Project	1.3		3.2		12.1		4.4		0.8		2.8		4.9		3.4		1.4		2.0		4.3		4.3		4.3	
Delay Increase Significant?	No		No		**Yes**		No		No		No		No		No		No		No		No		No		No	
Fair-Share	3%		4%		5%		4%																			

Notes

OVR *- Overflow Conditions,* ***LOS*** *- Level of Service*

Signalized Intersections: *The project is considered to have a significant effect if it would:*

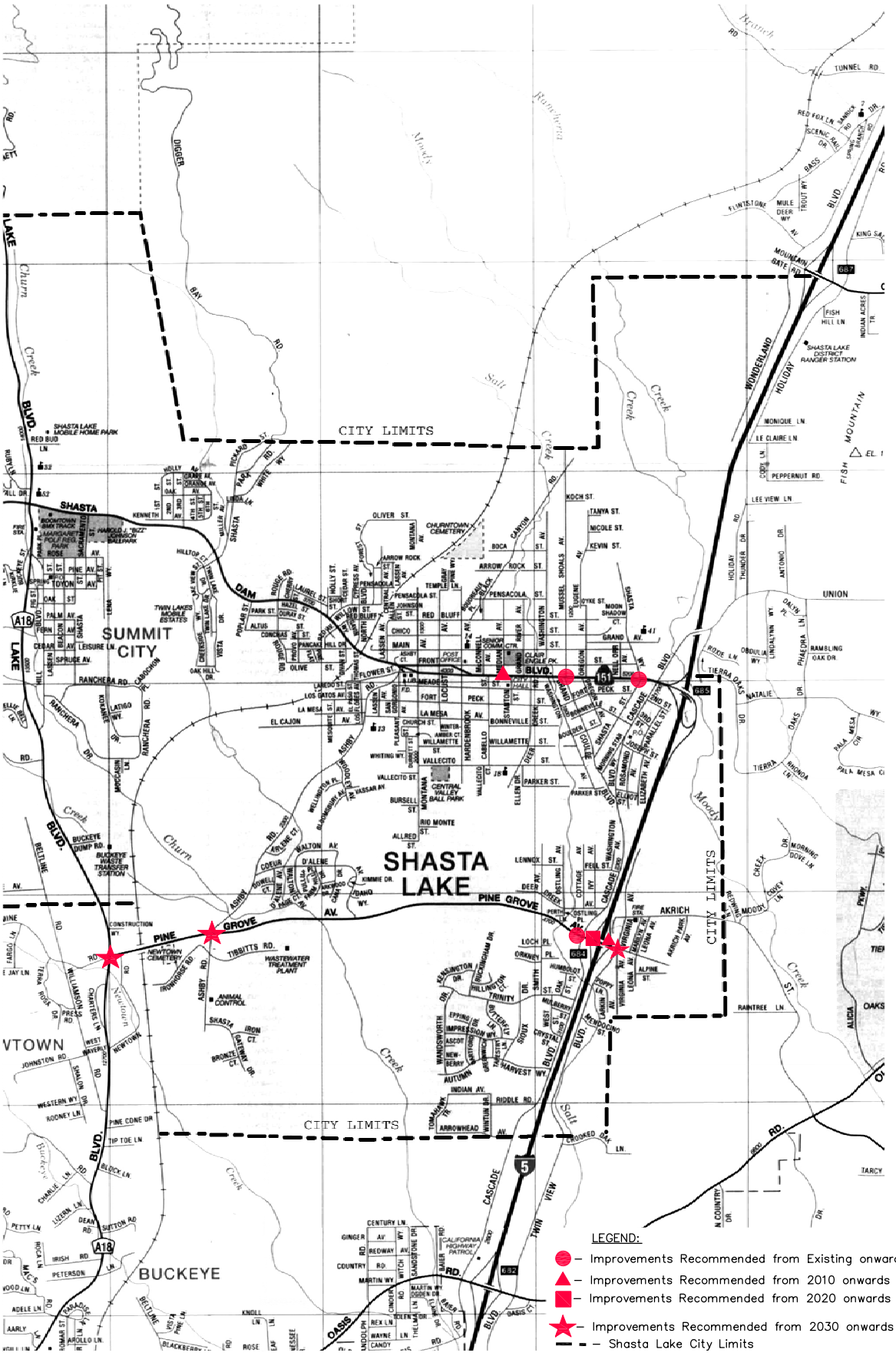
a)Result in a roadway or signalized intersection operating at an acceptable LOS under the no project (base condition)to deteriorate to an unacceptable LOS: or

b)Increase the delay by more than 5 seconds at a signalized intersection that is/will operate at an unacceptable LOS without the project.

Unsignalized Intersections: *The project is considered to have a significant effect if it would:*

a)Result in an unsignalized intersection movement/approach currently operating at an acceptable LOS to deteriorate to an unacceptable LOS, and/or also cause the intersection to meet the peak hour signal warrant: or

b)For an unsignalized intersection that meets the peak hour signal warrant, increase the delay by more than 5 seconds at a movement/approach that is operating at an unacceptable LOS without the project.

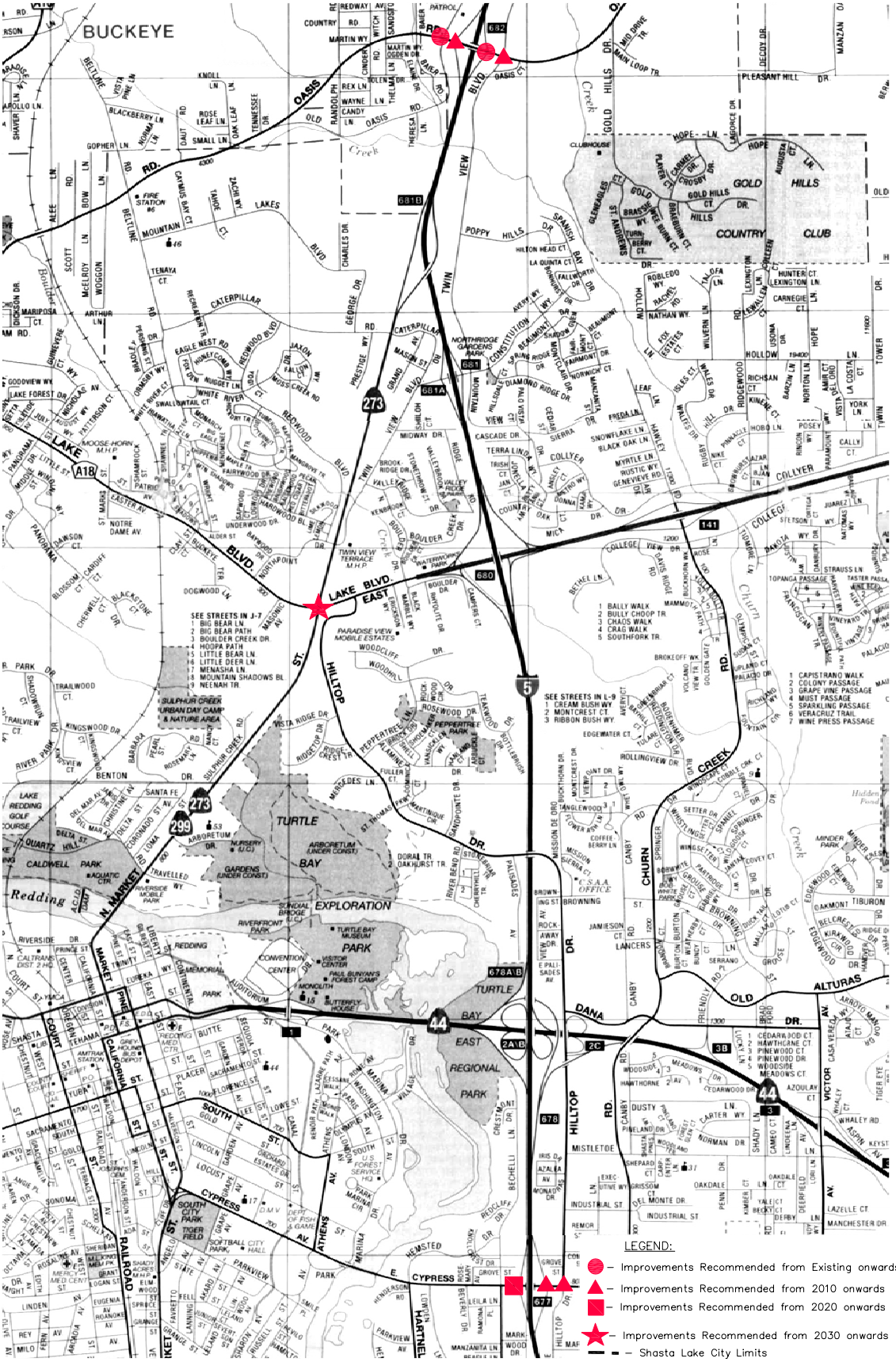


Mountain Gate at Shasta Lake

Figure ES 1A

Intersections Requiring Improvments (No Project Conditions)

File: T946TG42.dwg (04MAY07) 45-5130-14

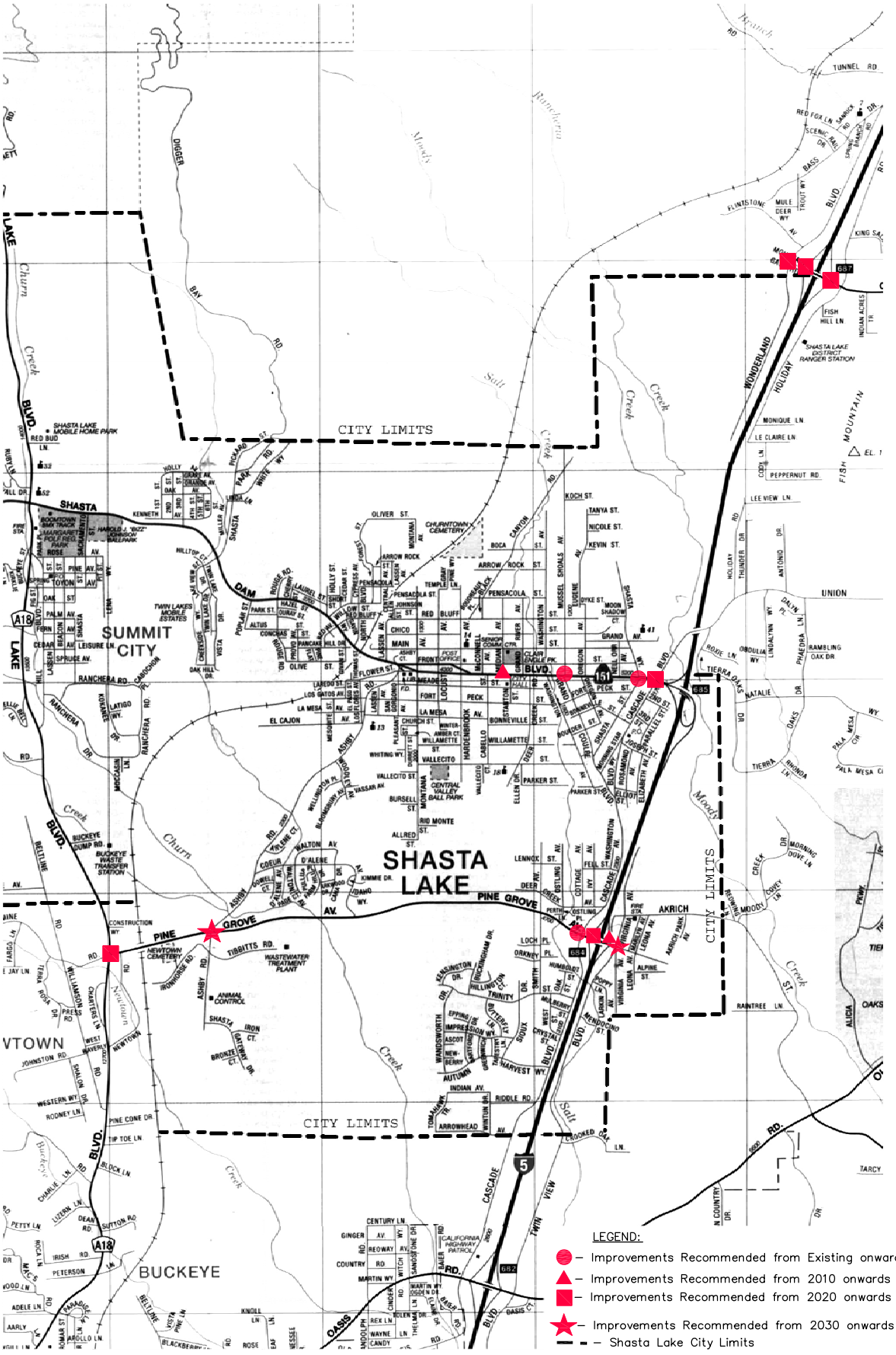


Mountain Gate at Shasta Lake

Figure ES 1B

Intersections Requiring Improvments (No Project Conditions)

File: T946TG43.dwg (04MAY07) 45-5130-14

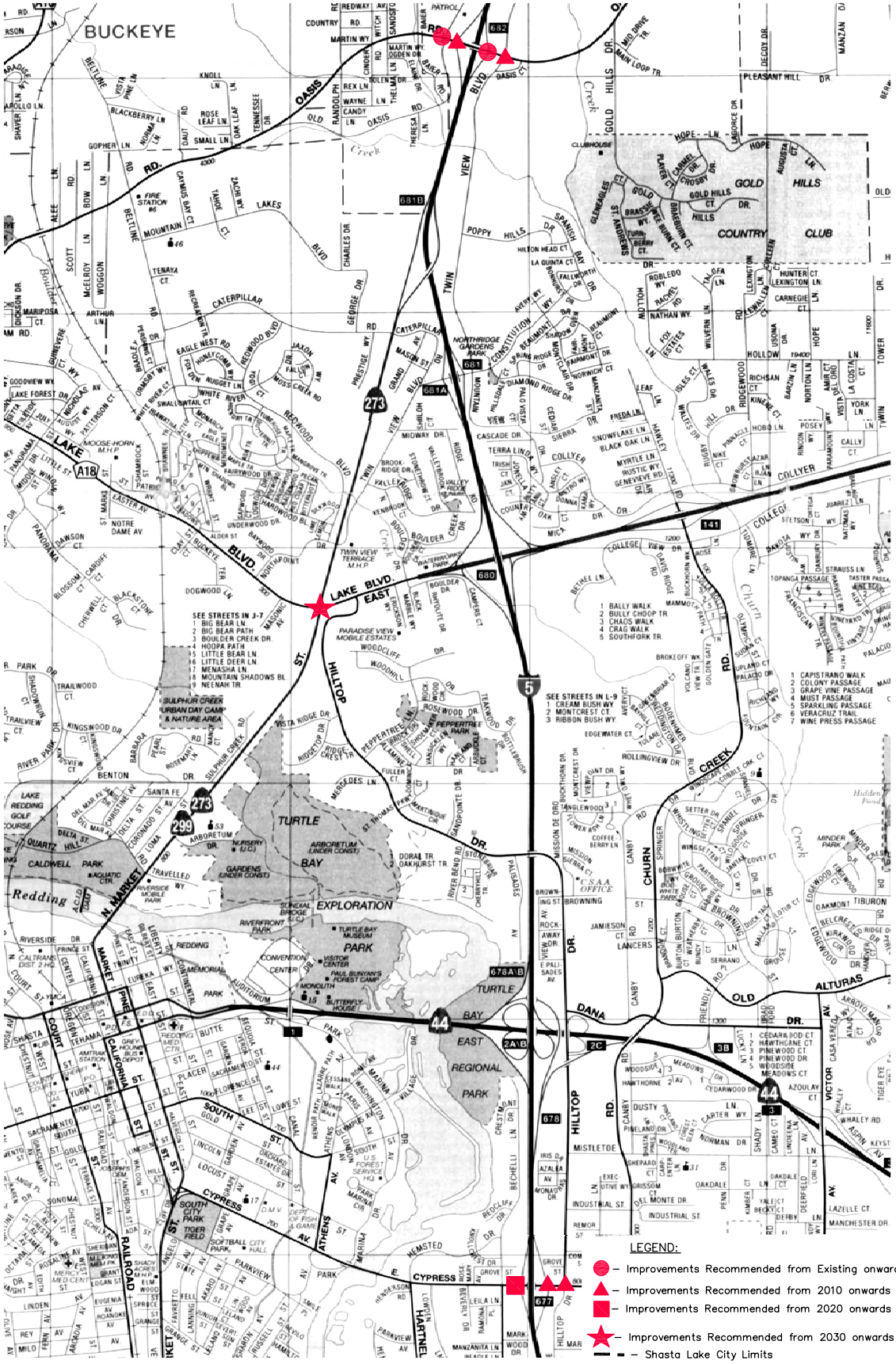


Mountain Gate at Shasta Lake

Figure ES 2A

Intersections Requiring Improvements (Plus Project Conditions)

File: T946TG44.dwg (04MAY07) 45-5130-14



Mountain Gate at Shasta Lake

Figure ES 2B

Intersections Requiring Improvments (Plus Project Conditions)

File: T946TG45.dwg (04MAY07) 45-5130-14

RECOMMENDATIONS

INTERSECTIONS

The following section provides a summary of improvements recommended for each of the study intersection analyzed within the study.

Mountain Gate Road Interchange Mitigation Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended. The 95th percentile queue lengths are based on Synchro/Simtraffic analysis.

Alternative 1 – Signal Alternative

(Note: Additional engineering study will be needed to determine the relative benefits of Alternative 1 and Alternative 2. The engineering study will need to specifically address right-of-way inputs, environmental impacts, costs, and Caltrans approval requirements).

Wonderland Boulevard/Mountain Gate Road – Intersection #1

- Year 2020 and Year 2030 Conditions
  - Realignment of the intersection to ±250 feet west of its existing location (to provide standard intersection spacing in conformance with the Caltrans Highway Design Manual)
  - Signalization
  - Exclusive left and right turn lanes in the eastbound and westbound approaches
  - Permitted (permissive) phasing in the northbound and southbound approaches

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **96%**.

I-5 NB Ramps/Mountain Gate Road – Intersection #3

- Year 2020 and Year 2030 Conditions
  - Signalization

  Exclusive right turn lane in the northbound and westbound approaches
  - Split phasing in the eastbound and westbound approaches

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **90%**.

Alternative 2 –Roundabout Alternative

Wonderland Boulevard/Mountain Gate Road – Intersection #1

- Year 2020 and Year 2030 Conditions
  - Roundabout

The project's impact at this intersection is significant under both Year 2020 and Year 2030

conditions. The project's fair-share for the improvement(s) is **96%**.

I-5 NB Ramps/Mountain Gate Road – Intersection #3

- Year 2020 and Year 2030 Conditions
  - Roundabout

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **90%**.

SR 151/Median Avenue – Intersection #8

- Year 2010, 2020 and 2030 Conditions
  - Signalization

The project's impact at this intersection is significant under all of the time periods analyzed within the study. The project's fair-share for the improvement(s) is **59%**.

SR 151/Mussel Shoals Avenue – Intersection #11

- Year 2010, 2020 and 2030 Conditions
  - Signalization

The project's impact at this intersection is significant under all of the time periods analyzed within the study. The project's fair-share for the improvement(s) is **57%**.

Wonderland Boulevard Southern Access Mitigation Alternatives

Alternative 1- Southerly connect of Wonderland Boulevard Extension as a "T" intersection with Cascade Boulevard

(Note: Additional engineering study will be needed to determine the relative benefits of Alternative 1 and Alternative 2. The engineering study will need to specifically address right-of-way needs, environmental impacts, costs, and impacts to the City's commercial center.)

SR 151/Shasta Street – Intersection #13

- Existing Conditions
  - Signalization

- Year 2010 Conditions
  - Signalization with permitted (permissive) signal phasing in the north-south approaches
  - Exclusive right turn lane in the westbound direction

- Year 2020 and Year 2030 Conditions
  - Signalization with permitted (permissive) signal phasing in the north-south approaches (same as Year 2010 improvement)
  - Exclusive right turn lane in the westbound direction (same as Year 2010 improvement)

- Additional (2nd) westbound left turn lane
- Additional (2nd) eastbound through lane

The project's impact at this intersection is significant under all of the time periods analyzed within the study. The project's fair-share for the improvement(s) is **50%.**

SR 151/Cascade Boulevard – Intersection #14

- Year 2020 and Year 2030 Conditions
  - Exclusive right turn lane in the westbound direction
  - Additional (2nd) eastbound left turn lane
  - Additional (2nd) southbound left turn lane

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **62%.**

SR 151/I-5 SB Ramps - Intersection #15

- Year 2020 and Year 2030 Conditions
  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ±1000-feet long I-5 SB auxiliary lane. (*Improvements are recommended at this intersection to accommodate the 95th percentile queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation analysis.)*

The project's fair-share for the improvement(s) is **51%.**

Alternative 2-Wonderland Boulevard Connection to SR 151 at Shasta Way

The following improvements are recommended for this alternative:

- The southerly access road (Wonderland Blvd.) for the Mountain Gate project would connect to Shasta Street.
- An easterly extension of Front Street that provides connection between Shasta Street and Cascade Boulevard would be in place.
- The northbound and southbound movements at the intersection of SR 151/Cascade Boulevard would be restricted to provide right turns only (by constructing a "semi pork chop island")

Shasta Way/Front Street – Intersection #12

- *Year 2020 Plus Project* and *Year 2030 Plus Project* Conditions
  - Signalization with permitted (permissive) signal phasing in the east-west approaches
  - One left, one through and one shared through-right in the northbound approach
  - One left, one through and one shared through-right in the southbound approach

The project's impact at this intersection is significant under both Year 2020 and 2030 conditions. The project's fair-share for the improvement(s) is **71%**.

SR 151/Shasta Street – Intersection #13

- Existing Conditions
  - Signalization with a regular eight-phase

- Year 2010 Conditions
  - Signalization with a regular eight-phase
  - One left, one through and one shared through-right in the eastbound approach

- Year 2020 and Year 2030 Conditions
  - Signalization with a regular eight-phase
  - One left, one through and one shared through-right in the eastbound approach
  - One left, two through and one right turn lane in the westbound approach
  - One left, through and right turn lane in the northbound approach
  - Two left, one through and one right turn lane in the southbound approach

The project's impact at this intersection is significant under both Year 2020 and 2030 conditions. The project's fair-share for the improvement(s) is **50%**.

SR 151/Cascade Boulevard – Intersection #14

- Year 2020 and Year 2030 Conditions
  - One left, one through and one shared through-right in the eastbound approach
  - One left, two through and one right turn lane in the westbound approach
  - Right turn only lane in both the northbound and southbound approaches

The project's impact at this intersection is significant under both Year 2020 and 2030 conditions. The project's fair-share for the improvement(s) is **62%**.

SR 151/I-5 SB Ramps – Intersection #15

- Year 2020 and Year 2030 Conditions
  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ±1000-feet long I-5 SB auxiliary lane. (*Improvements are recommended at this intersection to accommodate the 95th percentile queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation analysis.)*

The project's impact at this intersection is significant under both Year 2020 and 2030 conditions. The project's fair-share for the improvement(s) is **51%**.

Lake Boulevard/Pine Grove Avenue – Intersection #16

- Year 2020 and Year 2030 Conditions
  - Signal (or) All-way stop control

The project's impact at this intersection is significant under Year 2020 and 2030 conditions. The project's fair-share for the improvement(s) is **15%**.

Pine Grove Avenue/Ashby Road – Intersection #17

- Year 2030 Conditions
  - Signal (or) All-way stop control

The project's impact at this intersection is significant under Year 2030 conditions. The project's fair-share for the improvement(s) is **17%**.

Pine Grove Avenue/Cascade Boulevard – Intersection #18

- Existing Conditions
  - Signal (or) All-way stop control

- Year 2010 Conditions
  - Signal (or) All-way stop control (same as Existing conditions)

- Year 2020 and Year 2030 Conditions
  - Signalization
  - Realignment of the intersection (to a new location west of its existing location, pursuant to the City of Shasta Lake General Plan)
  - Widening of northbound and southbound approaches to include one left, through and right turn lane

(Note: The City currently has a project programmed for construction in 2008 to realign Cascade Boulevard and signalize the realigned intersection)

The project's impact at this intersection is significant under all of the time periods analyzed within the study. The project's fair-share for the improvement(s) is **7%**.

Pine Grove Avenue/I-5 SB Ramps – Intersection #19

- Year 2020 and Year 2030 Conditions
  - Signalization

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **9%**.

Pine Grove Avenue/I-5 NB Ramps – Intersection #20

- Year 2010 Conditions
  - Signalization

- Year 2020 and Year 2030 Conditions
  - Signalization
  - Widening of the northbound approach to include an exclusive left turn lane and the westbound approach to include an exclusive right turn lane

The project's impact at this intersection is significant under both Year 2020 and Year 2030 conditions. The project's fair-share for the improvement(s) is **14%**.

Pine Grove Avenue/Twin View Boulevard – Intersection #21

Although the intersection was found to be operating at acceptable LOS for all time periods, to accommodate for the 95th percentile queues, the following improvements are recommended:

- Year 2020 and Year 2030 Conditions
  - Signalization
  - Realignment of the intersection (to a new location west of its existing location)
  - Widening of eastbound and westbound approaches to include one left, through and right turn lane
  - Widening of northbound and southbound approaches to accommodate a separate left turn lane

The project's impact at this intersection is significant under Year 2030 conditions. The project's fair-share for the improvement(s) is **14%**.

Oasis Road/Cascade Boulevard – Intersection #22

- Existing Conditions
  - Signal (or) All-way stop control

(Note: The City of Redding has conditioned three developments in the Oasis Road area to construct this improvement. Caltrans has issued an Encroachment Permit for construction of this improvement).

- Year 2010 Conditions
  - Signalization with permitted (permissive) signal phasing on all of the approaches
  - Realignment of the intersection (to a new location west of its existing location, pursuant to the City of Redding Oasis Area Specific Plan)

- Year 2020 and Year 2030 Conditions
  - Realignment of the intersection (to a new location west of its existing location, pursuant to the City of Redding Oasis Area Specific Plan)
  - Widening of eastbound and westbound approaches to include one left, three through and one right turn lane(s)
  - Widening of the northbound approach to include one left, one through and one right turn lane
  - Widening of the southbound approach to include two left, one through and one right turn lane(s)

The project's impact at this intersection is significant under Year 2010 conditions. The project's fair-share for the improvement(s) is **3%**.

Oasis Road/I-5 SB Ramps – Intersection #23

- Year 2010 Conditions

- Signalization
- Provision of an exclusive left turn lane in the westbound direction (this would require widening of the overcrossing)
- Provision of an exclusive eastbound right turn lane

The project's impact at this intersection is significant under Year 2010 conditions. The project's fair-share for the improvement(s) is **4%**.

Oasis Road/I-5 NB Ramps – Intersection #24

- Existing Conditions

Signali
- zation and provision of an exclusive right turn lane in the northbound direction

- Year 2010 Conditions
  - Signalization and provision of an exclusive right turn lane in the northbound direction (same as Existing conditions)
  - Provision of an additional westbound through lane (this would require widening of the overcrossing)

- Year 2020 and Year 2030 Conditions
  - Widening of the eastbound approach to include an additional (2^{nd}) left turn lane
  - Widening of the westbound approach to include an exclusive westbound right turn lane
  - Widening of the northbound approach to include an additional (2^{nd}) left turn lane (this is in addition to the shared through-left lane)

The project's impact at this intersection is significant under Year 2010 conditions. The project's fair-share for the improvement(s) is **5%**.

Oasis Road/Twin View Boulevard – Intersection #25

- Year 2010 Conditions
  - Signalization and realignment of the intersection east of its current location pursuant to the City of Redding Oasis Area Specific Plan
  - Provision of an exclusive westbound left turn lane
  - Provision of an exclusive eastbound left turn lane

- Year 2030 Conditions
  - Widening of the eastbound approach to include an additional (2^{nd}) left turn lane
  - Widening of the southbound approach to include an additional right turn lane

The project's impact at this intersection is significant under Year 2010 conditions. The project's fair-share for the improvement(s) is **4%**.

SR 273/Lake Boulevard (SR 299) – Intersection #28

- Year 2030 Conditions
  - Widening of the eastbound and westbound approaches to include a third through lane (this improvement is consistent with the improvement identified within the City of Redding General Plan Circulation Element)

The project's impact at this intersection is **not** significant for any of the time periods analyzed within the study.

Cypress Avenue/I-5 SB Ramps – Intersection #32

- Year 2020 Conditions
  - Widening of the southbound approach to include an additional right turn lane (2nd right turn lane). Although this improvement would yield acceptable LOS, the 95th percentile queues for the westbound left turns would exceed the storage lengths.

- Year 2030 Conditions
  - Widening of the southbound approach to include an additional right turn lane (2nd right turn lane)
  - Widening of the westbound approach to include an additional (2nd) left turn lane. This improvement would require widening of the I-5/Cypress Avenue undercrossing.

The project's impact at this intersection is **not** significant for any of the time periods analyzed within the study.

Cypress Avenue/I-5 NB Ramps – Intersection #33

- Year 2010 and 2020 Conditions
  - Widening of the westbound approach to include an exclusive right turn lane

- Year 2030 Conditions
  - Widening of the westbound approach to include an exclusive right turn lane (2010 and 2020 improvement)
  - Widening of the eastbound approach to include an additional eastbound left turn lane. This improvement would require widening of the I-5/Cypress Avenue undercrossing.

The project's impact at this intersection is **not** significant for any of the time periods analyzed within the study.

Cypress Avenue/Hilltop Drive – Intersection #34

- Year 2010, 2020 and 2030 Conditions
  - Restripe the northbound approach to include two left turn and one shared through-right lane
  - Restripe the southbound approach to include one left, one shared through-right and one right turn lane
  - Change the signal phasing to include protected left turns in the north-south approaches
  - Widening of the westbound approach to include an exclusive right turn lane

The project's impact at this intersection is **not** significant for any of the time periods analyzed within the study.

ROADWAY SEGMENTS

Pine Grove Avenue west of Cascade Boulevard

- Year 2030 Conditions
  - Widening the segment to four lane arterial standards would yield acceptable LOS. The project's impact at this roadway segment is **not** significant for any of the time periods analyzed within the study.

FREEWAY MAINLINE SEGMENTS

The traffic study shows that, unless mitigated, the following freeway mainline segments either currently operate or would operate unacceptably under future scenarios:

- I-5 NB, south of Cypress Avenue I/C (Existing, 2010, 2020 and 2030 conditions)
- I-5 SB, south of Cypress Avenue I/C (2010, 2020 and 2030 conditions)
- I-5 NB, north of Cypress Avenue I/C (2010, 2020 Plus Project and 2030 conditions)
- I-5 NB, north of SR 44 I/C (2010, 2020 and 2030 conditions)
- I-5 SB, north of SR 44 I/C (2010, 2020 and 2030 conditions)
- I-5 NB, north of SR 299 I/C (2010, 2020 and 2030 conditions)
- I-5 SB, north of SR 299 I/C (2020 Plus Project and 2030 conditions)
- I-5 NB, north of Twin View Boulevard I/C (2030 conditions)
- I-5 SB, north of Twin View Boulevard I/C (2030 Plus Project conditions)

Provision of an additional through lane would yield acceptable LOS for the segments identified above.

(Note: An interagency partnership, including Tehama County, Shasta County, City of Corning, City of Red Bluff, City of Anderson, City of Redding, City of Shasta Lake, and Caltrans was formed in 2006 to address the collection of fees to fund a portion of the cost to widen I-5 in the future. The interagency partnership, "Fix 5", maintains information about its efforts at the following Internet site: www.fixfive.org.

RAMP MERGE/DIVERGE JUNCTIONS

The traffic study shows that, unless mitigated, the following ramp merge/diverge junctions either currently operate or would operate unacceptably under future scenarios:

I-5 NB On-Ramp Merge Junction @ I-5/Cypress Avenue Interchange: The additional through lane recommended previously would provide acceptable LOS for Year 2020 and 2030 conditions.

I-5 & SR 44 – NB Connector from WB 44: The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would provide acceptable LOS for Year 2010, 2020 and 2030 conditions.

I-5 & SR 44 – SB Connector to WB 44, SB Connector to EB 44: The collector distributor ramp configuration (Interchange Type L-10) would provide acceptable LOS for Existing, Year 2010, 2020 and 2030 conditions.

(Note: Caltrans has a project proposed for construction in 2009 to construct this improvement).

I-5 NB On-Ramp Merge Junction @ SR 273/I-5 Interchange: Consistent with the improvements identified within Oasis Road Specific Plan, it is recommended that a new overpass connection to Twin View Boulevard be provided. This improvement would provide acceptable LOS for Year 2020 and 2030 conditions.

I-5 SB On-Ramp Merge Junction @ SR 151/I-5 Interchange: A two lane on-ramp with a ± 1000 feet long auxiliary lane would provide acceptable LOS for *Year 2030 Plus Project* conditions.

INTRODUCTION

This report has been prepared by OMNI-MEANS to present the results of a traffic impact analysis performed for the proposed Mountain Gate at Shasta Lake project, located north of Shasta Lake City, south of the community of Mt. Gate, and west of I-5, within Shasta County. This Traffic Impact Analysis Report (TIAR) will be used as a technical supporting document for the project's EIR document. The term project as used in the report refers to the proposed Mountain Gate at Shasta Lake Development. **Figure 1** is a project vicinity map, which illustrates the project location.

Included in this report is a description of the existing transportation setting, including the current AM and PM peak hour traffic operations at key intersections, ramps, freeway mainline segments and roadways, which were selected for analysis in coordination with the Shasta County and Caltrans. In addition, this report includes an analysis and discussion of the following items:

- Quantification of the trip generation and trip distribution associated with the proposed project, and the resulting impacts on existing and future AM and PM intersection, ramp, freeway mainline and daily roadway segment operations.
- Year 2010 intersection, ramp, freeway mainline and daily roadway segment operations with and without the development of the proposed project.
- Year 2020 intersection, ramp, freeway mainline and daily roadway segment operations with and without the development of the proposed project.
- Year 2030 intersection, ramp, freeway mainline and daily roadway segment operations with and without the development of the proposed project.
- Potential base improvements and project-related mitigation measures that are needed to alleviate unacceptable level of traffic impacts at the study intersections and roadway segments, under conditions both without and with the development of the proposed project.

The following traffic scenarios are analyzed as a part of this report:

- *Existing* conditions
- *Year 2010 No Project* conditions
- *Year 2010 Plus Project* conditions
- *Year 2020 No Project* conditions
- *Year 2020 Plus Project* conditions
- *Year 2030 No Project* conditions
- *Year 2030 Plus Project* conditions

The Shasta County Regional Travel Demand Model was used to derive intersection, roadway, and freeway volumes for the Years 2010, 2020 and 2030. Within the urbanized area of Shasta County, the Shasta County Regional Transportation Planning Agency (SCRTPA) has developed the Shasta County Regional Travel Demand Model (Model) for projecting future traffic flows based upon anticipated land development in Shasta County. The Model uses a traditional four-step travel demand forecasting process: trip generation, trip distribution, mode usage, and network assignment. Simply put, the Model predicts the amount of traffic that will be generated by various developments, where the traffic will go, and what roadways will be used. The Model is the best available source for predicting future traffic flows and traffic patterns.

If the reader would like more information about travel demand modeling, they are directed to *"An Introduction to Urban Travel Demand Forecasting – Self Instructional Text"*, US Department of Transportation, National Transportation Library (http://ntl.bts.gov/DOCS/UT.html).

The Regional Model does not assume any development in the study area (project location) for Year 2010 conditions. The regional model assumes the development for Year 2020 and 2030 conditions as follows:

- Year 2020 Conditions
  - 100,000 sq. ft. service commercial
  - 250 Multi-Family Dwelling Unit

- Year 2030 Conditions
  - 100,000 sq. ft. service commercial
  - 500 Multi-Family Dwelling Unit
  - 750 Single-Family Dwelling Unit

- Beyond Year 2030 Conditions
  - 250 Single-Family Dwelling Unit in addition to the Year 2030 uses

OMNI-MEANS modified the regional model to reflect the development size and timing as proposed for this project.

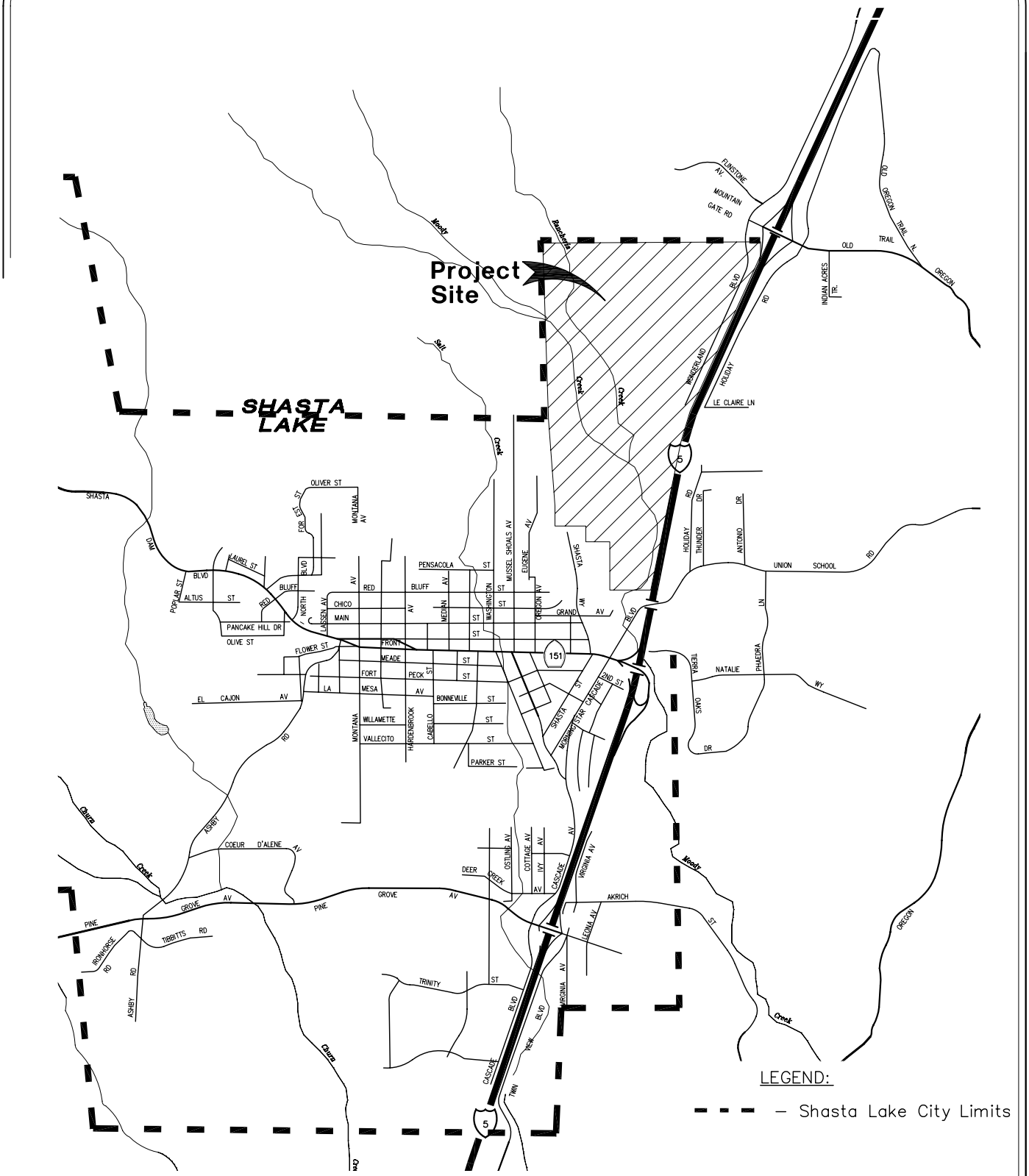
Existing conditions describes the existing transportation facilities serving the project site, and the traffic operations which currently exist for those facilities.

Year 2010 conditions refer to analysis that would exist following approximately three years of assumed development in the Cities of Shasta Lake, Redding, and Shasta County. The *Year 2010 No Project* condition investigates traffic operations in Year 2010, but excluding development of the portion of the proposed project that this study assumes to be in place in Year 2010. The *Year 2010 Plus Project* condition is the analysis scenario in which traffic impacts associated with the development of the portion of the proposed project that this study assumes to be in place in Year 2010 are investigated in comparison to the *Year 2010 No Project* condition scenario.

Year 2020 conditions refer to analysis that would exist following approximately ten years of assumed development in the Cities of Shasta Lake, Redding, and Shasta County. The *Year 2020 No Project* condition investigates traffic operations in Year 2020, but excluding development of the proposed project. The *Year 2020 Plus Project* condition is the analysis scenario in which traffic impacts associated with the full build-out of the proposed project are investigated in comparison to the *Year 2020 No Project* condition scenario.

Year 2030 conditions refer to analysis that would exist following approximately twenty years of assumed development in the Cities of Shasta Lake, Redding, and Shasta County. The *Year 2030 No Project* condition investigates traffic operations in Year 2030, but excluding development of the proposed project. The *Year 2030 Plus Project* condition is the analysis scenario in which traffic impacts associated with the full build-out of the proposed project are investigated in comparison to the *Year 2030 No Project* condition scenario.

The above traffic scenarios are described in further detail and evaluated in subsequent sections of this report.



Mountain Gate at Shasta Lake

Figure 1

Project Vicinity Map

T946TG27.DWG(22MAR07)45-5130-14

EXISTING TRANSPORTATION SYSTEM

CALTRANS FACILITIES

Interstate 5 (I-5) is a major interstate freeway facility that traverses in the north-south direction from the Mexican border to the Canadian border through the States of California, Oregon, and Washington. The freeway serves as the primary transportation corridor along the west coast, and the primary route for trucks carrying goods to and from Mexico, Canada, and the primary seaports along the West Coast. I-5 passes west of Shasta Late City and provides access to the project study area primarily via the Mountain Gate Boulevard and SR 151 interchanges.

SR 151 is a major east-west arterial, which is a Caltrans maintained facility that traverses through the heart of City of Shasta Lake. It begins at Shasta Dam and has its terminus at I-5.

SR 273 operates as an arterial from the northern end of the Redding Central Business District to the Benton Drive and as an expressway from Benton Drive to I-5. SR-273 merges/diverges with I-5 in north Redding, and continues south through downtown Redding to the City of Anderson, where it again connects directly to I-5. The facility is primarily a four lane divided roadway north and south of the downtown core with a speed limit ranging from 55-60 mph at its northern and southern sections near I-5, reducing incrementally to 25-35 mph within the downtown core. The City of *Redding Transportation Element - Appendix A* calls for widening SR 273 between Trinity Street and Benton Drive to a six lane arterial facility.

CITY OF SHASTA LAKE ROADWAYS

Ashby Road is a north-south residential collector that connects SR 151 to the north and Pine Grove Avenue to the south in City of Shasta Lake.

Montana Avenue is a north-south low volume residential collector that facilitates traffic flow between the residential neighborhoods and SR 151 in City of Shasta Lake.

Red Bluff Avenue and Main Street are east-west low volume residential collector facilities that facilitate traffic flow between the residential neighborhoods and SR 151 in City of Shasta Lake.

Mussel Shoals Avenue is a north-south low volume residential collector that connects residential streets north of and parallel to SR 151 to SR 151. South of SR 151, it traverses as Grand Coulee Boulevard, which eventually ties into Cascade Boulevard in City of Shasta Lake.

Shasta Street is a north-south low volume residential collector that traverses north and south of SR 151, connecting residential and retail development to SR 151. South of SR 151, it terminates at Cascade Boulevard in City of Shasta Lake.

Cascade Boulevard is a major north-south arterial that runs parallel to I-5 along the SR 151 and the Pine Grove interchanges in the City of Shasta Lake and the Oasis Road interchange in City of Redding.

Pine Grove Avenue is an east-west collector street that extends east from Lake Boulevard to Leona Avenue in the City of Shasta Lake. The over-pass has a three lane cross-section, two travel lanes with a center left turn lane.

CITY OF REDDING ROADWAYS

Oasis Road is a two lane arterial, which is generally aligned in a northeast-southwest alignment in the northernmost sections of the City of Redding. The roadway begins approximately 2½ miles west of I-5 at Lake

Boulevard, and continues northeast through the I-5 interchange approximately 2 more miles before terminating at Old Oregon Trail. Old Oregon Trail serves as the continuation of the roadway northward. Oasis Road thus provides a direct continuation of Old Oregon Trail traffic to the south with access to I-5, and a direct route for traffic as it continues to/or arrives from, areas of downtown Redding, or other locations to the south.

STUDY FACILITIES

Intersections:

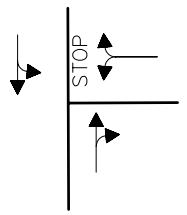
The following study intersections, which were established through consultations with City of Shasta Lake and Caltrans staff, were included for existing, Year 2010, 2020 and 2030 traffic impact analysis, for conditions both without and with the proposed project.

#	Intersection	Jurisdiction	Acceptable LOS Threshold
1	Wonderland Blvd./Mt Gate Rd.	COS	C
2	Mountain Gate Rd./I5 SB Ramps	COS	C
3	Mountain Gate Rd./I5 NB Ramps	COS	C
4	Mountain Gate Rd./Holiday Rd.	COS	C
5	SR151/Ashby Rd.	COSL	C
6	SR151(WB)/Montana Ave.	COSL	C
7	SR151(EB)/Montana Ave.	COSL	C
8	SR151/Median Ave.	COSL	C
9	Mussel Shoals Ave./Red Bluff St.	COSL	C
10	Mussel Shoals Ave./Main St.	COSL	C
11	SR151/Mussel Shoals Ave.	COSL	C
12	Shasta Wy./Front St.	COSL	C
13	SR151/Shasta St.	COSL	C
14	SR151/Cascade Blvd.	COSL	C
15	SR151/I5 SB Off Ramp	COSL	C
16	Lake Blvd./Pine Grove Ave.	COS	C
17	Pine Grove Ave./Ashby Rd.	COSL	C
18	Pine Grove Ave./Cascade Blvd.	COSL	C
19	Pine Grove Ave./I5 SB Ramps	COSL	C
20	Pine Grove Ave./I5 NB Ramps	COSL	C
21	Pine Grove Ave./Twin View Blvd.	COSL	C
22	Oasis Rd./Cascade Blvd.	COR	C
23	Oasis Rd./I5 SB Ramps	COR	C
24	Oasis Rd./I5 NB Ramps	COR	C
25	Oasis Rd./Twin View Blvd.	COR	C
26	SR273/Caterpillar Rd.	COR	D
27	SR273/Northpoint Dr.	COR	D
28	SR273/Lake Blvd. (SR299)	COR	D
29	SR299/I5 SB Ramps	COR	D
30	SR299/I5 NB Ramps	COR	D
31	Cypress Ave./Bechelli Ln.	COR	C
32	Cypress Ave./I5 SB Ramps	COR	D
33	Cypress Ave./I5 NB Ramps	COR	D
34	Cypress Ave./Hilltop Dr.	COR	C

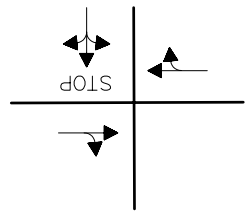
Notes:
COS - County of Shasta
COR - City of Redding
COSL - City of Shasta Lake

Intersection turning lane geometrics and traffic control for the critical study intersections are illustrated on **Figure 2A** and the location of the above study intersections are illustrated on **Figure 2B** and **Figure 2C**.

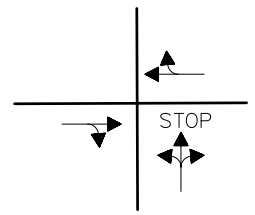
1 WONDERLAND BLVD/ MT GATE RD



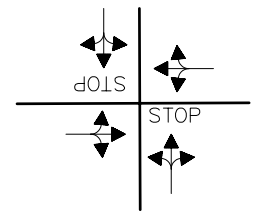
2 OLD OREGON TRAIL/ I5 SB RAMPS



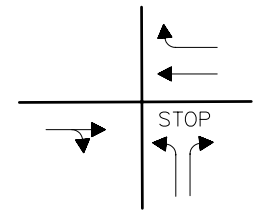
3 OLD OREGON TRAIL/ I5 NB RAMPS



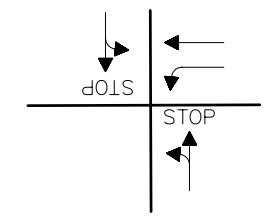
4 OLD OREGON TRAIL/ HOLIDAY RD



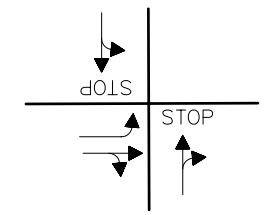
5 SR 151/ ASHBY RD



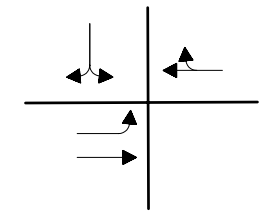
6 SR151 (WB)/ MONTANA AVE



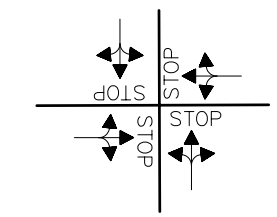
7 SR151 (EB)/ MONTANA AVE



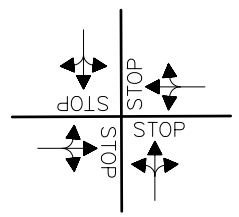
8 SR151/ MEDIAN AVE



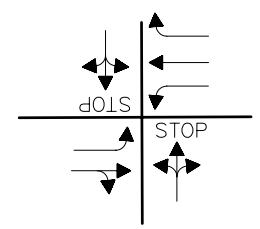
9 MUSSEL SHOALS AVE/ RED BLUFF ST



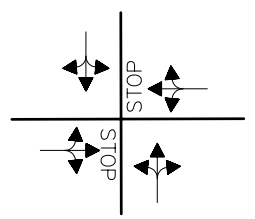
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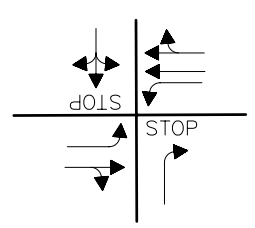
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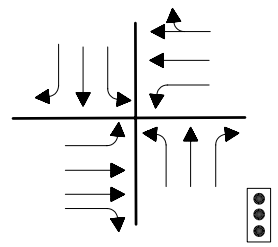
12 SHASTA WAY/ FRONT ST



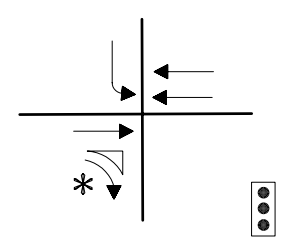
13 SR 151/ SHASTA ST



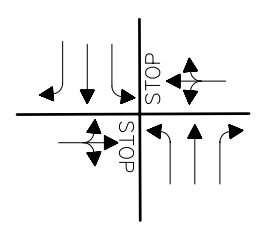
14 SR 151/ CASCADE BLVD



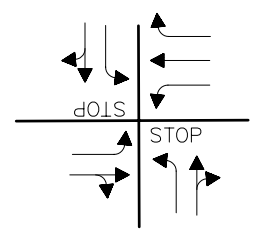
15 SR151/ I5 SB OFF RAMP



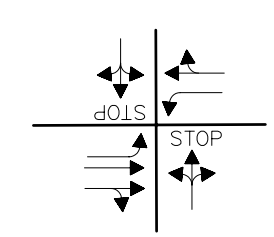
16 LAKE BLVD/ PINE GROVE AVE



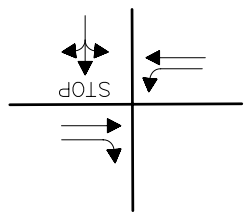
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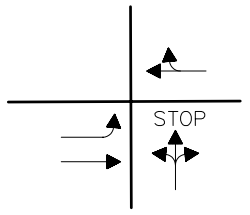
18 PINE GROVE AVE/ CASCADE BLVD



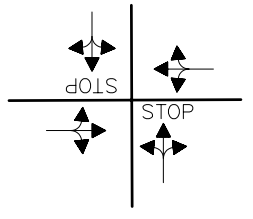
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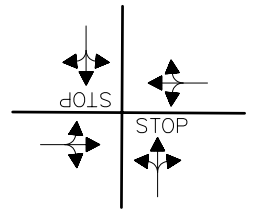
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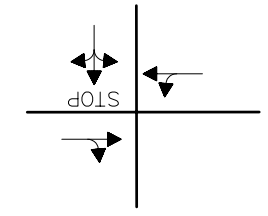
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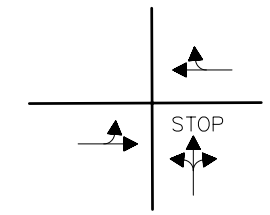
22 OASIS RD/ CASCADE BLVD



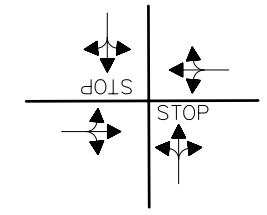
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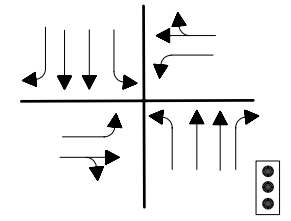
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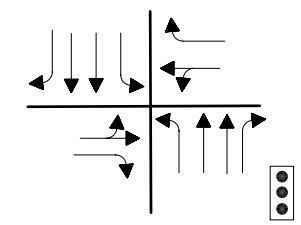
25 OASIS RD/ TWIN VIEW BLVD



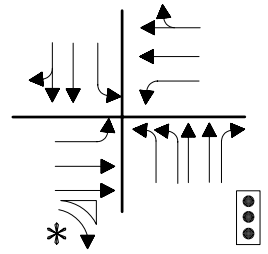
26 SR 273/ CATERPILLAR RD



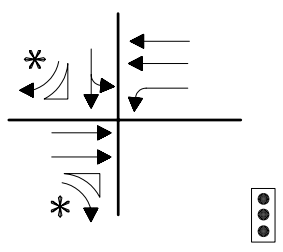
27 SR 273/ NORTHPOINT DR



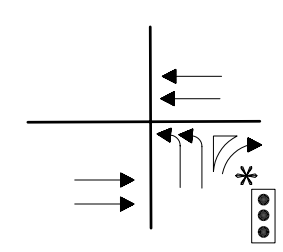
28 SR 273/ LAKE BLVD (SR 299)



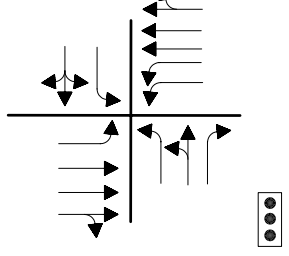
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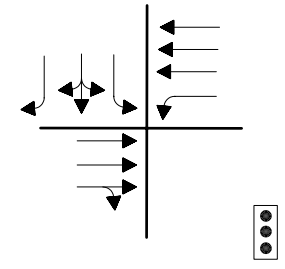
30 SR 299/ I5 NB OFF RAMPS



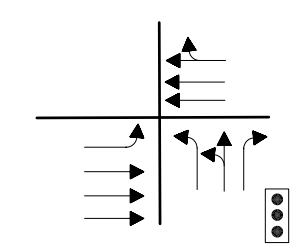
31 CYPRESS AVE/ BECHELLI LN



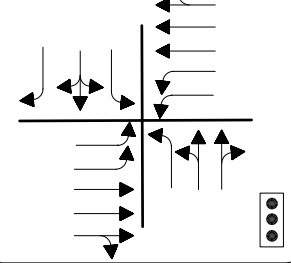
32 CYPRESS AVE/ I5 SB RAMPS



33 CYPRESS AVE/ I5 NB RAMPS



34 CYPRESS AVE/ HILLTOP DR



LEGEND:

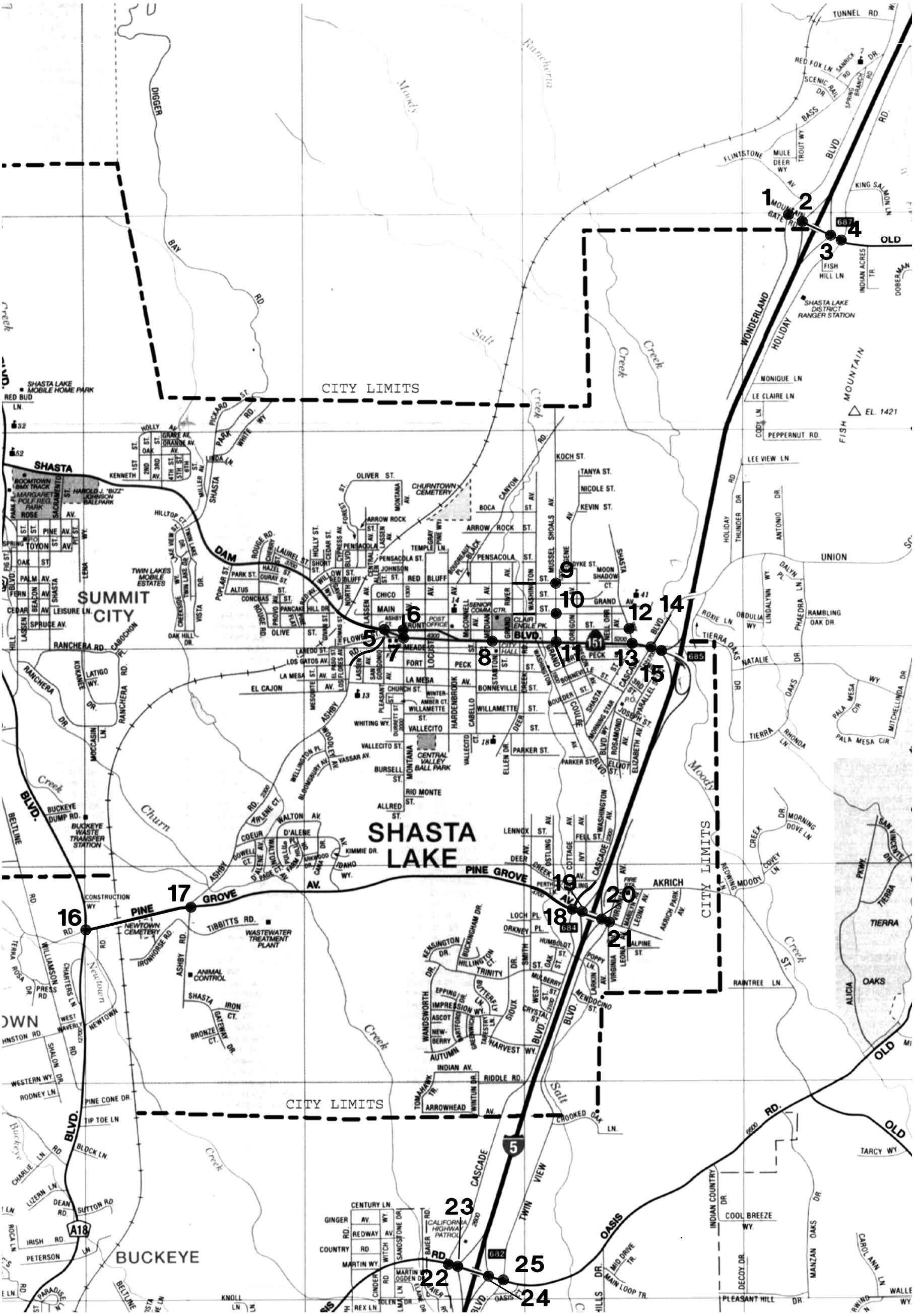
* – FREE RIGHT

Mountain Gate at Shasta Lake

Figure 2A

Existing Lane Geometrics and Control

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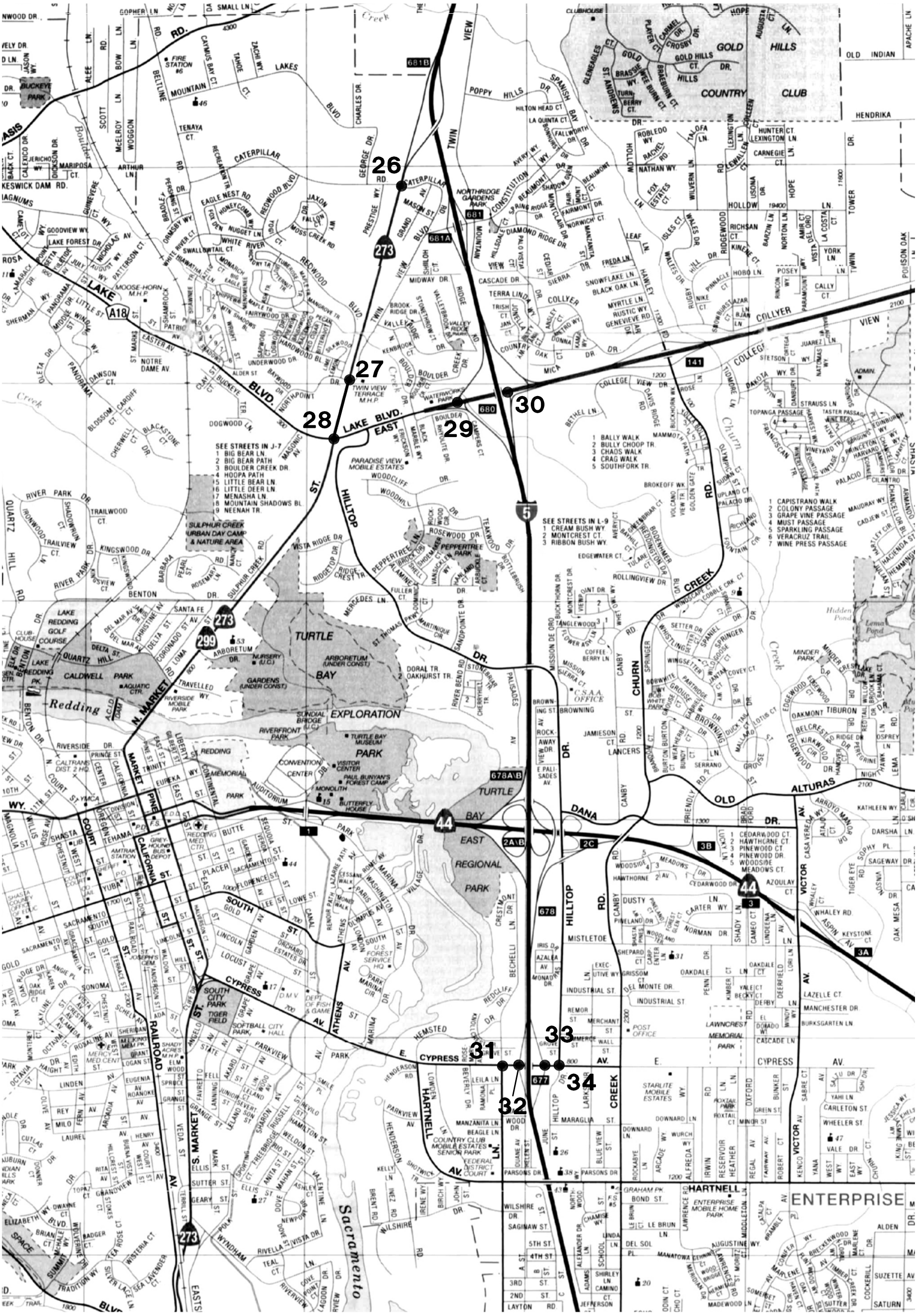
- **= Study Intersection**

Mountain Gate at Shasta Lake

Figure 2B

Northern Study Area - Study Intersections

T946TG03(04AUG06)45–5130–14



Legend:

- = Study Intersection

Mountain Gate at Shasta Lake

Figure 2C

Southern Study Area - Study Intersections

T946TG03(04AUG06)45–5130–14

Roadway Segments:

The following roadway segments, which were selected in coordination with City of Shasta Lake and Caltrans staff, were included for existing, short-term, and cumulative traffic impacts, for conditions both without and with the proposed project.

#	Roadway Segment	Jurisdiction	Acceptable LOS Threshold
1	Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	COSL	C
2	Ashby Rd. - between Fort Peck St. and Flower St.	COSL	C
3	Montana Ave. - between Main St. and Front St.	COSL	C
4	Red Bluff St. - between Washington Ave. and Grand Rive Ave.	COSL	C
5	Main St.- Between Washington Ave. and Grand River Ave.	COSL	C
6	Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	COSL	C
7	Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	COSL	C
8	Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	COSL	C
9	Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	COSL	C
10	Pine Grove Ave. - west of Cascade Blvd.	COSL	C
11	SR273 - between Twin View Blvd. and Lake Blvd.	COR	D

Freeway Mainline Segments:

Caltrans *(based on Guide for the Preparation of Traffic Impact Studies, dated December 2002)* requested that the traffic study analyze all State facilities impacted by 50 or more peak hour project trips. Based on the methodology, the following mainline facilities were found to be impacted by the proposed project and have been analyzed within the study:

1. Mainline I-5 – between Cypress Street and SR 44
2. Mainline I-5 – between SR 44 and SR 299
3. Mainline I-5 – between SR 299 and Twin View Boulevard
4. Mainline I-5 – between Twin View Boulevard and North Market Street (SR 273)
5. Mainline I-5 – between SR 273 and Oasis Road
6. Mainline I-5 – between Oasis Road and Pine Grove Avenue
7. Mainline I-5 – between Pine Grove Avenue and SR 151
8. Mainline I-5 – between SR 151 and Mountain Gate Boulevard

Merge/Diverge Junctions

The following merge/diverge Junctions roadway segments, which were selected in coordination with City of Redding, City of Shasta Lake, and Caltrans staffs were included for existing, short-term, and cumulative traffic impacts, for conditions both without and with the proposed project.

1. I-5 & Cypress Avenue (NB On-Ramp, SB Off-Ramp only)
2. I-5 & SR 44 (NB Loop On-Ramp, NB Direct On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp only)
3. I-5 & SR 273 (NB On-Ramp, SB Off-Ramp only)
4. I-5 & Oasis Road (NB On-Ramp, SB Off-Ramp only)
5. I-5 & SR 151
6. I-5 & Mountain Gate Boulevard

EXISTING TRAFFIC VOLUMES

Intersections

AM and PM peak hour existing intersection turning movement traffic counts for all study intersections were collected by OMNI-MEANS in September and October 2006, when school was in session. Although the holidays will have higher traffic conditions, it is not the industry standard to design transportation facilities to accommodate the holiday traffic. The AM & PM peak hours are typically the most critical time periods in the opinion of drivers due to the need for commute traffic to flow effectively. The traditional AM and PM peak hours were selected in co-ordination with the City of Shasta Lake and Caltrans. Based on the 24-hr ADT counts collected by OMNI-MEANS on the study roadway segments, the peak hours based on the counts matched the peak hours selected for analysis. The AM peak hour is defined as one-hour of peak traffic flow counted between 7:00 AM and 9:00 AM; the PM peak hour is defined as one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM. The Caltrans 2004 hourly counts on I-5, 0.8 mile north of the Mountain Gate Boulevard interchange were analyzed to compare the September traffic (when counts were done) to the summer traffic (months of May, June and July) and the data is presented in **Table 1**.

TABLE 1
I-5 COUNTS COMPARISON

	ADT
Weekday Average in May 2004	21,020
Weekday Average in June 2004	23,778
Weekday Average in July 2004	27,471
Summer Weekday Average 2004	**24,090**
September Weekday Average 2004	**25,963**

As shown in the above table, the September weekday ADT was found to be higher than the summer average ADT and is considered appropriate for this study.

Roadways

The ADT counts for the study roadway segments were collected by OMNI-MEANS in September and October 2006, on days when schools were in session.

Freeway Segments

Freeway mainline volumes were derived from the Caltrans count data available at http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2006all/r005-6i.htm. A 1.5% per year growth rate was applied to the year 2006 data to reflect year 2007 volumes. A spot check of the AADT's on I-5 in Shasta County, between 2003 and 2006, reveals a 0.3% - 1.5% average annual growth rate. 1.5% was used to derive the 2007 volumes to be conservative.

The existing freeway peak hour volumes were derived based "k" and "d" factors from 2004 Caltrans traffic data. The definition of AADT on the Caltrans website is defined as follows:

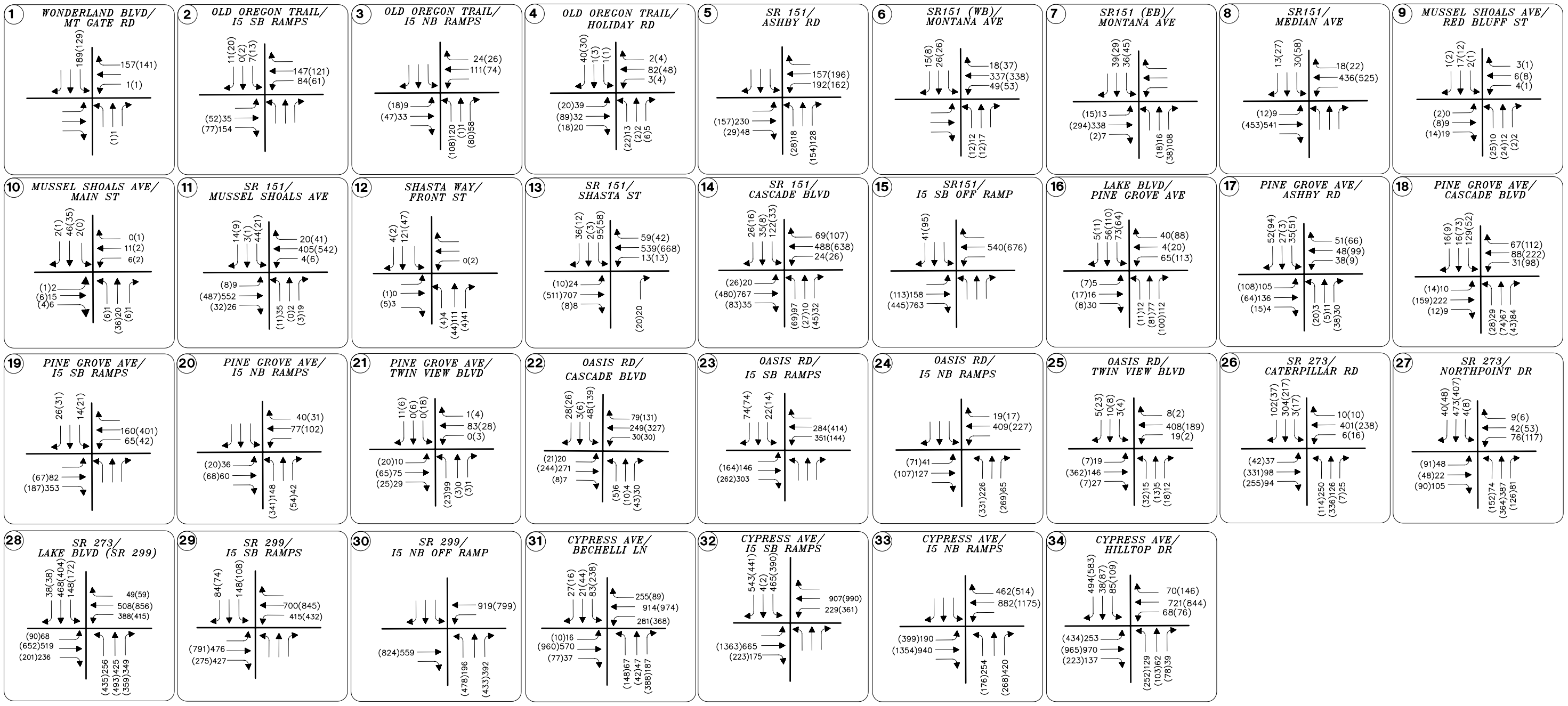
> "Annual average daily traffic is the total volume for the year divided by 365 days. The traffic count year is from October 1st through September 30th. Very few locations in California are actually counted continuously. Traffic Counting is generally performed by electronic counting instruments moved from location throughout the State in a program of continuous traffic count sampling. The resulting counts are adjusted to an estimate of annual average daily traffic by compensating for seasonal influence, weekly variation and other variables, which may be present. Annual ADT is necessary for presenting a statewide picture of traffic flow, evaluating traffic trends, computing accident rates, planning and designing highways and other purposes."

For all other scenarios Year 2010, 2020 and 2030, the Shasta County Regional Model has been used to obtain the freeway mainline volumes.

Freeway Ramps

Existing ramp volume data was obtained from the peak hour counts collected at the various I-5 study interchange locations with the exception of the SR 44 NB on-ramps and SB off-ramps. Data for these facilities was derived using the latest version of the Shasta County Traffic Model in conjunction with the Caltrans count data available at http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/05ramps/d22005ramp.PDF. For all other scenarios Year 2010, 2020 and 2030, the Shasta County Regional Model has been used to obtain the freeway ramp volumes.

Figure 3A shows the existing peak hour intersection traffic volumes, while **Figures 3B and 3C** shows the mainline and ramp traffic volumes.



LEGEND:

XXX – AM PEAK HOUR TRAFFIC VOLUMES

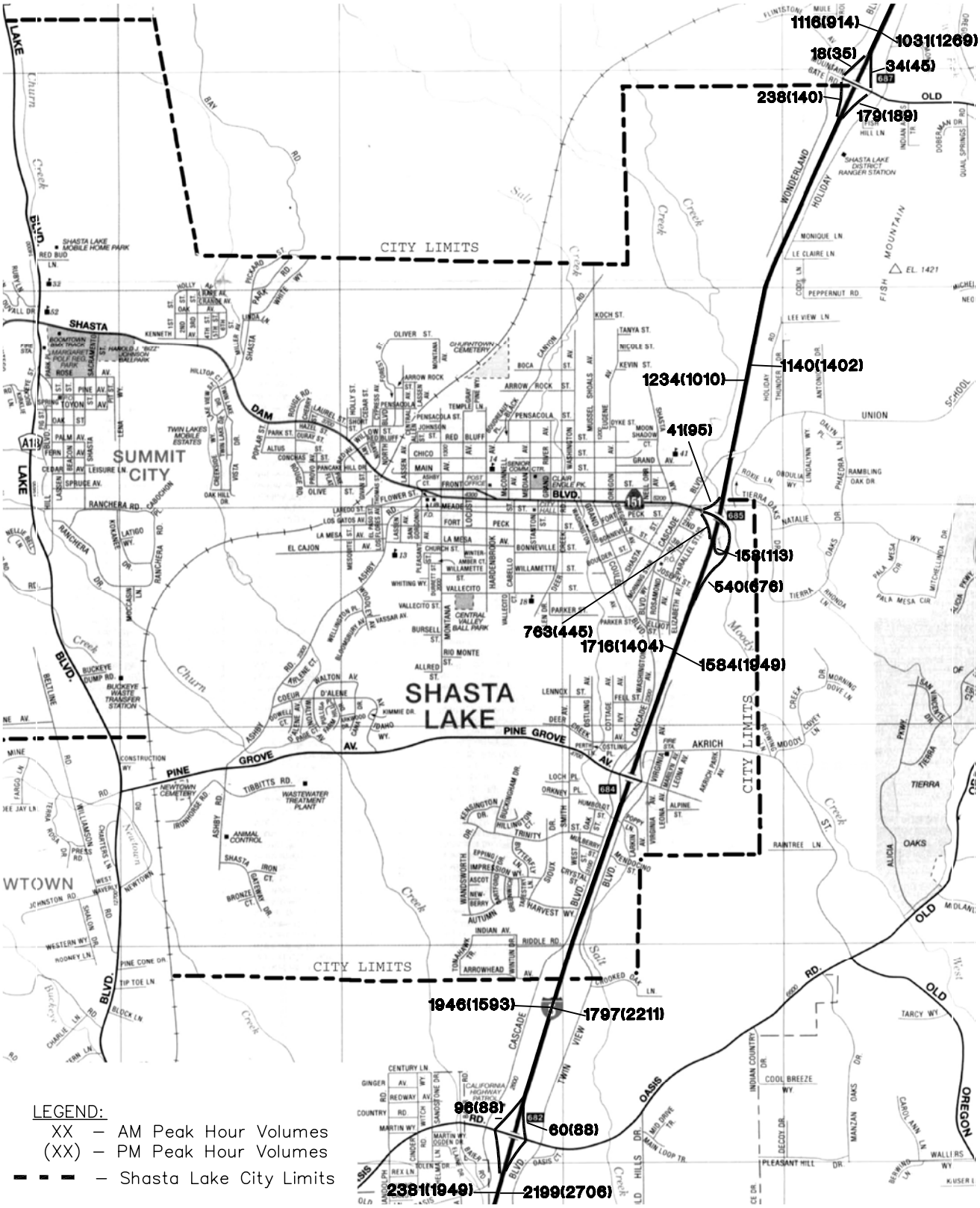
(XXX) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 3a

Existing Peak Hour Intersection Traffic Volumes

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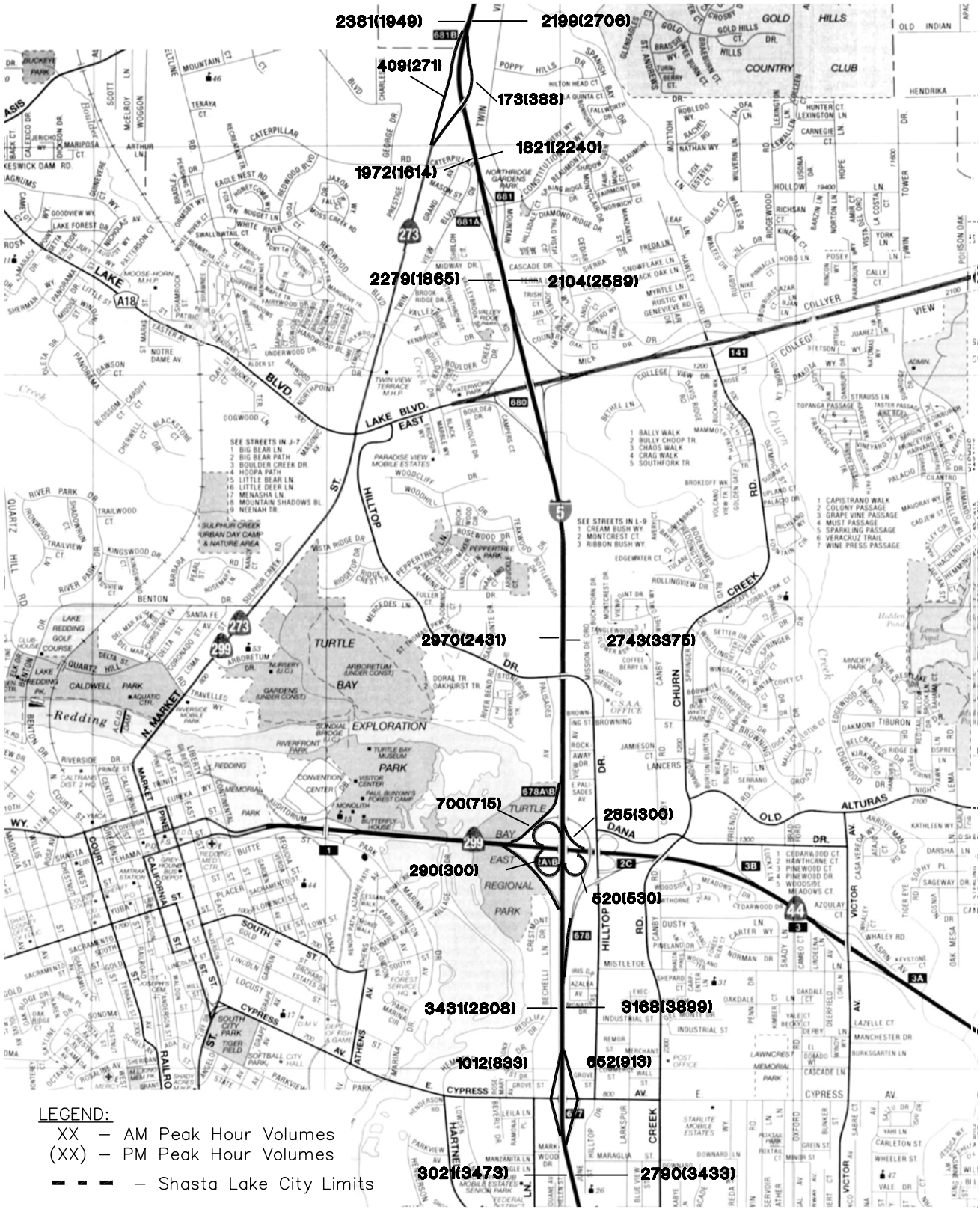


Mountain Gate at Shasta Lake

Figure 3B

Existing Mainline and Ramp Volumes Northern Study Area

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Mountain Gate at Shasta Lake

Figure 3C

Existing Mainline and Ramp Volumes Southern Study Area

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ANALYSIS METHODOLOGIES/POLICIES

GENERAL PLAN CIRCULATION ELEMENT INFORMATION AND POLICIES

City of Shasta Lake

The City of Shasta Lake currently maintains a General Plan Circulation Element that is accessible via the following Internet site: http://www.ci.shasta-lake.ca.us/General%20Plan.pdf. The Circulation Element contains the following policies and implantation measures, which could apply to the proposed project:

- Policy C-a: Monitor, maintain and improve, as necessary, the operation, safety and performance of the street system, including roadway surfaces, capacity, and traffic signals. For capacity and operational purposes, strive to attain a Level of Service (LOS) C, to the maximum degree feasible, so that potential traffic congestion on streets and at intersections is minimized;

- Implementation Measure C-(8): Continue to require that new development pays a fair share of the costs of street and other traffic and transportation improvements based on traffic generated and impacts on service levels;

- Implementation Measure C-(11): Development of vacant parcels will require the developer or property owner to pay a fee that will be used toward the improvement of the "Minor Arterial" and "Collector" streets identified in Circulation Table C-1.

- Implementation Measure C-(14): Development shall mitigate any adverse impacts of a proposed development project on the existing street system. This may include necessary street improvements, traffic signs, or signals.

The City of Shasta Lake adopted Shasta County's *Major Road Impact Fee Program* when the City incorporated. While the City has not updated the list of projects contained in the *Major Road Impact Fee Program*, the fee amount has been increased based upon the increased Consumer Price Index (CPI). Following is the roster of improvements in City of Shasta Lake for Year 2010 based on information contained in the *Major Road Impact Fee Program*:

- *Ashby Road: Realign and widen for two lanes and parking from Shasta Dam Boulevard to Central Valley.*

- *Shasta Dam Boulevard: Install traffic signals in Central Valley.*

- *Old Oregon Trail (Mt. Gate): Reconstruct the freeway interchange.*

- *Cascade Boulevard: Widen for two lanes and parking from on existing alignment from Shasta Dam Boulevard to Pine Grove Avenue.*

- *Pine Grove Avenue: All new construction from Ashby Road to I-5.*

City of Redding

The City of Redding currently maintains its General Plan Transportation Element that is accessible via the following Internet site: http://www.ci.redding.ca.us/devserv/planning/transptn.pdf. The Transportation Element contains the following information of particular interest to this study:

Policy T1A: Establish the following peak-hour LOS standards for transportation planning and project review. They reflect the special circumstances of various areas of the community:

- *Use LOS C – for most arterial streets and their intersections.*
- *Use LOS D – for the Downtown area where vitality, activity, and pedestrian and transit use are primary goals.*
- *Use LOS D – for streets within the State highway system and interchanges.*
- *Use LOS D – for river-crossing street corridors whose capacity is affected by adjacent intersections.*

City of Redding *Capital Improvement Plan* updated December 2005 lists the following improvements at the study intersections/roadways:

- *Caterpillar Road Widening – SR 273 to George Drive:* Widen Caterpillar Road from SR 273 to George Drive to allow for two through lanes, center turn lane/median, and right turn lane at SR 273.

- *Oasis Specific Plan Area Improvements:* Signalization at the Churn Creek Road/Oasis Road intersection, reconstruction of the Oasis Road/Interstate interchange, north/south extensions of Churn Creek Road, construction of a bridge across Churn Creek, Oasis Road area street improvements, signalization of Oasis Road at Gold Hills and I-5 and Cascade Boulevard, widening of the I-5/Oasis Road overcrossing, and realignment of the frontage roads to accommodate the interchange.

- *I-5 – Twin View Boulevard (NB Ramp):* Installation of a traffic signal.

- *I-5 – Twin View Boulevard (SB Ramp):* Installation of a traffic signal.

Shasta County

The County of Shasta currently maintains a General Plan Circulation Element that is accessible via the following Internet site: http://www.co.shasta.ca.us/Departments/Resourcemgmt/drm/pdf/74circ.pdf. The Circulation Element contains the following information of particular interest to this study:

- Figure C-7 identifies the following functional classifications for the roads within the study area:
    - Old Oregon Trail – four lane arterial
- Table RS-1 provides the following definitions and polices for the road classifications
    - Arterial: Provides connections between links in the highway network and connects major destinations with the highway network; access from arterial to adjoining properties should be limited for safety and traffic efficiency. An arterial shall be considered a major thoroughfare. Curbside parking should be prohibited where feasible.
    - Collector: Accommodates traffic between principal arterial, arterial streets and/or activity centers. A collector shall be considered a major thoroughfare. Direct access to individual residential lots should be limited where feasible to improve traffic safety and efficiency.
- Policy C-6k: Shasta County shall adopt the following LOS standards for considering any new roads: Rural arterial and collectors – LOS C
- Policy C-6l: New development which may result in exceeding LOS E on existing facilities, shall demonstrate that all feasible methods of reducing travel demand have been attempted to reach LOS C.

New development shall not be approved unless traffic impacts are adequately mitigated. Such mitigation may take the form of, but not limited to the following:

- Provision of capacity improvements to the specific road link to be impacted, the transit system, or any reasonable combination;
- Provision of demand reduction measures included as part of the project design or project operation or any feasible combination.

- Policy C11e: The County shall assess fees on new development to address the impact of additional development on the County's transportation system.

Following is a list of applicable improvements contained in the Shasta County *Major Road Impact Fee Program*:

- *Old Oregon Trail (Mt. Gate): Reconstruct the freeway interchange.*

Caltrans

The Caltrans published Guide for the Preparation of Traffic Impact Studies (dated December 2002) states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

LEVEL OF SERVICE METHODOLOGIES

Traffic operations are quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment, representing progressively worsening traffic operations.

Levels of Service are calculated for all intersection control types using methods documented in the Transportation Research Board (TRB) Publication *Highway Capacity Manual, Fourth Edition, 2000* (HCM-2000). For Two-Way-Stop-Controlled (TWSC) intersections, the "worst-case" movement delays and LOS are reported, computed based on HCM-2000. For signalized intersections and All-Way-Stop-Controlled (AWSC) intersections, the intersection delays and LOS reported are average values for the whole intersection, computed based on HCM-2000. The Average Daily Traffic (ADT) based roadway segment LOS thresholds, derived using the HCM, are shown in **Table 2A**. The delay-based LOS criteria for different types of intersection control are outlined in **Table 2B**. The vehicle density based LOS criteria used for freeway ramp merges and diverges, and for freeway mainlines, are outlined in **Table 2C** and **Table 2D**. The LOS definitions shown in these tables are used in the traffic study.

Freeway Mainline, Ramp (merge/diverge) junction and Weaving operations have been analyzed using methodologies presented in the *Highway Capacity Manual (HCM 2000)*. The Transportation Research Board (TRB) published *Highway Capacity Software 2000 (HCS-2000), Version 4.1*, was utilized in performing this analysis.

TABLE 2A
LEVEL OF SERVICE CRITERIA FOR ROADWAYS

Roadway Type	Average Daily Traffic (ADT) – Total of Both Directions				
	LOS A	LOS B	LOS C	LOS D	LOS E
6-Lane Expressway (high access control)	36,000	42,000	48,000	54,000	60,000
6-Lane Divided Arterial (with left turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Expressway (high access control)	24,000	28,000	32,000	36,000	40,000
4-Lane Divided Arterial (with left turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Arterial (with left turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Arterial (no left turn lane)	9,000	10,500	12,000	13,500	15,000
4-Lane Collector	12,000	15,000	18,000	21,000	24,000
3-Lane Collector	9,000	11,250	13,500	15,750	18,000
2-Lane Collector	6,000	7,500	9,000	10,500	12,000
Residential collector with frontage [3]	1,600	3,200	4,800	6,400	8,000
Residential [3]	600	1,200	2,000	3,000	4,500

Notes: 1. *Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.*
2. *All volume thresholds are approximate and assume ideal roadway characteristics. Actual thresholds for each LOS listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks and other heavy vehicles, lane widths, signal timing, on-street parking, volume of cross traffic and pedestrians, etc.*
3. *Based on Sacramento County Traffic Impact Guidelines (July 2004)*

TABLE 2B
LEVEL OF SERVICE CRITERIA FOR INTERSECTIONS

LEVEL OF SERVICE	TYPE OF FLOW	DELAY	MANEUVERABILITY	DELAY/VEHICLE (SEC)		
				SIGNALIZED (V/C)	TWO-WAY-STOP	ALL-WAY-STOP
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 0.6	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>0.6 and ≤ 0.7	>10 and ≤ 15.0	>10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>0.7 and ≤ 0.8	>15 and ≤ 25.0	>15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>0.8 and ≤ 0.9	>25 and ≤ 35.0	>25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>0.9 and ≤ 1.0	>35 and ≤ 50.0	>35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 1.0	> 50.0	> 50.0

References: 1. Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.

TABLE 2C
LEVEL OF SERVICE CRITERIA FOR BASIC FREEWAY SEGMENTS

LOS	Density (pc/mi/ln)
A	0 - 11
B	> 11 – 18
C	> 18 – 26
D	> 26 – 35
E	35 – 45
F	> 45

Note: Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.
pc/mi/ln – Passenger Car / Mile / Lane

TABLE 2D
LEVEL OF SERVICE CRITERIA FOR RAMP MERGE AND DIVERGE AREAS

LOS	Density (pc/mi/ln)
A	≤ 10
B	> 10 – 20
C	> 20 – 28
D	> 28 – 35
E	> 35
F	Demand exceeds capacity

Note: Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.
pc/mi/ln – Passenger Car / Mile / Lane

LEVEL OF SERVICE THRESHOLD

Although the City of Shasta Lake is the lead agency, within this study, Shasta County and the City of Redding have standards of significance policies that apply to some of the study facilities being analyzed. Therefore, LOS threshold for each of the facility analyzed in this study was established by giving due consideration to the jurisdiction within which the facility lies.

Based on the discussion provided previously, the following LOS thresholds were established for this study:

City of Shasta Lake

- For all of the intersections and roadway segments that fall within the City of Shasta Lake's jurisdiction, LOS C has been taken as the acceptable/target LOS
- For I-5 mainline segments and ramp merge/diverge junctions that fall within the City of Shasta Lake's city limit line, LOS C has been taken as the acceptable/target LOS

County of Shasta

- For all of the intersections and roadway segments that fall within the County of Shasta jurisdiction, LOS C has been taken as the acceptable/target LOS
- For I-5 mainline segments and ramp merge/diverge junctions that fall within the County of Shasta, LOS C has been taken as the acceptable/target LOS

City of Redding

- For all of the intersections and roadway segments that fall within the City of Redding's jurisdiction, LOS C has been taken as the acceptable/target LOS
- For I-5 mainline segments and ramp merge/diverge junctions that fall within the City of Redding's city limit line, LOS D has been taken as the acceptable/target LOS

- Note that although the acceptable LOS per the City of Redding General Plan at the I-5 ramp intersections with Oasis Road is LOS D, the City has stipulated that the acceptable LOS at the I-5 ramp intersections with Oasis Road is to be LOS C

Base improvements and project-related mitigation measures will be recommended for all instances where appropriate LOS standards are not met.

SIGNIFICANCE THRESHOLD

The City of Shasta Lake does not have "significance threshold" criteria defined. Therefore, the following criteria (practiced by the City of Redding) have been utilized for study locations within this study.

The following thresholds of significance are used to determine if an impact is significant and requires mitigation, for study locations that fall within the City of Redding:

Roadways/Signalized Intersections: The project is considered to have a significant effect if it would:

- Result in a roadway or signalized intersection operating at an acceptable LOS under the base condition (no project) to deteriorate to an unacceptable LOS: or
- Increase the delay by more than 5 seconds at a signalized intersection that is/will operate at an unacceptable LOS without the project.
- Increases the V/C ratio by more that 0.05 at a roadway segment that is/will operate at an unacceptable LOS without the project.

Unsignalized Intersections: The project is considered to have a significant effect if it would:

- Result in an unsignalized intersection movement/approach operating at an acceptable LOS under the base condition (no project) to an unacceptable LOS, and also cause the intersection to meet the peak hour signal warrant: or
- For an unsignalized intersection that meets the signal warrant, increase the delay by more than five seconds at a movement/approach that is operating at an unacceptable LOS without the project.

Freeway Facilities: The significance threshold for freeway facilities will be addressed in the EIR.

TIMING AND FUNDING FOR MITIGATION MEASURES

The City of Shasta Lake does not have "timing and funding for mitigation measures" criteria defined. Therefore, the following criteria (practiced by the City of Redding) will be utilized for study locations within this study.

The following standards are used for this project, for locations that fall within the City of Redding:

- If an intersection or roadway facility is significantly impacted by the proposed project for short-term conditions, and the project's pro-rata share is equal to or above 25 percent, then the project will be required to construct the necessary improvements.

- If an intersection or roadway facility is significantly impacted by the proposed project for the *Short Term* conditions, and the project's pro-rata share is below 25 percent, then the project will be required to pay its pro-rata share of the cost of constructing these improvements.

- Timing and funding of improvements on freeway facilities will be addressed in the EIR.

TECHNICAL ANALYSIS PARAMETERS

The evaluation incorporates appropriate heavy vehicle adjustment factors, peak hour factors, and signal lost-time factors and reports the resulting intersection delays and LOS as estimated using HCM-2000 based analysis methodologies. The specific technical analysis parameters that were used for this study are presented in **Tables 3A** and **3B.**

A "design level" analysis (including queuing on intersection lane groups, stacking length requirements, coordinated signal operations analyses, etc.) is not included in this planning-level study. However, the analysis provides some qualitative and quantitative discussions regarding queuing, stacking length requirements, etc. within descriptions of mitigation and recommended improvements.

TABLE 3A
INTERSECTION TECHNICAL ANALYSIS PARAMETERS

Technical Parameters (1)	Pine Grove Ave./Cascade and I-5 intersections	Oasis Rd./I-5 Ramps	Oasis Rd. Intersections	All Other Intersections
Grade	Level	4%	Level	Level
% Trucks	5%	5%	2%	2%
Peak Hour Factor (2)	0.92	*1*	*1*	0.92
Minimum Signal Cycle Length (3)	80 sec	80 sec	80 sec	80 sec
Lost Time Per Critical Signal Phase	4 sec	4 sec	4 sec	4 sec
Left-Turn Critical Lane Volume (4) –	1,710 vph	1,710 vph	1,710 vph	1,710 vph
Left-Turn Critical Lane Volume (4) –	1,900 vph	1,900 vph	1,900 vph	1,900 vph
Pedestrian Calls Per Hour	5	5	5	5

Notes:

1. Computer software defaults will be used for parameters not listed.

2. Consistent with the assumptions utilized within Redding Oasis Center Final Master Environmental Impact Report, a Peak Hour Factor of 1.0 will be used at the Oasis Rd. intersections within this study.

3. Will be optimized as appropriate.

4. a.k.a. Saturated Flow Rate

TABLE 3B
FREEWAY MAINLINE TECHNICAL ANALYSIS PARAMETERS

TEHNICAL ANALYSIS PARAMETERS	Churn Creek Rd. to Cypress Avenue	Cypress Avenue to SR 44	SR 44 to SR 299	SR 299 to SR 273	SR 273 to Oasis Road	Oasis Road to Pine Grove Avenue	Pine Grove Avenue to SR 151	SR 151 to Mountain Gate Blvd	Mountain Gate Blvd to Fawndale
Lateral Clearance	10'	10'	10'	10'	10'	10'	10'	10'	10'
Lane Width	12'	12'	12'	12'	12'	12'	12'	12'	12'
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level
Peak Hour Factor (Existing and Year 2010)	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Peak Hour Factor (Year 2020 and Year 2030)	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
% Trucks - AM(PM)	14%	14%	14%	14%	17%	18%	24%	28%	28%
Driver Population Factor (Existing and Yesr 2010)	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Driver Population Factor (Year 2020 and year 2030)	1	1	1	1	1	1	1	1	1

NoteNote: 0.88 peak hour factor is reflective of the existing un-congested conditions experienced in the study area.

TRAFFIC SIGNAL WARRANT ANALYSIS CRITERIA

To determine whether "significance" should be associated with unsignalized intersection operations, a supplemental traffic signal "warrant" analysis has also be completed. The term "signal warrants" refers to the list of established criteria used by public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise unsignalized intersection location. Signal warrant criteria are based upon several factors, including the volume of vehicular and pedestrian traffic, frequency of accidents, and location of school areas. This study utilizes the Peak-Hour-Volume based Warrant 3 as one representative type of traffic signal warrant analysis, which is the industry standard, at the planning level, to determine if an unsignalized intersection warrants a traffic signal. The Peak-Hour-Volume based Warrant 3 was chosen as this warrant is a good indicator of whether a signal is required at an intersection. The California MUTCD defines the Peak-Hour-Volume based Warrant 3 as follows:

> "The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street."

It should be noted that the Peak-Hour-Volume Warrant was only applied when the LOS was found to be lower than the acceptable threshold (C or D as applicable). Therefore, there may be instances when the unsignalized intersection operates at acceptable LOS conditions but still meets the Peak-Hour-Volume Warrant.

EXISTING TRAFFIC OPERATIONS

Existing conditions were simulated by using existing intersection and roadway traffic volumes.

INTERSECTIONS

Existing peak hour intersection traffic operations were analyzed utilizing existing traffic volumes (shown on Figure 3A) and existing intersection lane geometrics and control (shown on Figure 2). **Table 4A** provides a summary of the *Existing* peak hour intersection LOS.

TABLE 4A
EXISTING CONDITIONS INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Wonderland Blvd./Mt Gate Rd.	TWSC	C	9.1	A	no	9.0	A	no
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	10.7	B	no	10.4	B	no
3	Mountain Gate Rd./I5 NB Ramps	TWSC	C	10.8	B	no	10.8	B	no
4	Old Oregon Trail/Holiday Rd.	TWSC	C	10.4	B	no	10.4	B	no
5	SR151/Ashby Rd.	TWSC	C	12.0	B	no	11.4	B	no
6	SR151(WB)/Montana Ave.	TWSC	C	13.8	B	no	13.9	B	no
7	SR151(EB)/Montana Ave.	TWSC	C	15.3	C	no	13.3	B	no
8	SR151/Median Ave.	TWSC	C	20.4	C	no	24.7	C	no
9	Mussel Shoals Ave./Red Bluff St.	AWSC	C	7.0	A	no	7.2	A	no
10	Mussel Shoals Ave./Main St.	AWSC	C	7.2	A	no	7.2	A	no
11	**SR151/Mussel Shoals Ave.**	**TWSC**	**C**	**29.6**	**D**	**no**	**33.6**	**D**	**no**
12	Shasta Way/Front St.	TWSC	C	9.0	A	no	9.4	A	no
13	**SR151/Shasta St.**	**TWSC**	**C**	**328.8**	**F**	**YES**	**86.7**	**F**	**no**
14	SR151/Cascade Blvd.	Signal	C	24.5	C	-	21.7	C	-
15	SR151/I5 SB Off Ramp	Signal	C	10.5	B	-	12.0	B	-
16	Lake Blvd/Pine Grove Ave.	TWSC	C	12.3	B	no	14.4	B	no
17	Pine Grove Ave/Ashby Rd.	TWSC	C	12.6	B	no	11.5	B	no
18	**Pine Grove Ave./Cascade Blvd.**	**TWSC**	**C**	**22.4**	**C**	**no**	**33.8**	**D**	**no**
19	Pine Grove Ave./I5 SB Ramps	TWSC	C	10.6	B	no	13.3	B	no
20	Pine Grove Ave./I5 NB Ramps	TWSC	C	12.1	B	no	17.5	C	no
21	Pine Grove Ave./Twin View Blvd.	TWSC	C	10.3	B	no	10.7	B	no
22	**Oasis Rd./Cascade Blvd.**	**TWSC**	**C**	**25.5**	**D**	**no**	**33.0**	**D**	**no**
23	Oasis Rd./I5 SB Ramps	TWSC	C	22.3	C	no	14.7	B	no
24	**Oasis Rd./I5 NB Ramps**	**TWSC**	**C**	**29.8**	**D**	**no**	**68.8**	**F**	**YES**
25	Oasis Rd./Twin View Blvd.	TWSC	C	14.2	B	no	14.5	B	no
26	SR273/Caterpillar Rd.	Signal	D	31.2	C	-	26.4	C	-
27	SR273/Northpoint Dr.	Signal	D	16.7	B	-	21.8	C	-
28	SR273/Lake Blvd. (SR299)	Signal	D	26.5	C	-	36.6	D	-
29	SR299/I5 SB Ramps	Signal	D	10.4	B	-	12.1	B	-
30	SR299/I5 NB Ramps	Signal	D	18.8	B	-	18.1	B	-
31	Cypress Ave./Bechelli Ln.	Signal	C	21.0	C	-	30.5	C	-
32	Cypress Ave./I5 SB Ramps	Signal	D	15.9	B	-	22.4	C	-
33	Cypress Ave./I5 NB Ramps	Signal	D	17.4	B	-	19.6	B	-
34	Cypress Ave./Hilltop Dr.	Signal	C	22.9	C	-	28.1	C	-

Notes: Bolded and highlighted entries indicate intersections operating at unacceptable LOS

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant, Delay in seconds

As shown in Table 4A, majority of the study intersections were found to be currently operating acceptably for the AM and PM peak hour periods, with the following exceptions:

- *SR 151/Mussel Shoals Avenue*: This unsignalized intersection is currently operating at unacceptable LOS D conditions during the AM and PM peak hour periods under *Existing* conditions. However, this intersection does not meet the peak hour warrant criteria during the AM and PM peak hour period.

- *SR 151/Shasta Street:* This unsignalized intersection is currently operating at unacceptable LOS F conditions during the AM and PM peak hour periods under *Existing* conditions. Moreover, this intersection meets the warrant criteria during the AM peak hour period.

- *Pine Grove Avenue/Cascade Boulevard*: This unsignalized intersection is currently operating at unacceptable LOS D conditions during the PM peak hour period under *Existing* conditions. However, this intersection does not meet the peak hour warrant criteria during the AM and PM peak hour period.

- *Oasis Road/Cascade Boulevard*: This unsignalized intersection is currently operating at unacceptable LOS D conditions during both the AM and PM peak hour periods under *Existing* conditions. However, this intersection does not meet the peak hour warrant criteria during both the AM and PM peak hour periods.

- *Oasis Road/I-5 NB Ramps*: This unsignalized intersection is currently operating at unacceptable LOS D and F during the AM and PM peak hour periods, respectively. Moreover, this intersection meets the warrant criteria during the PM peak hour period.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Existing daily traffic operations along roadway segments were analyzed by comparing *Existing* ADT volumes to the ADT-based LOS thresholds (outlined in Table 1) that corresponds to the *Existing* roadway type. **Table 4B** contains a summary of the *Existing* roadway segment LOS conditions.

TABLE 4B
EXISTING CONDITIONS ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	6,753	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	3,974	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,392	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	387	A
Main St.- Between Washington Ave. and Grand River Ave.	Residential	517	A
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector with Frontages	1,275	A
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	1,361	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	4,091	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	3,666	A
Pine Grove Ave. - west of Cascade Blvd.	2-Lane Undivided Arterial	3,977	A
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	11,562	A

As indicated in Table 4B, all of the study roadway segments were found to be currently operating acceptably at LOS A on a daily basis with the existing capacity configurations.

FREEWAY MAINLINE SEGMENTS

Existing peak hour mainline operations were evaluated utilizing the existing peak hour volumes shown on Figure 3B. Table 4C summarizes *Existing* conditions' I-5 freeway mainline operations.

TABLE 4C
EXISTING CONDITIONS FREEWAY MAINLINE LEVELS OF SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	2,790	28.2	D	**3,433**	**41.2**	**E**
I-5 SB, south of Cypress Avenue I/C	2	D	3,021	31.9	D	2,473	24.2	C
I-5 NB, north of Cypress Avenue I/C	3	D	3,168	23.3	C	3,899	30.5	D
I-5 SB, north of Cypress Avenue I/C	3	D	3,431	25.5	C	2,808	20.4	C
I-5 NB, north of SR 44 I/C	**2**	**D**	2,743	27.6	D	**3,375**	**39.5**	**E**
I-5 SB, north of SR 44 I/C	2	D	2,970	31.0	D	2,431	23.7	C
I-5 NB, north of SR 299 I/C	2	D	2,104	20.3	C	2,589	25.6	C
I-5 SB, north of SR 299 I/C	2	D	2,279	22.1	C	1,865	18.0	B
I-5 NB, north of Twin View Blvd I/C	2	D	1,821	17.6	B	2,240	21.7	C
I-5 SB, north of Twin View Blvd I/C	2	D	1,972	19.0	C	1,614	15.6	B
I-5 NB, north of SR 273 I/C	3	D	2,199	14.3	B	2,706	17.7	B
I-5 SB, north of SR 273 I/C	3	D	2,381	15.5	B	1,949	12.7	B
I-5 NB, north of Oasis Road I/C	3	D	1,797	12.7	B	2,211	15.6	B
I-5 SB, north of Oasis Road I/C	3	D	1,946	13.7	B	1,593	11.2	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	1,584	11.7	B	1,949	14.2	B
I-5 SB, north of Pine Grove Avenue I/C	3	C	1,716	12.5	B	1,404	10.3	A
I-5 NB, north of SR 151 I/C	2	C	1,140	12.7	B	1,402	15.5	B
I-5 SB, north of SR 151 I/C	2	C	1,234	13.9	B	1,010	11.2	B
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,031	10.7	A	1,269	13.2	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,116	11.6	B	914	9.5	A

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As indicated in Table 4C, all of the study freeway mainline segments were found to be currently operating acceptably for the AM and PM peak hour periods, with the following exceptions:

- I-5 NB, south of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

RAMP JUNCTIONS

Existing ramp merge/diverge operations were evaluated utilizing the existing peak hour traffic volumes shown on Figure 3B. Table 4D summarizes *Existing* conditions' ramp merge/diverge operations.

TABLE 4D
EXISTING CONDITIONS RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	652	19.5	B	913	25.0	C
I-5 SB Off-Ramp	Diverge	D	1,012	26.8	C	833	23.9	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	Merge	D	520	27.1	C	530	33.6	D
I-5 NB Direct On-Ramp	Merge	D	285	20.4	C	530	24.4	C
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**700**	**38.8**	**E**	715	32.5	D
I-5 SB Loop Off-Ramp	Diverge	D	290	34.1	D	300	27.7	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	173	19.1	B	388	24.2	C
I-5 SB Off-Ramp	Diverge	D	409	23.9	C	271	22.8	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	60	12.3	B	88	15.0	B
I-5 SB Off-Ramp	Diverge	D	96	16.8	B	88	14.1	B
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	540	15.4	B	676	19.1	B
I-5 NB On-Ramp	Merge	C	158	8.8	A	113	10.4	B
I-5 SB Off-Ramp	Diverge	C	41	16.0	B	95	13.2	B
I-5 SB On-Ramp	Merge	C	763	15.9	B	445	11.1	B
			AM Peak Hour			**PM Peak Hour**		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	179	18.6	B	189	21.5	C
I-5 NB On-Ramp	Merge	C	34	16.8	B	45	19.5	B
I-5 SB Off-Ramp	Diverge	C	18	17.9	B	35	15.4	B
I-5 SB On-Ramp	Merge	C	238	16.1	B	140	12.8	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As indicated in Table 4D, all of the study ramp merge/diverge junctions are currently operating at acceptable LOS with the following exceptions.

- I-5 & SR 44 - SB Direct Off-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2010 ANALYSIS SCENARIO

The traffic volumes for the Year 2010 analysis were derived from the latest version of the Shasta County Travel Demand Model. The Travel Demand Model for the year 2010 includes the land use information for all of the projects anticipated to be completed by 2010 as shown in **Appendix Table 1A**. The Regional Model does not assume any development in the project site for Year 2010. The land use and the resulting trip generation information for the proposed Mountain Gate at Shasta Lake project was not included in the Travel Demand Model. The difference of the volumes for the *Year 2010* and *Year 2004* (Calibrated Year) obtained from the Travel Demand Model were added to the existing volumes to obtain the *Year 2010 No Project* volumes. The 2010 *Plus Project* condition is the analysis scenario in which traffic impacts associated with the portion of the proposed project that this study assumes to be in place in Year 2010 are investigated in comparison to the *2010 No Project* condition scenario.

To assess the impacts of the Mountain Gate at Shasta Lake project on the study intersections and roadways, the study analyzed the following 2010 scenarios:

- *Year 2010 No Project* conditions
- *Year 2010 Plus Project* conditions

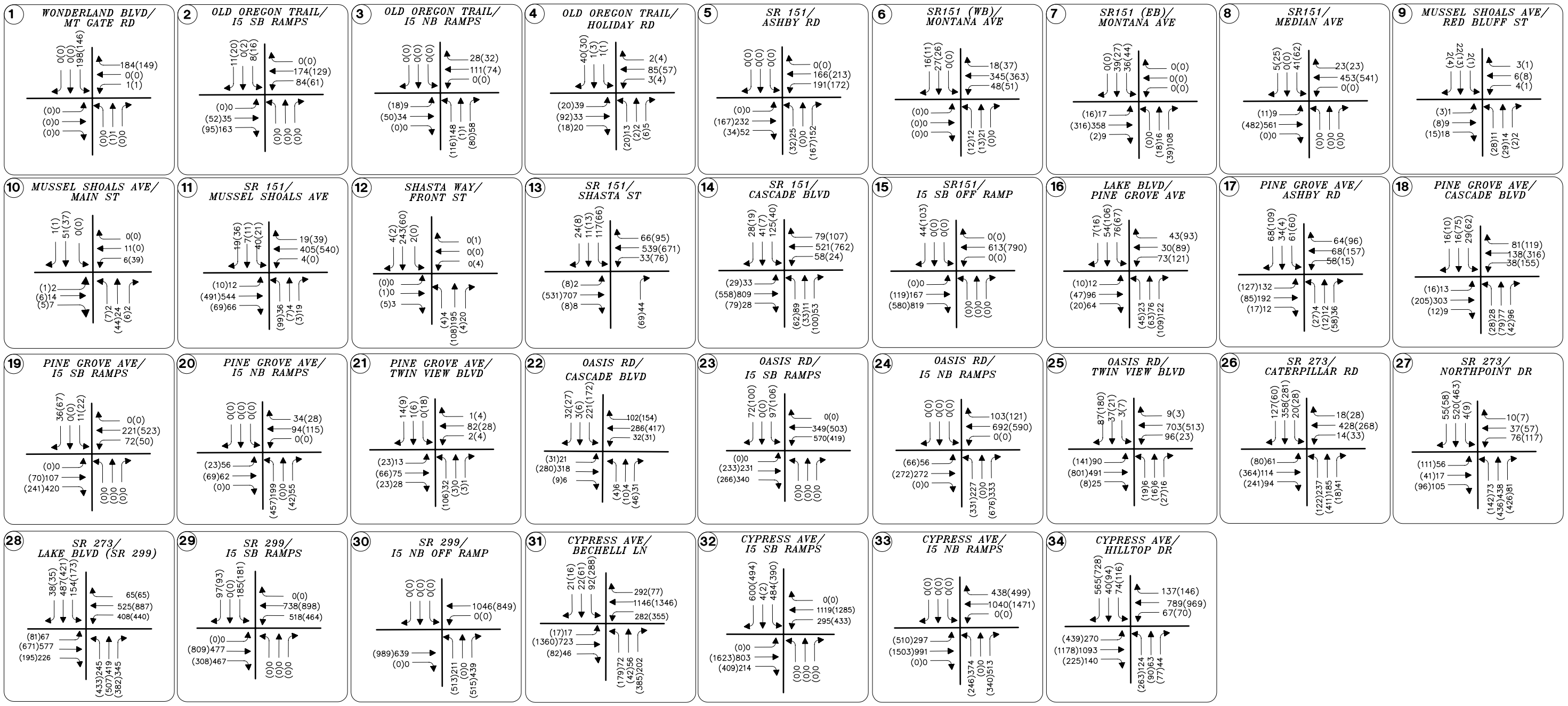
YEAR 2010 ROADWAY IMPROVEMENT PROJECTS (WITHOUT MOUNTAIN GATE AT SHASTA LAKE DEVELOPMENT)

No improvements were assumed to be in place for year 2010 conditions. As such, *Year 2010 No Project* conditions intersection and roadway analysis was performed with the *Existing* lane geometrics and control shown in Figure 2.

YEAR 2010 NO PROJECT CONDITIONS

INTERSECTIONS

Year 2010 No Project peak hour traffic conditions were simulated using the traffic volumes obtained from the Shasta Lake Travel Demand Model. The *Year 2010 No Project* peak hour intersection traffic volumes are shown on **Figure 4A**. *Year 2010 No Project* peak hour intersection operations were quantified utilizing *Existing* conditions lane geometries and control (shown on Figure 2). **Table 5A** provides a summary of the resulting peak hour intersection LOS.



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

(xxx) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 4A

Year 2010 No Project Intersection Traffic Volumes

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TABLE 5A
YEAR 2010 NO PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Wonderland Blvd/Mt Gate Road	TWSC	C	9.2	A	no	9.0	A	no
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	11.2	B	no	10.7	B	no
3	Mountain Gate Rd./I5 NB Ramps	TWSC	C	11.3	B	no	11.0	B	no
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.5	B	no	10.5	B	no
5	SR151/Ashby Road	TWSC	C	12.5	B	no	11.9	B	no
6	SR151(WB)/Montana Avenue	TWSC	C	14.0	B	no	14.3	B	no
7	SR151(EB)/Montana Avenue	TWSC	C	16.0	C	no	13.6	B	no
8	**SR151/Median Avenue**	**TWSC**	**C**	24.7	C	no	**27.4**	**D**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.1	A	no	7.2	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.2	A	no	7.4	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**29.5**	**D**	**no**	**109.1**	**F**	**no**
12	Shasta Way/Front Street	TWSC	C	9.8	A	no	9.8	A	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**621.5**	**F**	**YES**	**471.7**	**F**	**no**
14	SR151/Cascade Blvd	Signal	C	27.1	C	-	21.1	C	-
15	SR151/I5 SB Off Ramp	Signal	C	10.5	B	-	11.2	B	-
16	Lake Blvd/Pine Grove Avenue	TWSC	C	16.8	C	no	24.0	C	no
17	Pine Grove Ave/Ashby Road	TWSC	C	16.9	C	no	13.5	B	no
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**39.5**	**E**	**no**	**163.0**	**F**	**no**
19	Pine Grove Ave/I5 SB Ramps	TWSC	C	11.0	B	no	15.7	C	
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	14.5	B	no	**28.8**	**D**	**YES**
21	Pine Grove Ave/Twin View Blvd.	TWSC	C	10.5	B	no	10.9	B	no
22	**Oasis Rd/Cascade Blvd**	**TWSC**	**C**	**64.0**	**F**	**no**	**88.7**	**F**	**no**
23	**Oasis Rd/I5 SB Ramps**	**TWSC**	**C**	**OVR**	**F**	**YES**	**757.8**	**F**	**YES**
24	**Oasis Rd/I5 NB Ramps**	**TWSC**	**C**	**413.0**	**F**	**YES**	**799.2**	**F**	**YES**
25	**Oasis Rd/Twin View Blvd**	**TWSC**	**C**	**58.6**	**F**	**YES**	**215.8**	**F**	**YES**
26	SR273/Caterpillar Road	Signal	D	32.1	C	-	31.2	C	-
27	SR273/Northpoint Drive	Signal	D	16.4	B	-	19.0	B	-
28	SR273/Lake Blvd (SR299)	Signal	D	29.1	C	-	35.4	D	-
29	SR299/I5 SB Ramps	Signal	D	10.6	B	-	16.1	B	-
30	SR299/I5 NB Ramps	Signal	D	20.1	C	-	19.2	B	-
31	Cypress Avenue/Bechelli Lane	Signal	C	17.9	B	-	32.9	C	-
32	Cypress Avenue/I5 SB Ramps	Signal	D	22.8	C	-	47.1	D	-
33	**Cypress Avenue/I5 NB Ramps**	**Signal**	**D**	29.5	C	-	**55.6**	**E**	-
34	**Cypress Avenue/Hilltop Drive**	**Signal**	**C**	29.4	C	-	**38.5**	**D**	-

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant

As shown in Table 5A, the following intersections are projected to operate at unacceptable LOS at least during one peak hour period:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street (would meet the warrant)
- Pine Grove Avenue/Cascade Boulevard
- Pine Grove Avenue/I-5 NB Ramps (would meet the warrant)
- Oasis Road/Cascade Boulevard

- Oasis Road/I-5 SB Ramps (would meet the warrant)
- Oasis Road/I-5 NB Ramps (would meet the warrant)
- Oasis Road/Twin View Boulevard (would meet the warrant)
- Cypress Avenue/I-5 NB Ramps
- Cypress Avenue/Hilltop Drive

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2010 No Project daily traffic operations along roadway segments were analyzed by comparing *Year 2010 No Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 1) that corresponds to the roadway type assumed for the *Existing* conditions. **Table 5B** contains a summary of the *Year 2010 No Project* roadway segment LOS conditions.

TABLE 5B
YEAR 2010 NO PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	7,040	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	4,280	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,410	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	400	A
Main St.- Between Washington Ave. and Grand River Ave.	Residential	540	A
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector with Frontages	1,390	A
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	2,550	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	5,350	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	3,910	A
Pine Grove Ave. - west of Cascade Blvd.	2-Lane Undivided Arterial	5,490	A
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	12,320	A

As indicated in Table 5B, all of the study roadway segments were found to be currently operating acceptably at LOS A on a daily basis under *Year 2010 No Project* conditions.

FREEWAY MAINLINE SEGMENTS

Year 2010 No Project mainline operations were evaluated utilizing the peak hour volumes shown on **Figure 4B** and **Figure 4C**. **Table 5C** summarizes *Year 2010 No Project* conditions' I-5 freeway mainline operations.

TABLE 5C
YEAR 2010 NO PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

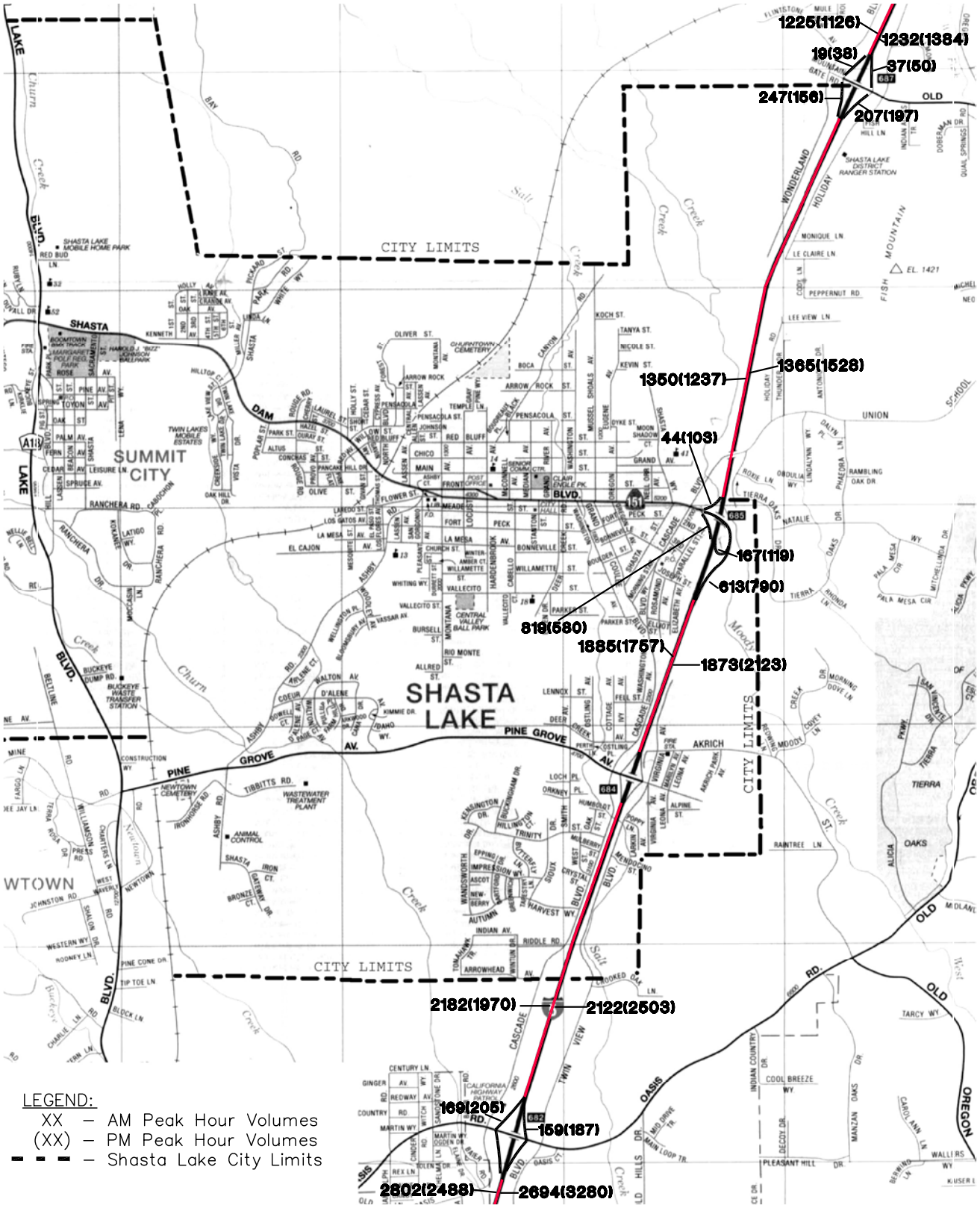
Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**3,335**	**38.5**	**E**	**3,911**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**3,413**	**40.6**	**E**	2,932	30.4	D
I-5 NB, north of Cypress Avenue I/C	**3**	**D**	3,582	27.0	D	**4,333**	**36.8**	**E**
I-5 SB, north of Cypress Avenue I/C	3	D	3,793	29.2	D	2,997	21.9	C
I-5 NB, north of SR 44 I/C	**2**	**D**	3,122	33.7	D	**3,871**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**3,491**	**42.9**	**E**	2,864	29.3	D
I-5 NB, north of SR 299 I/C	2	D	2,527	24.8	C	3,012	31.7	D
I-5 SB, north of SR 299 I/C	2	D	2,708	27.1	D	2,324	22.6	C
I-5 NB, north of Twin View Blvd I/C	2	D	2,226	21.5	C	2,682	26.8	D
I-5 SB, north of Twin View Blvd I/C	2	D	2,298	22.3	C	2,054	19.8	C
I-5 NB, north of SR 273 I/C	3	D	2,694	17.6	B	3,280	21.5	C
I-5 SB, north of SR 273 I/C	3	D	2,802	18.3	C	2,488	16.2	B
I-5 NB, north of Oasis Road I/C	3	D	2,122	15.0	B	2,503	17.7	B
I-5 SB, north of Oasis Road I/C	3	D	2,182	15.4	B	1,970	13.9	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	1,873	13.9	B	2,123	15.4	B
I-5 SB, north of Pine Grove Avenue I/C	3	C	1,885	13.8	B	1,757	12.9	B
I-5 NB, north of SR 151 I/C	2	C	1,365	15.3	B	1,528	16.9	B
I-5 SB, north of SR 151 I/C	2	C	1,350	15.2	B	1,237	13.7	B
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,232	12.8	B	1,384	14.4	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,225	12.7	B	1,126	11.7	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As indicated in Table 5C, the following freeway mainline segments were projected to operate at unacceptable LOS for the AM and PM peak hour periods:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

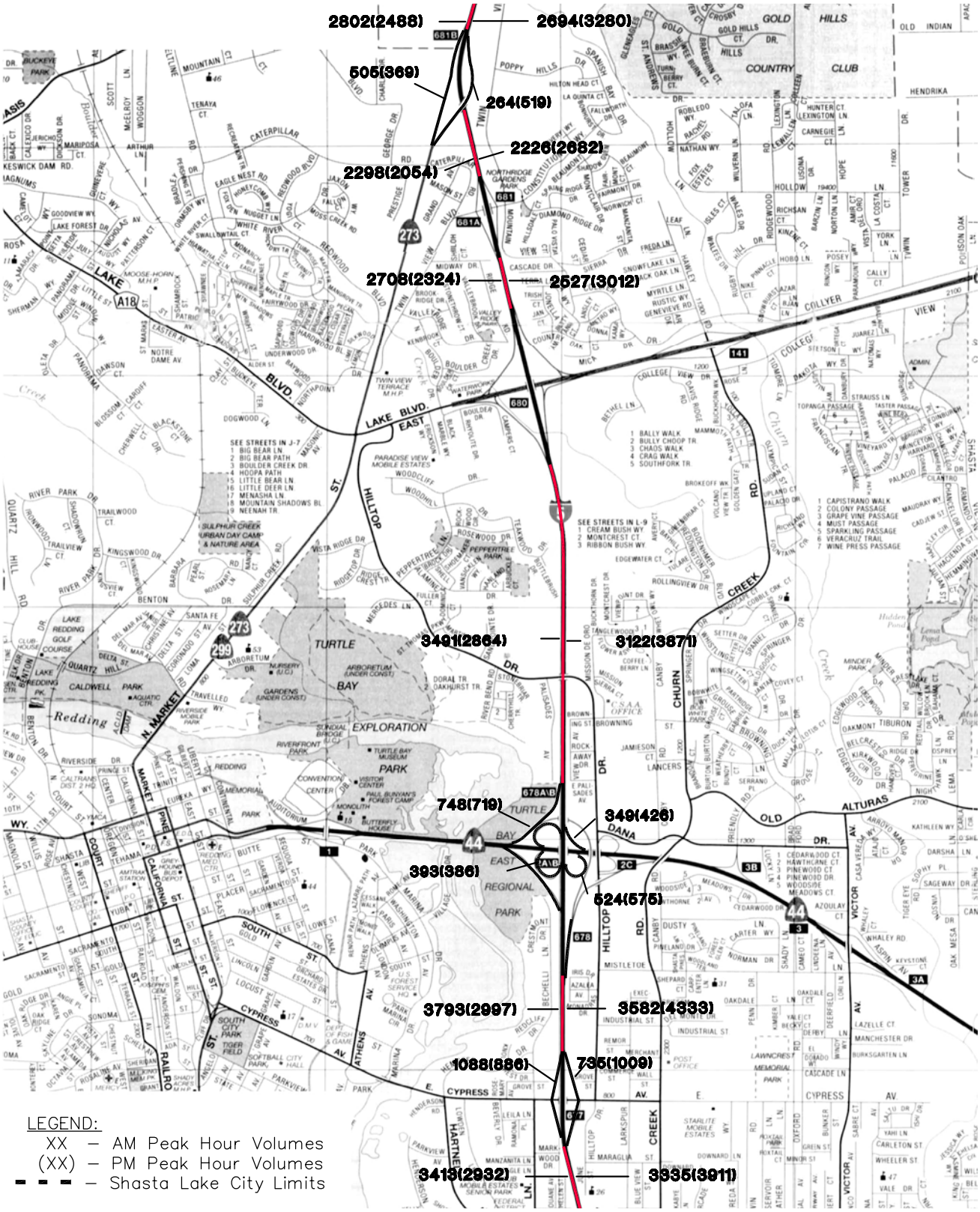


Mountain Gate at Shasta Lake

Figure 4B

2010 No Project Mainline & Ramp Volumes Northern Study Area

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Mountain Gate at Shasta Lake

Figure 4C

2010 No Project Mainline & Ramp Volumes Southern Study Area

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RAMP JUNCTIONS

Year 2010 No Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figure 5B. **Table 5D** summarizes *Year 2010 No Project* conditions' ramp merge/diverge operations.

TABLE 5D
YEAR 2010 NO PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	735	22.4	C	1,009	28.1	C
I-5 SB Off-Ramp	Diverge	D	1,088	29.1	D	886	25.3	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	**Merge**	**D**	524	30.4	D	**575**	**37.4**	**F**
I-5 NB Direct On-Ramp	Merge	D	349	22.9	C	656	27.9	C
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**748**	**44.8**	**F**	**719**	**37.5**	**E**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**393**	**39.6**	**E**	386	32.7	D
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	264	24.2	C	519	30.1	D
I-5 SB Off-Ramp	Diverge	D	505	27.0	C	369	24.6	D
			AM Peak Hour			**PM Peak Hour**		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	159	14.7	B	187	17.2	B
I-5 SB Off-Ramp	Diverge	D	169	18.6	B	206	17.2	B
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	613	17.8	B	790	21.1	C
I-5 NB On-Ramp	Merge	C	167	10.3	B	119	11.2	B
I-5 SB Off-Ramp	Diverge	C	44	17.4	B	103	16.0	B
I-5 SB On-Ramp	Merge	C	819	17.2	B	580	13.8	B
			AM Peak Hour			**PM Peak Hour**		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	207	21.4	C	197	23.0	C
I-5 NB On-Ramp	Merge	C	37	19.1	B	50	20.7	C
I-5 SB Off-Ramp	Diverge	C	19	19.2	B	38	18.0	B
I-5 SB On-Ramp	Merge	C	247	17.4	B	156	15.2	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As indicated in Table 5D, the following ramp merge/diverge, junctions are projected to operate at unacceptable LOS conditions at least during one peak hour period under *Year 2010 No Project* conditions:

- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp and SB Loop Off-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

PROPOSED PROJECT

PROJECT DESCRIPTION

The proposed Mountain Gate at Shasta Lake project is located within 592 acres of vacant land in the north most part of the City of Shasta Lake, near the community of Mountain Gate, and west of I-5. Per the current *City of Shasta Lake General Plan*, a major portion of the site is designated as mixed-use (MU) and a minor portion is designated as commercial. The requested action associated with the proposed project is a subdivision and various lot line adjustments. The project's site plan is shown on **Figure 5**.

For traffic analysis purposes, this study assumes that the project would develop ±273 residential units and ±7,500 sq. ft. of commercial used by year 2010. Further details containing a break down of residential units and commercial development are outlined below:

Residential Units (By Year 2010)

- Small Lot – 45 units
- Medium Lot – 45 units
- Large Lot – 80 units
- Multi Family – 45 units
- Alley Loaded – 16 units
- Green Court – 22 units
- Apartment – 20 units

Commercial Units (By Year 2010)

- Professional Office – 2,500 sq. ft
- Small Retail – 5,000 sq. ft

For traffic analysis purposes, it is assumed that the project will add ±1331 residential units, ±12,500 sq. ft. of office space and ±215,000 sq. ft. of retail by the year 2020. Thus, upon build-out, the Mountain Gate at Shasta Lake project would include ±1,604 residential units and ±220,000 sq. ft commercial space, ±15,000 sq. ft. of office space and a ±16-acre park. Detailed description containing a break down of residential units and commercial space associated with the build-out of the project is outlined below:

Residential Units (Build out)

- Small Lot – 261 units
- Medium Lot – 229 units
- Large Lot – 200 units
- Multi Family – 175 units
- Town Home – 151 units
- Alley Loaded – 196 units
- Green Court – 156 units
- Apartment – 236 units

Commercial Units (Build out)

- Professional Office – 15,000 sq. ft.
- Small Retail – 100,000 sq. ft.
- Large Retail – 120,000 sq. ft.



Mountain Gate at Shasta Lake

Figure 5

Project Site Plan

T946TG28.DWG(22MAR07)45-5130-14

PROJECT TRIP GENERATION

Table 6 provides a summary of trip generation characteristics for the proposed Mountain Gate at Shasta Lake project for Year 2010 conditions and **Table 7** presents a summary of trip generation characteristics for build out conditions.

Year 2010 Trip Generation

Due to the relatively smaller amount of development for Year 2010 conditions, project site trip generation for Year 2010 conditions utilizing trip generation rates contained in the Institute of Transportation Engineers (ITE) Publication *Trip Generation (Seventh Edition)*. "Single Family Detached Housing" bearing ITE use code 210, "Apartment" bearing ITE use code 220 and "Townhouse" bearing use code 230 were used to estimate the trips from the residential component of the project. "General Office Building" bearing code 720 and "Shopping Center" bearing code 820 were used to estimate trips from professional office and commercial space, respectively. Fitted curve equations were used for office, shopping Center, and the Townhouse land uses, while average rates were used for Single-family detached housing and apartment land uses to establish trip generation for the proposed project.

TABLE 6
YEAR 2010 PROJECT TRIP GENERATION

ITE Land Use Category (ITE Code)	Unit	Daily Trip Rate/Unit	Weekday AM Peak Rate/Unit			Weekday PM Peak Rate/Unit		
			Total	In	Out	Total	In	Out
General Office Building (710) [1]	Per KSF	31.20	4.00	88%	12%	32.80	17%	83%
Shopping Center (820) [1]	Per KSF	193.80	5.20	61%	39%	17.40	48%	52%
Single-Family Detached Housing (210)	Per d.u.	9.57	0.75	25%	75%	1.01	63%	37%
Apartment (220)	Per d.u.	6.72	0.51	20%	80%	0.62	65%	35%
Land Use Description	**Quantity**	**Daily Trips**	**Weekday AM Peak Hour Trips**			**Weekday PM Peak Hour Trips**		
			Total	In	Out	Total	In	Out
Professional Office	2.5	78	10	9	1	82	14	68
Commercial	5	969	26	16	10	87	42	45
Total Commercial - Before Pass-By		969	26	16	10	87	42	45
Commercial - 15% Pass-By for Daily		145						
Commercial - 25% Pass-By for Peak Periods			6	4	2	21	10	11
Commercial (After Pass-By) [3]		824	20	12	8	66	31	35
Single Family - Residential	208	1,991	156	39	117	210	132	78
Multi Family - Residential	65	437	33	7	27	40	26	14
Total Trips		**3,329**	**219**	**67**	**153**	**398**	**204**	**195**

Notes:
KSF = 1000 square feet
d.u. = dwelling unit
[1] = The ITE description for General Office Building is included in the Appendix
[2] = The ITE description for Shopping Center is included in the appendix
[3] = Refer to the Appendix for more information on Pass-By

As shown in Table 6, it is estimated that the portion of the proposed project that this study assumes to be in place in Year 2010 will generate 3,329 weekday daily trips, 219 of which would occur during the AM peak hour, and 398 of which would occur during the PM peak hour.

Build Out Conditions Trip Generation

Project site trip generation for build-out conditions has been estimated using Shasta County Travel Demand Model. Further details on the methodology is provided within the appendix towards the end of the report. The trip generation methodology has been approved by City staff in August 2007.

TABLE 7
BUILD OUT PROJECT TRIP GENERATION

Land Use Description	Unit	Daily Trip Rate/Unit	Weekday AM Peak Rate/Unit Total	In	Out	Weekday PM Peak Rate/Unit Total	In	Out
Professional Office	Per KSF	10.73	1.20	83%	17%	1.27	21%	79%
Retail	Per KSF	51.63	3.37	60%	40%	4.65	41%	59%
Park	Per KSF	83.38	7.81	71%	29%	7.25	38%	62%
Single Family - Residential	Per Acre	8.63	0.87	28%	72%	0.83	68%	32%
Multi Family	Per d.u.	7.80	0.81	28%	72%	0.76	68%	32%

Land Use Description	Quantity	Daily Trips	Weekday AM Peak Hour Trips Total	In	Out	Weekday PM Peak Hour Trips Total	In	Out
Professional Office	15	161	18	15	3	19	4	15
Retail	220	11,359	742	442	300	1,024	423	601
Park	16	1,334	125	89	36	116	44	72
Single Family - Residential	1,042	8,992	910	251	659	869	593	276
Multi Family - Residential	416	3,244	337	96	241	316	214	102
Total Project Trips [1]		*25,090*	*2,132*	*893*	*1,239*	*2,344*	*1,278*	*1,066*
Internal Project Trips								
Professional Office		31	3	3	0	3	0	3
Retail		2,200	117	70	47	227	94	133
Park		298	25	18	7	26	10	16
Single Family - Residential		1,607	185	53	132	113	76	37
Multi Family - Residential		614	60	17	43	60	40	20
Total Internal Project Trips		*4,750*	*390*	*161*	*229*	*429*	*220*	*209*
External Project Trips								
Professional Office		130	15	12	3	16	4	12
Retail		9,159	625	372	253	797	329	468
Park		1,036	100	71	29	90	34	56
Single Family - Residential		7,385	725	198	527	756	517	239
Multi Family - Residential		2,630	277	79	198	256	174	82
Total External Project Trips		20,340	1,742	732	1,010	1,915	1,058	857
Pass-By/Diverter Link Trips								
Commercial - 10% Pass-By		916	62	37	25	80	33	47
Total Pass-By [4]		916	62	37	25	80	33	47
Net New Project Trip Generation		***19,424***	***1,680***	***695***	***985***	***1,835***	***1,025***	***810***

As shown in Table 7, it is estimated that complete buildout of the proposed Mountain Gate at Shasta Lake project will generate 19,424 weekday daily trips, 1,680 of which would occur during the AM peak hour, and 1,835 of which would occur during the PM peak hour.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The directional trip distribution and assignment of project-generated trips was estimated based on an Shasta County Travel Demand Model and understanding of existing and projected future traffic flows and travel patterns within the vicinity of the project site, location of local and regional housing and employment/commercial centers in relation to the proposed project site. The trip distribution assumptions were approved by the City of Shasta Lake staff. **Figures 6A** and **6B** show the anticipated directional trip distribution for the proposed residential development, while **Figures 6C** and **6D** show the anticipated directional trip distribution for the proposed commercial development. Note that these figures depict the trip distribution characteristics with the proposed southerly extension in place. As will be noted later, access to the project site for Year 2010 conditions will be entirely off Mountain Gate Boulevard. Hence, for Year 2010

conditions, the trip distribution would be the same as that shown in Figures 6 A through D, but all of the project traffic would be assigned to Mountain Gate Boulevard.

Figure 7A shows the resulting project trips along the effected turning movements at study intersections, while and **Figures 7B** and **7C** shows the project trips for the study mainline segments and ramp junctions for Year 2010 conditions.

Similarly, **Figure 8A** shows the resulting project trips along the effected turning movements at study intersections, while and **Figures 8B** and **8C** shows the project trips for the study mainline segments and ramp junctions for Year 2020 and 2030 conditions, which assumes full buildout of the project.

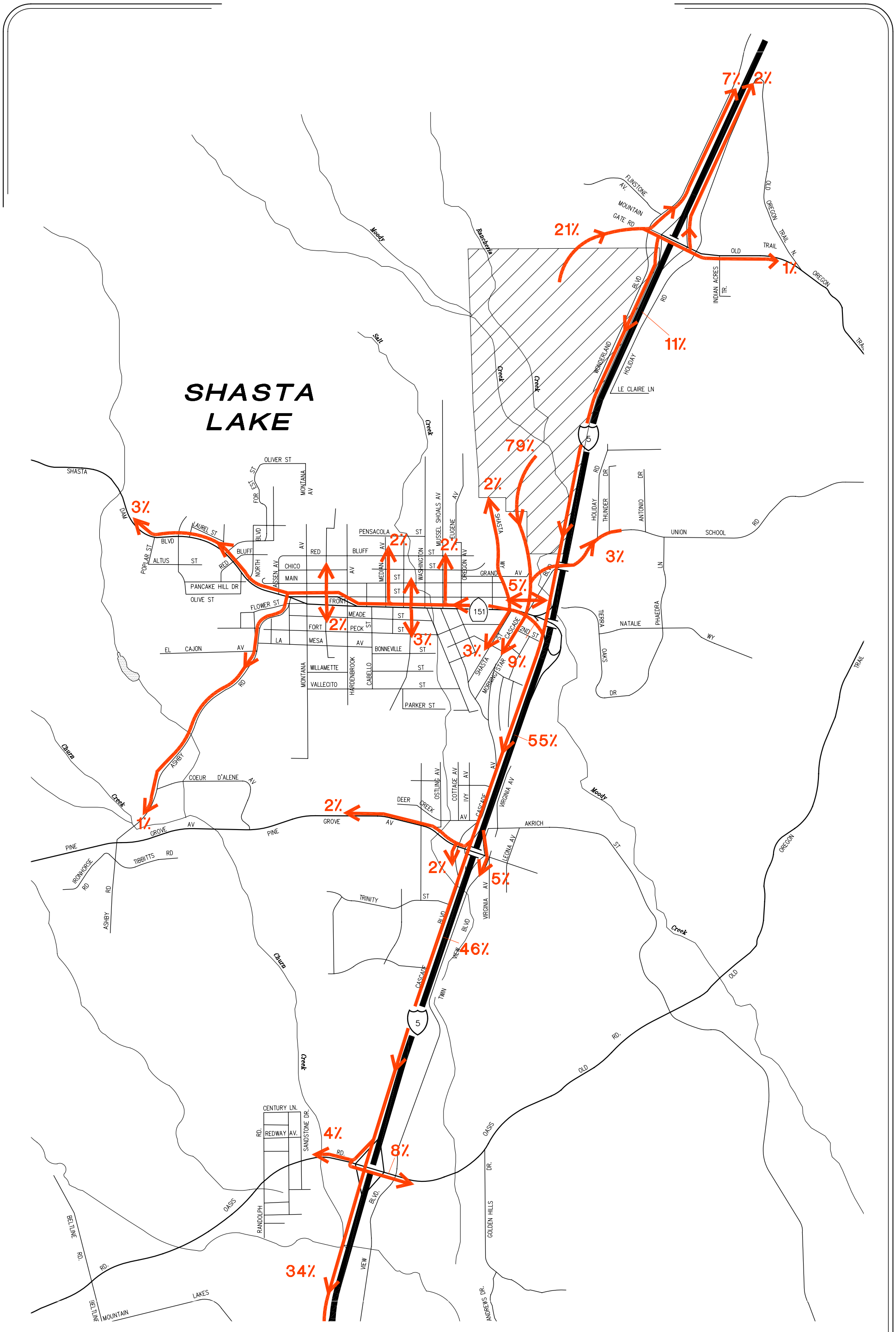
PROJECT SITE ACCESS

For Year 2010 conditions, access to the entire project site would be via a southerly extension of Wonderland Boulevard, which currently ties into Mountain Gate Boulevard.

For Year 2020 and Year 2030 conditions, which assume full build-out of the project site, access to the project site would be via two access points as discussed below:

- Access to Mountain Gate Boulevard would be via the southerly extension of Wonderland Boulevard (similar to Year 2010 conditions)
- Additionally, it is assumed that the southerly extension of Wonderland Boulevard would extend further eventually tying into Cascade Boulevard in the south.
- Note that an alternative in which the southerly extension of Wonderland Boulevard would extend further eventually tying into Shasta Street is discussed as a "potential mitigation alternative" for improving the operations along the SR 151 corridor within the *Recommendations/Mitigations* section of this report.

For Year 2020 and Year 2030 conditions, an alternative is analyzed for a secondary access to the site via a northeasterly extension of Black Canyon Road. The impact(s) to the study facilities due to this alternative is provided as a stand alone section in a subsequent section of the report.



Mountain Gate at Shasta - TIAR

Figure 6A

Residential Trip Distributions - Northern Section

T946TG04(07AUG2007)

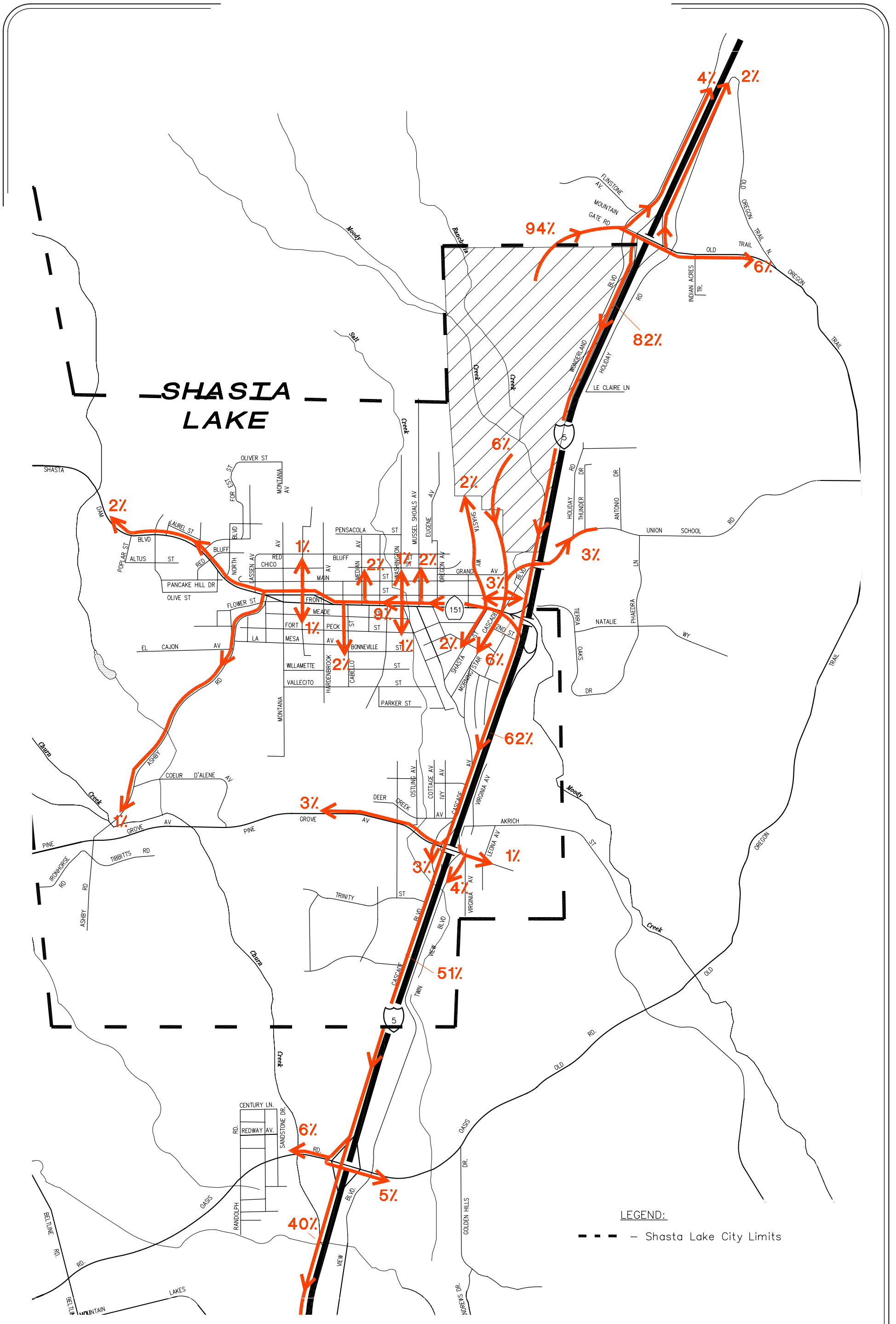


Mountain Gate at Shasta Lake

Figure 6B

Residential Trip Distributions - Southern Section

T946TG04(07AUG2007)

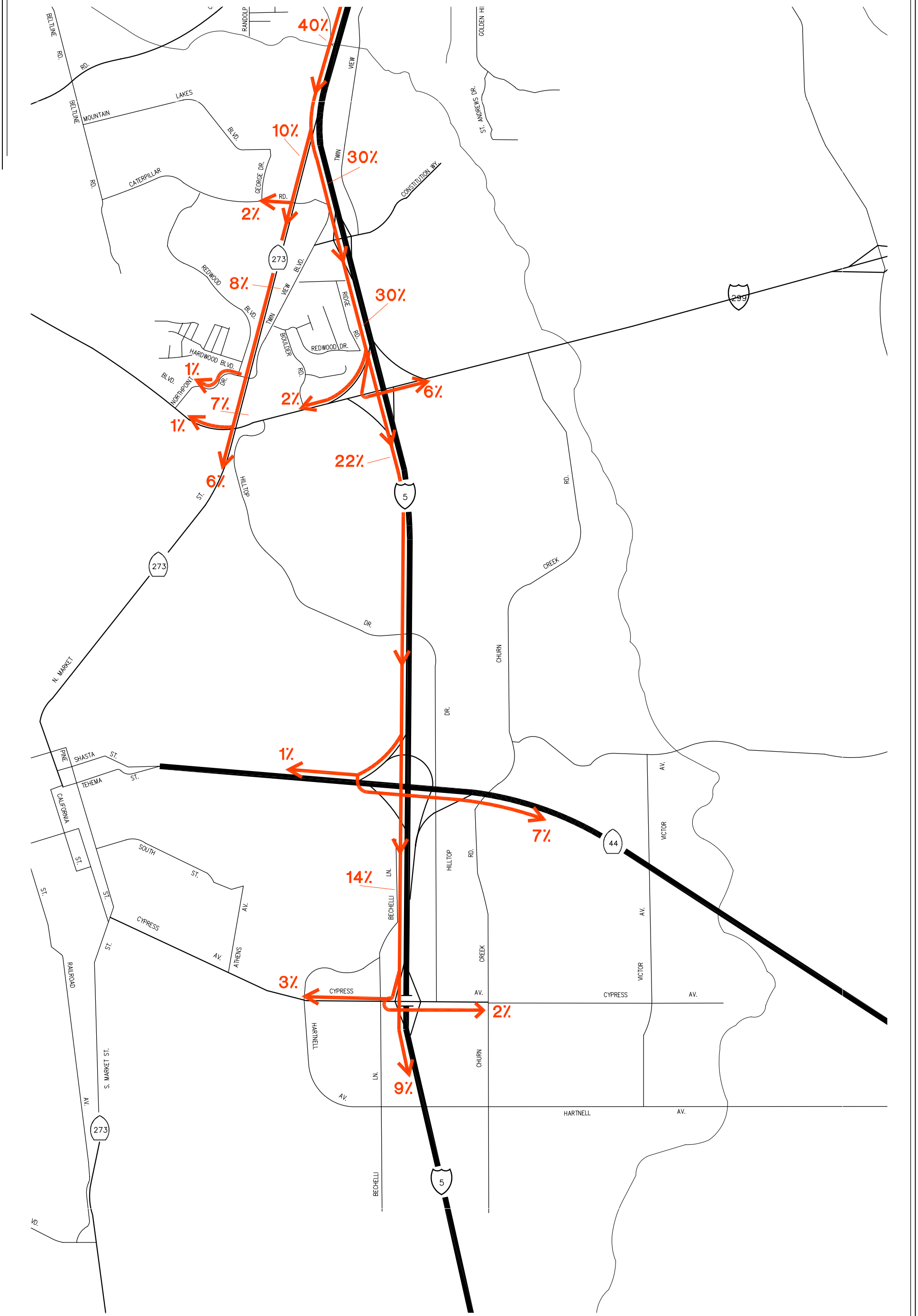


Mountain Gate at Shasta - TIAR

Figure 6C

Commercial Trip Distributions - Northern Section

T946TG05(07AUG2007)

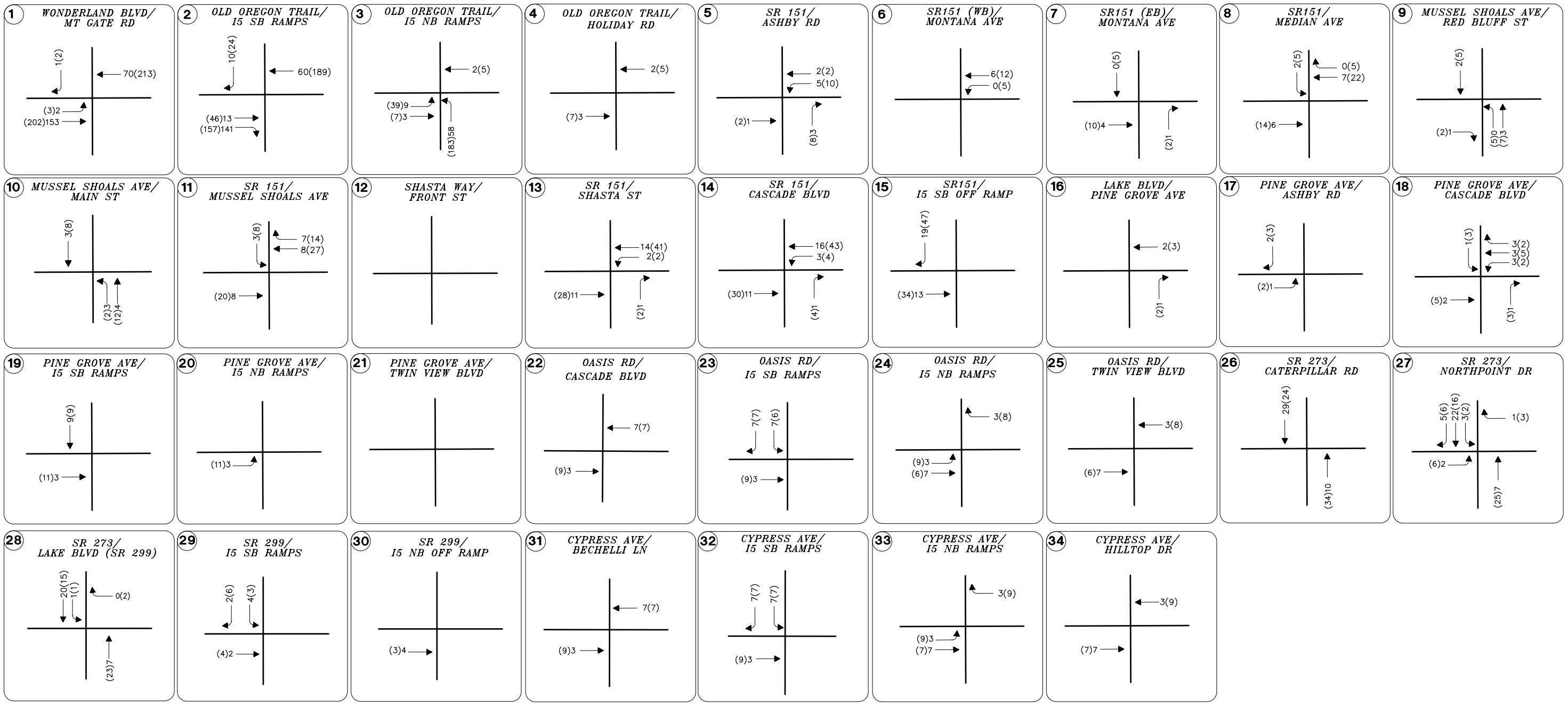


Mountain Gate at Shasta Lake

Figure 6D

Commercial Trip Distributions - Southern Section

T946TG05(07AUG2007)



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

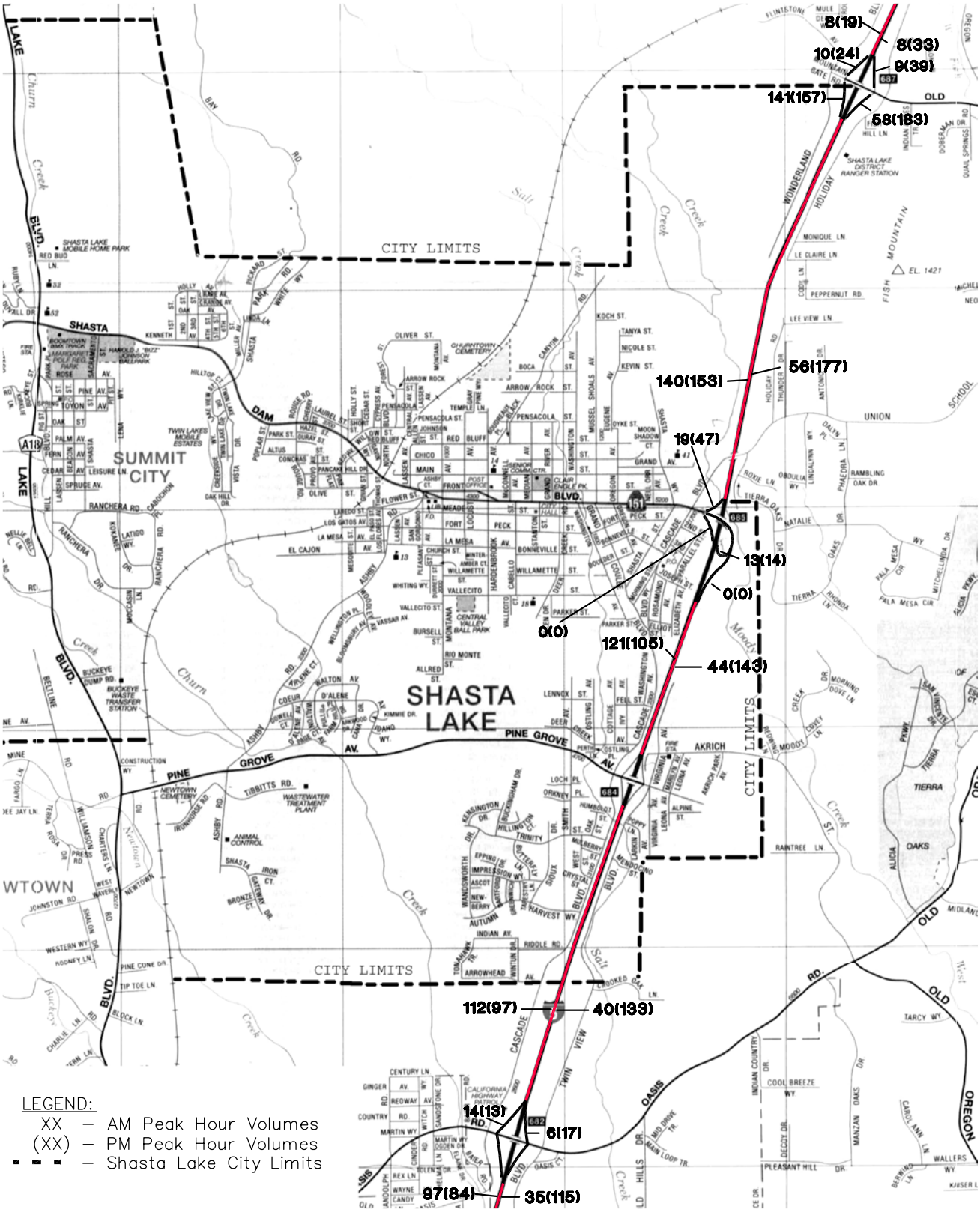
(xxx) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 7A

Year 2010 Project Only Intersection Traffic Volumes

File: T946TG021.dwg(21MAR07)45-5130-14

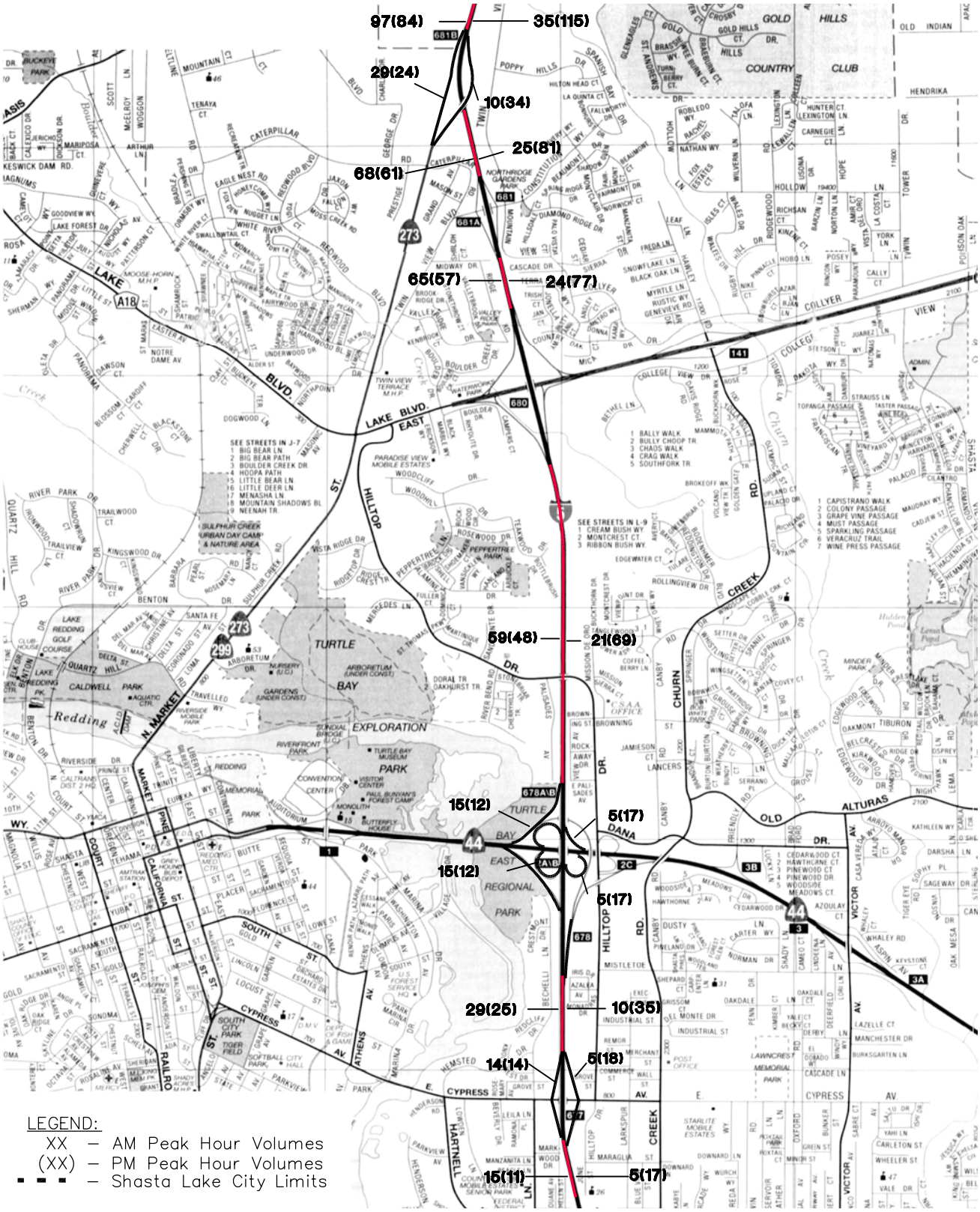


Mountain Gate at Shasta Lake

Figure 7B

2010 Project Only Mainline & Ramp Volumes Northern Study Area

T946TG36.dwg (22MAR07) 45–5130–14

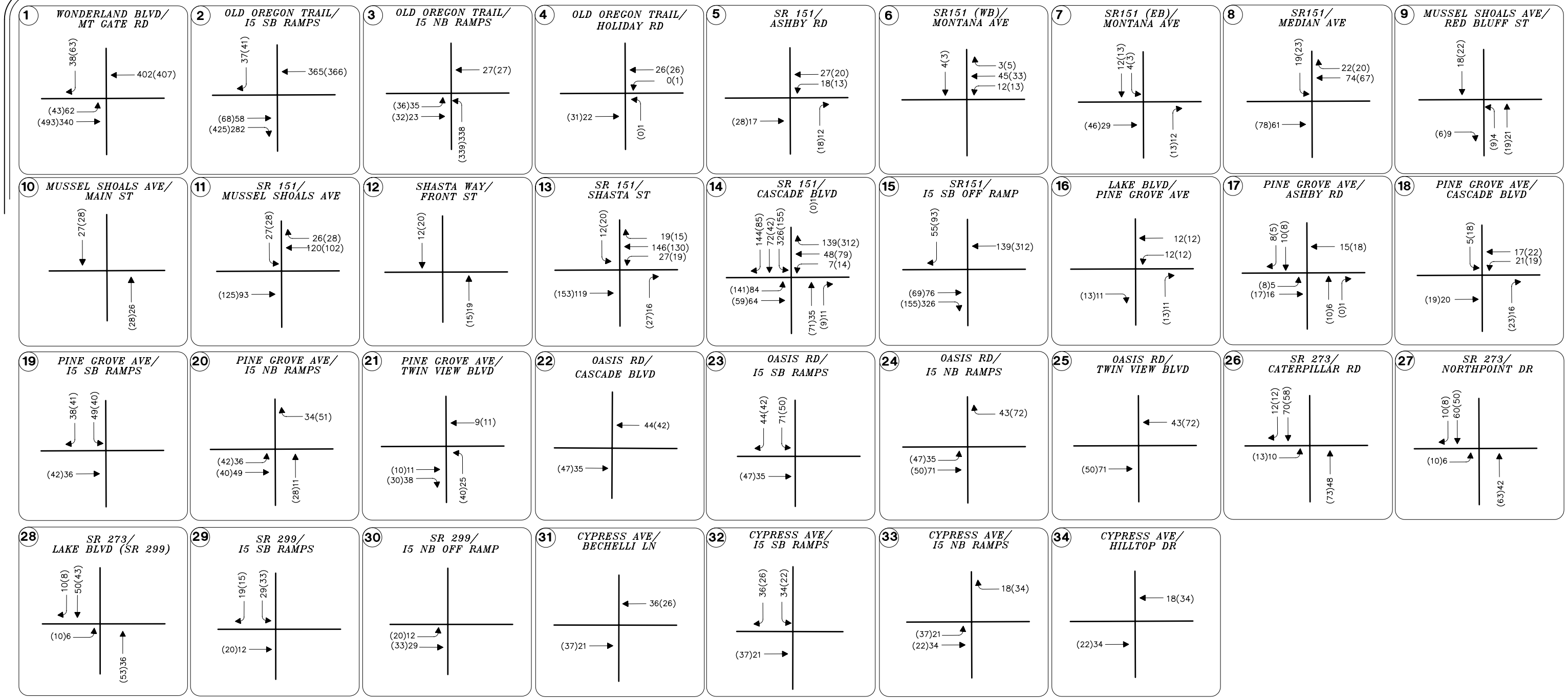


Mountain Gate at Shasta Lake

Figure 7C

2010 Project Only Mainline & Ramp Volumes Southern Study Area

T946TG37.dwg (031907) 45–5130–14



LEGEND:

XXX – AM PEAK HOUR TRAFFIC VOLUMES

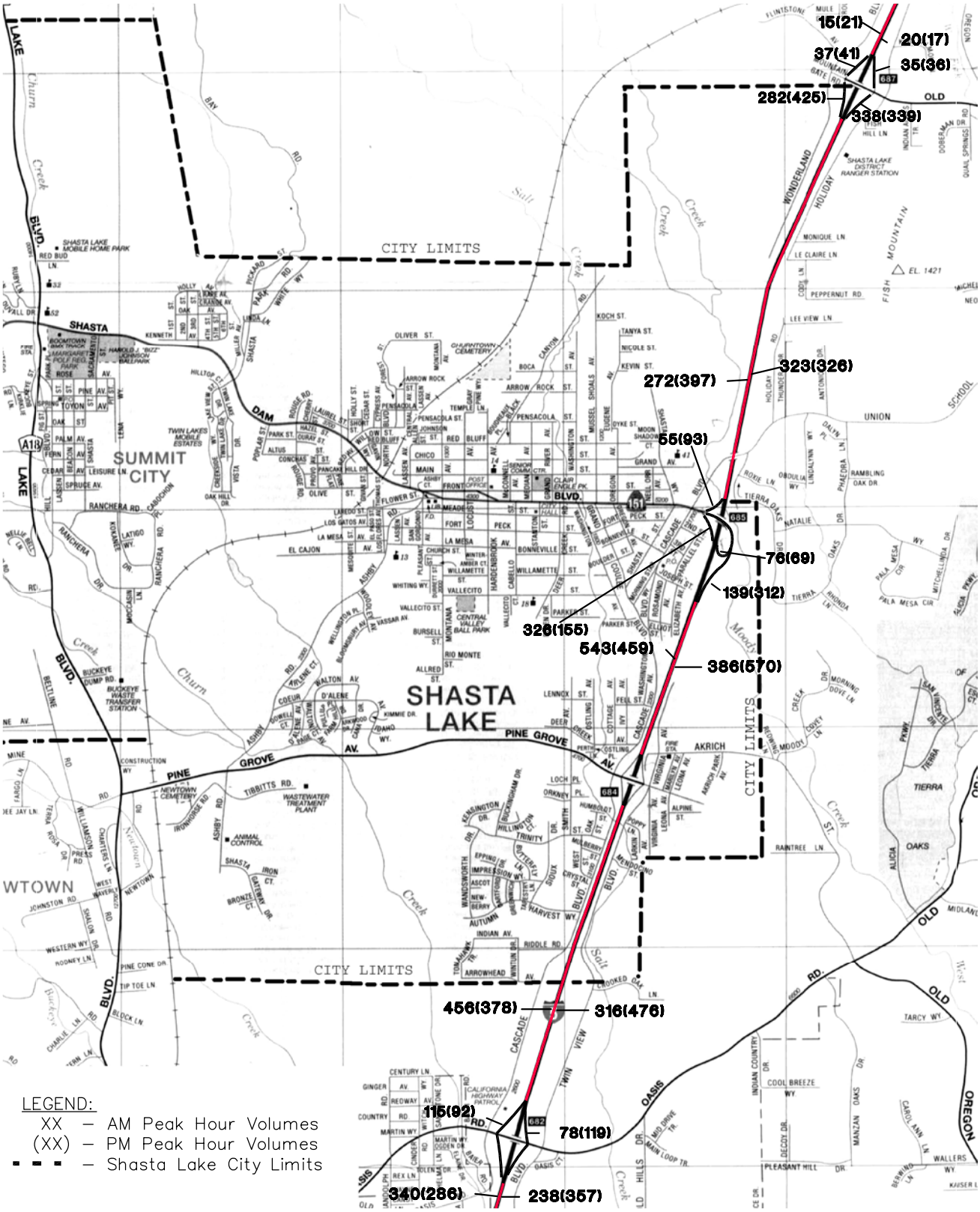
(XXX) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 8A

Cummulative (Year 2020 & 2030) Conditions Project Only Intersection Traffic Volumes

File: T946TG024.dwg(21MAR07)45-5130-14

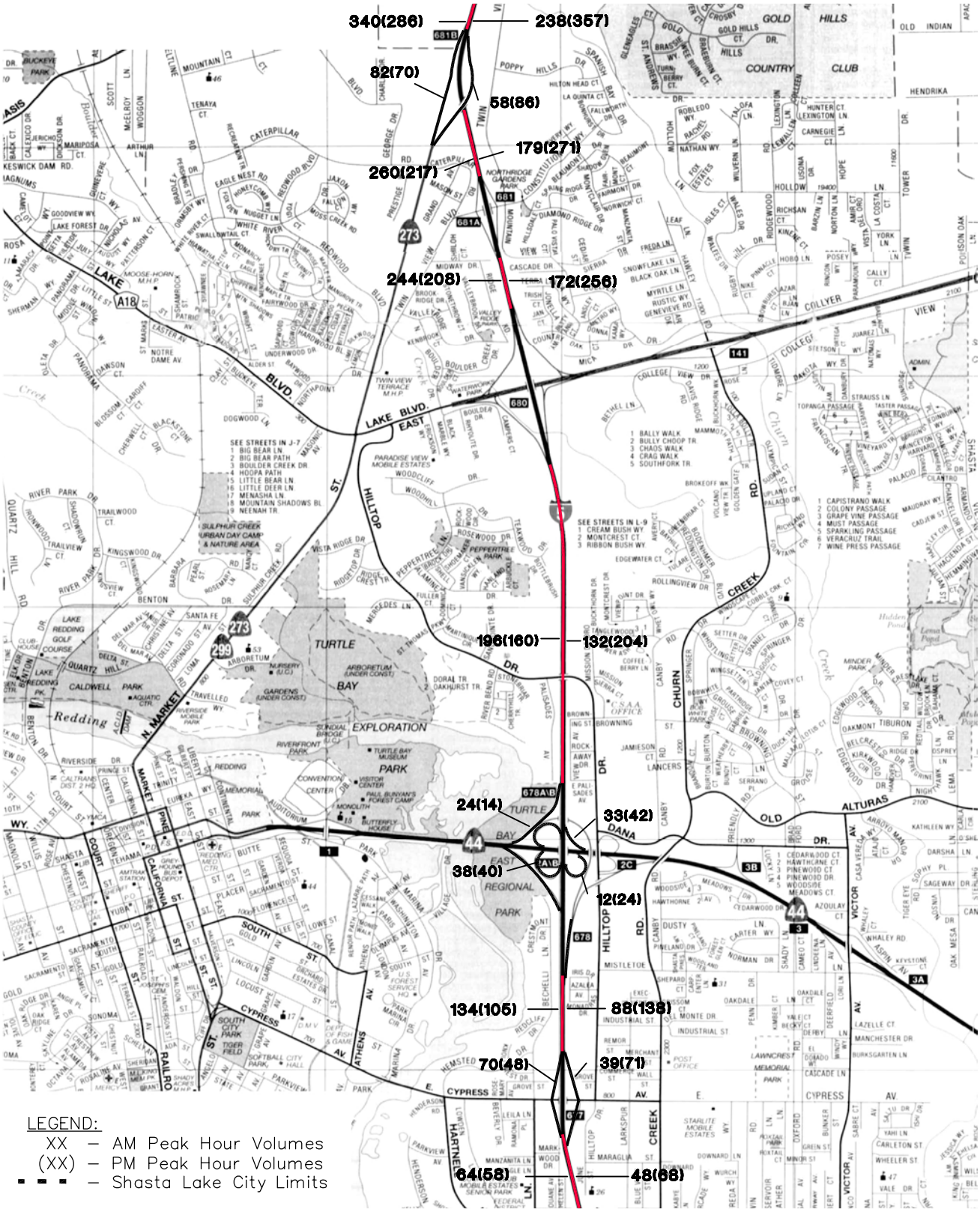


Mountain Gate at Shasta Lake

Figure 8B

Cummulative (2020 & 2030) Conditions Project Only
Mainline & Ramp Volumes Northern Study Area

T946TG38.dwg (22MAR07) 45–5130–14



Mountain Gate at Shasta Lake

Figure 8C

Cummulative (2020 & 2030) Conditions Project Only
Mainline & Ramp Volumes Southern Study Area

T946TG39.dwg (22MAR07) 45–5130–14

YEAR 2010 PLUS PROJECT TRAFFIC OPERATIONS

Year 2010 Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2010 No Project* intersection and roadway traffic volumes. The resulting *Year 2010 Plus Project* traffic volumes are illustrated on **Figure 9A**.

INTERSECTIONS

Year 2010 Plus Project peak hour intersection traffic operations were analyzed utilizing derived *Year 2010 Plus Project* peak hour intersection traffic volumes (shown on Figure 9A) and lane geometrics and control depicted in Figure 2. **Table 7A** provides a summary of the *Year 2010 Plus Project* peak hour intersection LOS.

TABLE 8A
YEAR 2010 PLUS PROJECT INTERSECTION LEVELS OF SERVICE

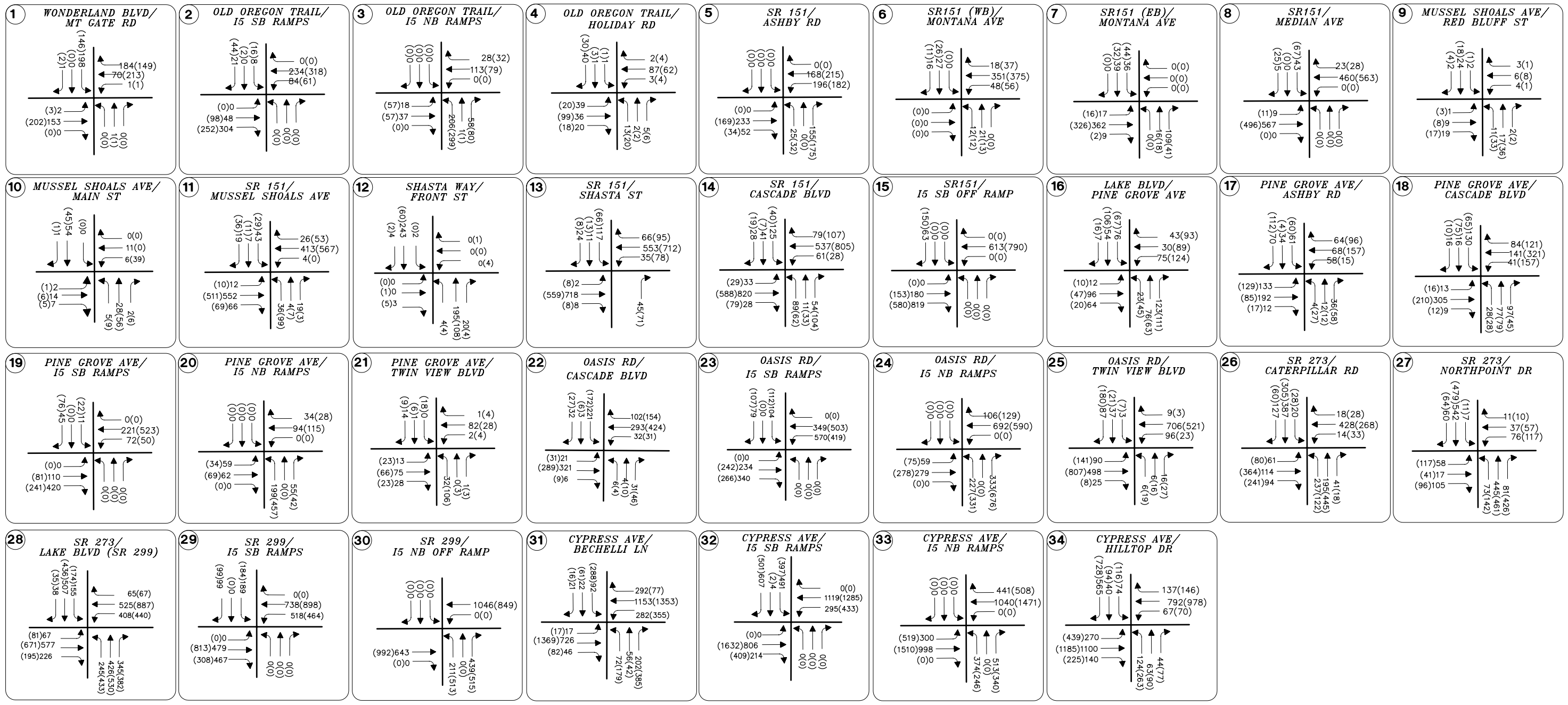
#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Wonderland Blvd/Mt Gate Road	TWSC	C	14.7	B	no	17.9	C	no
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	11.7	B	no	13.3	B	no
3	Mountain Gate Rd./I5 NB Ramps	TWSC	C	12.7	B	no	18.6	C	no
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.5	B	no	10.6	B	no
5	SR151/Ashby Road	TWSC	C	12.6	B	no	12.1	B	no
6	SR151(WB)/Montana Avenue	TWSC	C	14.1	B	no	14.7	B	no
7	SR151(EB)/Montana Avenue	TWSC	C	16.1	C	no	13.9	B	no
8	**SR151/Median Avenue**	**TWSC**	**C**	**25.5**	**D**	**no**	**30.8**	**D**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.1	A	no	7.3	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.3	A	no	7.5	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**30.8**	**D**	**no**	**135.8**	**F**	**no**
12	Shasta Way/Front Street	TWSC	C	9.8	A	no	9.8	A	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**697.2**	**F**	**YES**	**654.0**	**F**	**no**
14	SR151/Cascade Blvd	Signal	C	27.3	C	-	21.6	C	-
15	SR151/I5 SB Off Ramp	Signal	C	10.5	B	-	11.2	B	-
16	Lake Blvd/Pine Grove Avenue	TWSC	C	17.0	C	no	24.4	C	no
17	Pine Grove Ave/Ashby Road	TWSC	C	16.9	C	no	13.5	B	no
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**42.6**	**E**	**no**	**193.1**	**F**	**no**
19	Pine Grove Ave/I5 SB Ramps	TWSC	C	11.0	B	no	15.9	C	no
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	14.6	B	no	**32.9**	**D**	**no**
21	Pine Grove Ave/Twin View Blvd.	TWSC	C	10.5	B	no	10.9	B	no
22	**Oasis Rd/Cascade Blvd**	**TWSC**	**C**	**67.2**	**F**	**no**	**95.8**	**F**	**no**
23	**Oasis Rd/I5 SB Ramps**	**TWSC**	**C**	**OVR**	**F**	**YES**	**839.6**	**F**	**YES**
24	**Oasis Rd/I5 NB Ramps**	**TWSC**	**C**	**431.5**	**F**	**YES**	**847.3**	**F**	**YES**
25	**Oasis Rd/Twin View Blvd**	**TWSC**	**C**	**60.1**	**F**	**YES**	**228.8**	**F**	**YES**
26	SR273/Caterpillar Road	Signal	D	32.1	C	-	31.2	C	-
27	SR273/Northpoint Drive	Signal	D	16.5	B	-	19.2	B	-
28	SR273/Lake Blvd (SR299)	Signal	D	29.3	C	-	35.7	D	-
29	SR299/I5 SB Ramps	Signal	D	10.8	B	-	16.3	B	-
30	SR299/I5 NB Ramps	Signal	D	20.9	C	-	19.2	B	-
31	Cypress Avenue/Bechelli Lane	Signal	C	18.4	B	-	33.0	C	-
32	Cypress Avenue/I5 SB Ramps	Signal	D	23.0	C	-	51.1	D	-
33	**Cypress Avenue/I5 NB Ramps**	**Signal**	**D**	45.5	D	-	**57.7**	**E**	-
34	**Cypress Avenue/Hilltop Drive**	**Signal**	**C**	29.4	C	-	**38.8**	**D**	-

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

(xxx) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 9A

Year 2010 Plus Project Intersection Traffic Volumes

File: T946TG13.dwa(08MAR07)45-5130-14

Based on a comparison of "no project" vs. "plus project" intersection LOS as presented in Table 5A and Table 8A, respectively, the following intersections which were found to operate unacceptably for *Year 2010 No Project* conditions will experience an increase in delay and/or change in LOS with the addition of project traffic:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street (would continue to meet the warrant)
- Pine Grove Avenue/Cascade Boulevard
- Pine Grove Avenue/I-5 NB Ramps (would continue to meet the warrant)
- Oasis Road/Cascade Boulevard
- Oasis Road/I-5 SB Ramps (would continue to meet the warrant)
- Oasis Road/I-5 NB Ramps (would continue to meet the warrant)
- Oasis Road/Twin View Boulevard (would continue to meet the warrant)
- Cypress Avenue/I-5 NB Ramps
- Cypress Avenue/Hilltop Drive

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2010 Plus Project daily traffic operations along roadway segments were analyzed by comparing derived *Year 2010 Plus Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 1) that corresponds to the roadway type assumed for the *Existing* conditions. **Table 8B** contains a summary of the *Year 2010 Plus Project* roadway segment LOS conditions.

TABLE 8B
YEAR 2010 PLUS PROJECT ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	7,070	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	4,420	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,520	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	450	A
Main St.- Between Washington Ave. and Grand River Ave.	Residential	610	B
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector with Frontages	1,660	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	2,570	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	5,390	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	4,080	A
Pine Grove Ave. - west of Cascade Blvd.	2-Lane Undivided Arterial	5,530	A
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	12,850	A

All of the study roadway segments would operate at acceptable LOS on a daily basis under *Year 2010 Plus Project* conditions.

FREEWAY MAINLINE SEGMENTS

Year 2010 Plus Project mainline operations were evaluated utilizing the peak hour volumes shown on **Figures 9B** and **Figure 9C**. **Table 8C** summarizes *Year 2010 Plus Project* conditions' I-5 freeway mainline operations.

TABLE 8C
YEAR 2010 PLUS PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

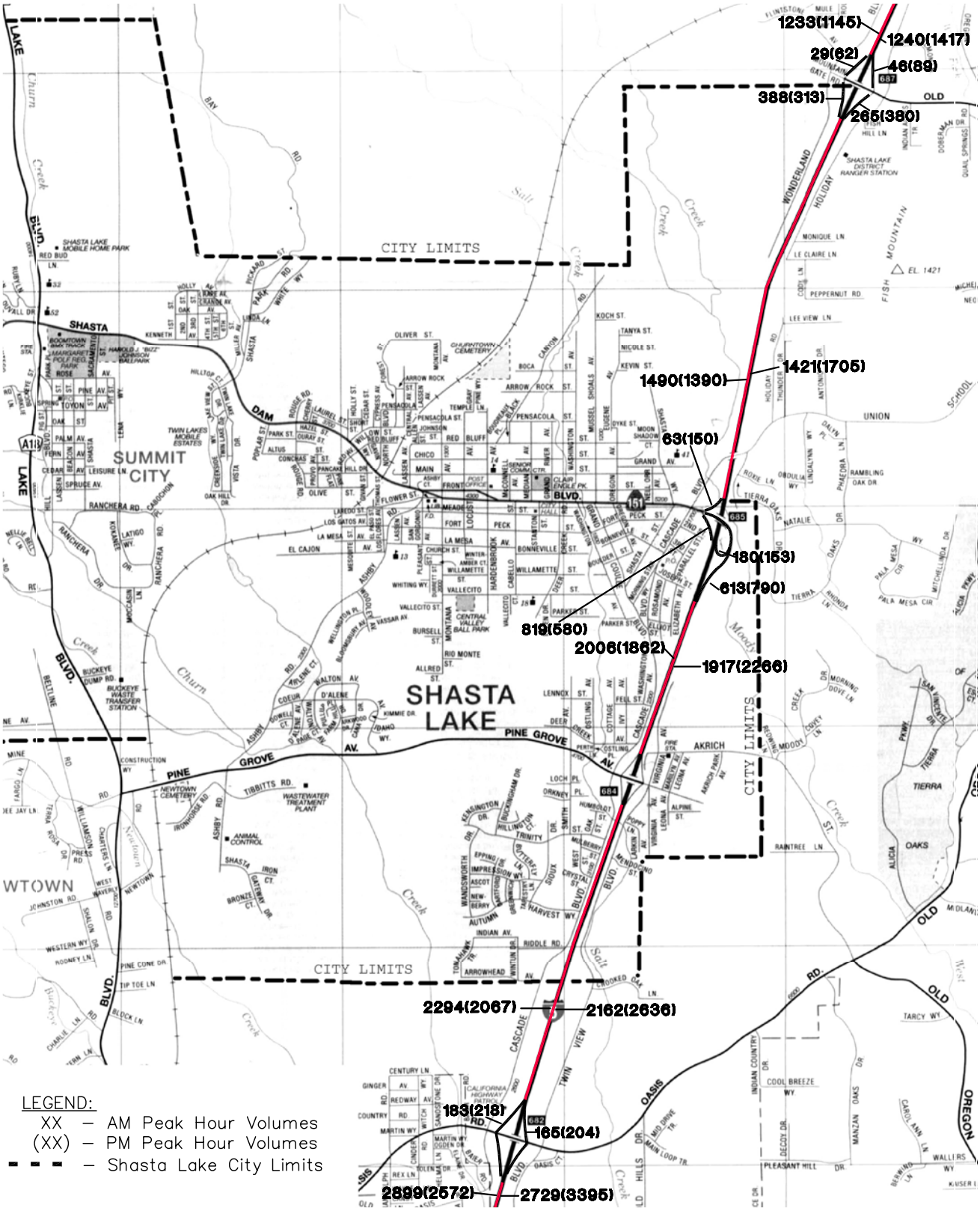
Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**3,340**	**38.6**	**E**	**3,928**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**3,428**	**41.0**	**E**	2,943	30.5	D
I-5 NB, north of Cypress Avenue I/C	**3**	**D**	3,592	27.1	D	**4,368**	**37.4**	**E**
I-5 SB, north of Cypress Avenue I/C	3	D	3,822	29.6	D	3,022	22.1	C
I-5 NB, north of SR 44 I/C	**2**	**D**	3,143	34.2	D	**3,940**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**3,550**	**44.9**	**E**	2,912	30.0	D
I-5 NB, north of SR 299 I/C	2	D	2,551	25.1	C	3,089	33.1	D
I-5 SB, north of SR 299 I/C	2	D	2,773	28.0	D	2,381	23.2	C
I-5 NB, north of Twin View Blvd I/C	2	D	2,251	21.8	C	2,763	27.8	D
I-5 SB, north of Twin View Blvd I/C	2	D	2,366	23.0	C	2,115	20.4	C
I-5 NB, north of SR 273 I/C	3	D	2,729	17.8	B	3,395	22.3	C
I-5 SB, north of SR 273 I/C	3	D	2,899	18.9	C	2,572	16.8	B
I-5 NB, north of Oasis Road I/C	3	D	2,162	15.3	B	2,636	18.6	C
I-5 SB, north of Oasis Road I/C	3	D	2,294	16.2	B	2,067	14.6	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	1,917	14.1	B	2,266	16.5	B
I-5 SB, north of Pine Grove Avenue I/C	3	C	2,006	14.6	B	1,862	13.6	B
I-5 NB, north of SR 151 I/C	2	C	1,421	15.9	B	1,705	18.8	C
I-5 SB, north of SR 151 I/C	2	C	1,490	16.7	B	1,390	15.4	B
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,240	13.7	B	1,417	15.6	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,233	13.6	B	1,145	12.6	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

Based on a comparison of "no project" vs. "plus project" freeway mainline LOS as presented in Table 5C and Table 8C, respectively, the following mainline segments which were found to operate unacceptably for *Year 2010 No Project* conditions would continue to operate at unacceptable LOS with the addition of project traffic with slight increase in the density:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C

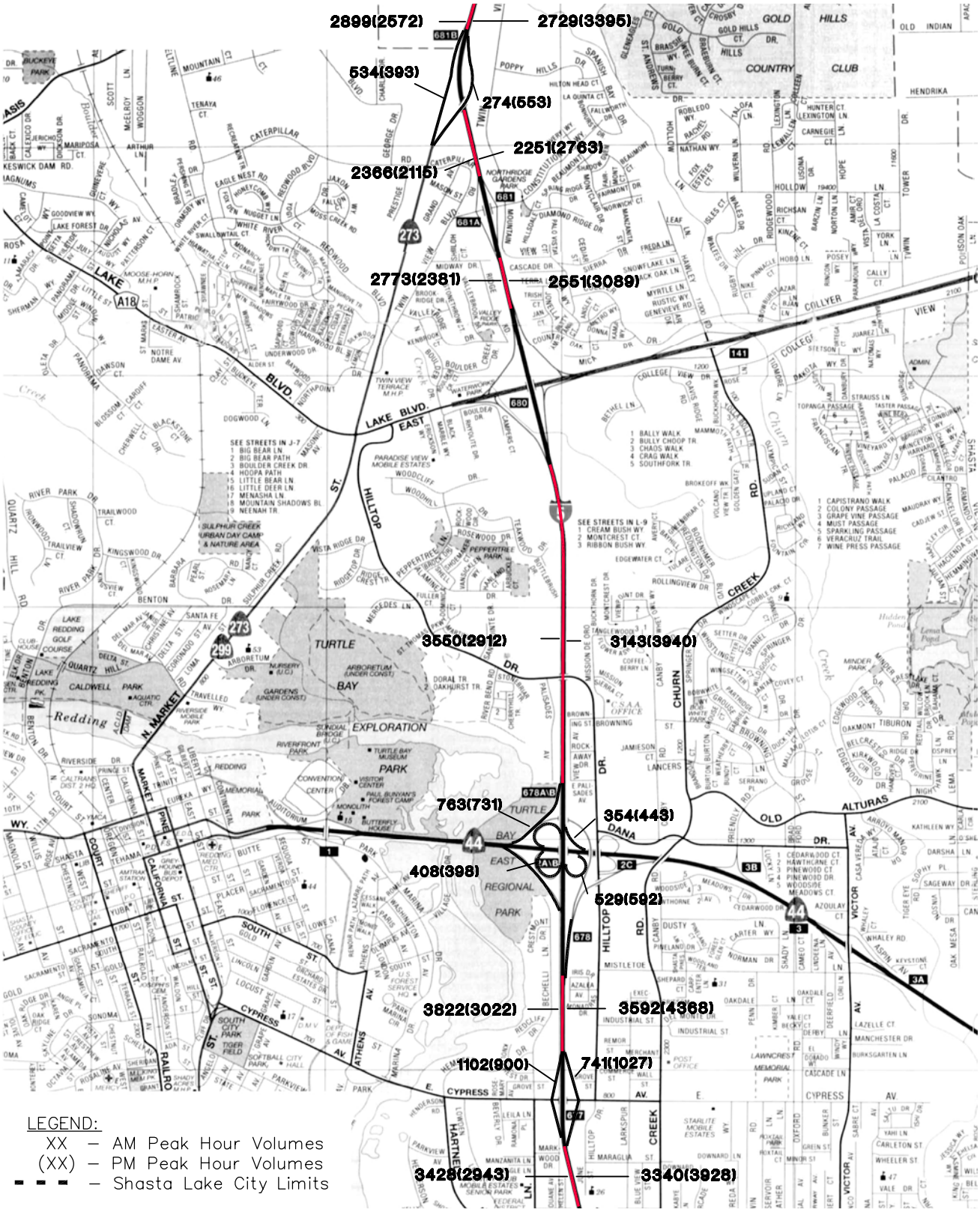
All improvements are discussed under the "RECOMMENDATIONS" section included in this report.



Mountain Gate at Shasta Lake Figure 9B

2010 Plus Project Mainline and Ramp Volumes Northern Study Area

T946TG22.dwg (22MAR07) 45–5130–14



Mountain Gate at Shasta Lake

Figure 9C

2010 Plus Project Mainline & Ramp Volumes Southern Study Area

T946TG23.dwg (22MAR07) 45–5130–14

RAMP JUNCTIONS

Year 2010 Plus Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figures 9B and 9C. **Table 8D** summarizes *Year 2010 Plus Project* conditions' ramp merge/diverge operations.

TABLE 8D
YEAR 2010 PLUS PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	741	22.5	C	1,027	28.4	D
I-5 SB Off-Ramp	Diverge	D	1,102	29.3	D	900	25.5	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	**Merge**	**D**	529	30.6	D	**592**	**38.0**	**F**
I-5 NB Direct On-Ramp	Merge	D	354	23.1	C	673	28.3	D
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**763**	**45.5**	**F**	**731**	**38.1**	**E**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**408**	**45.5**	**F**	**398**	**38.1**	**E**
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	274	24.5	C	553	31.3	D
I-5 SB Off-Ramp	Diverge	D	534	27.7	C	393	25.2	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	165	19.2	B	204	22.2	C
I-5 SB Off-Ramp	Diverge	D	183	22.8	C	219	21.3	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	613	22.0	C	790	25.0	C
I-5 NB On-Ramp	Merge	C	180	15.2	B	153	17.1	B
I-5 SB Off-Ramp	Diverge	C	63	22.4	C	150	21.2	C
I-5 SB On-Ramp	Merge	C	819	22.5	C	580	19.2	B
			AM Peak Hour			**PM Peak Hour**		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	265	21.5	C	380	23.4	C
I-5 NB On-Ramp	Merge	C	46	19.2	B	89	21.5	C
I-5 SB Off-Ramp	Diverge	C	29	19.3	B	62	18.2	B
I-5 SB On-Ramp	Merge	C	388	18.8	B	313	16.9	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

The following ramp merge/diverge junctions which were found to be operating unacceptably for *Year 2010 No Project* conditions, would continue to operate at unacceptable LOS with the addition of project traffic:

- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2020 CONDITIONS

Within this analysis, Year 2020 conditions are assumed as those that will exist in the year 2020 consistent with land use assumptions included within the latest version of the Shasta County Travel Demand Model with changes as identified in Appendix Table 1A. *Year 2020 No Project* conditions assume that the Mountain Gate at Shasta Lake would remain undeveloped (i.e., a "vacant" project site) through year 2020, and year 2020 model land uses are assumed elsewhere. *Year 2020 Plus Project* conditions were then simulated by superimposing the proposed project-generated traffic on top of the *Year 2020 No Project* traffic volumes.

PLANNED/PROGRAMMED IMPROVEMENTS – INTERSECTIONS

The City of Redding approved the Oasis Road Specific Plan Master EIR in 2006, which analyzed operations on Oasis Road and other facilities in the vicinity of the project site. **Figure 10** shows the baseline lane geometrics and control assumed for Cumulative (Year 2020 and 2030) conditions for intersections analyzed along the Oasis Road corridor. Intersection lane geometrics and control at other study locations are assumed to be identical to those depicted in (Figure 2 Existing Conditions).

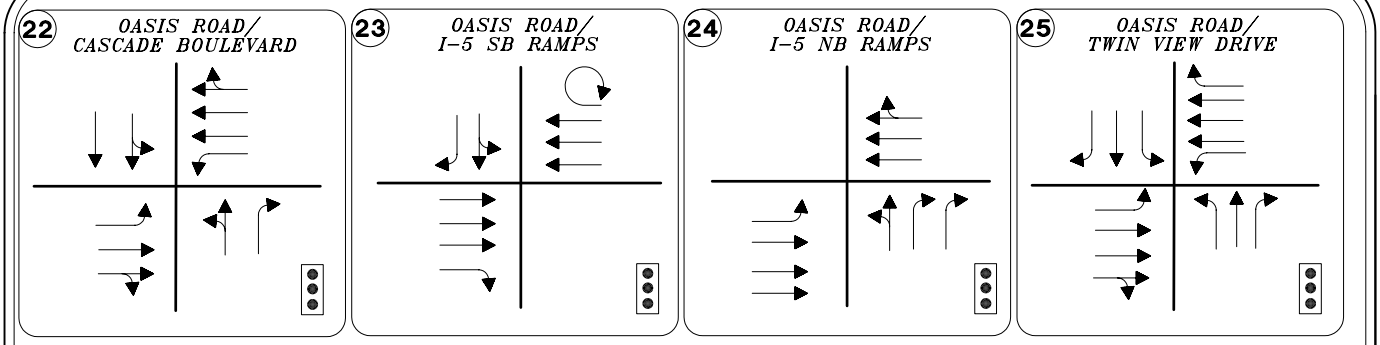
TRAFFIC VOLUMES

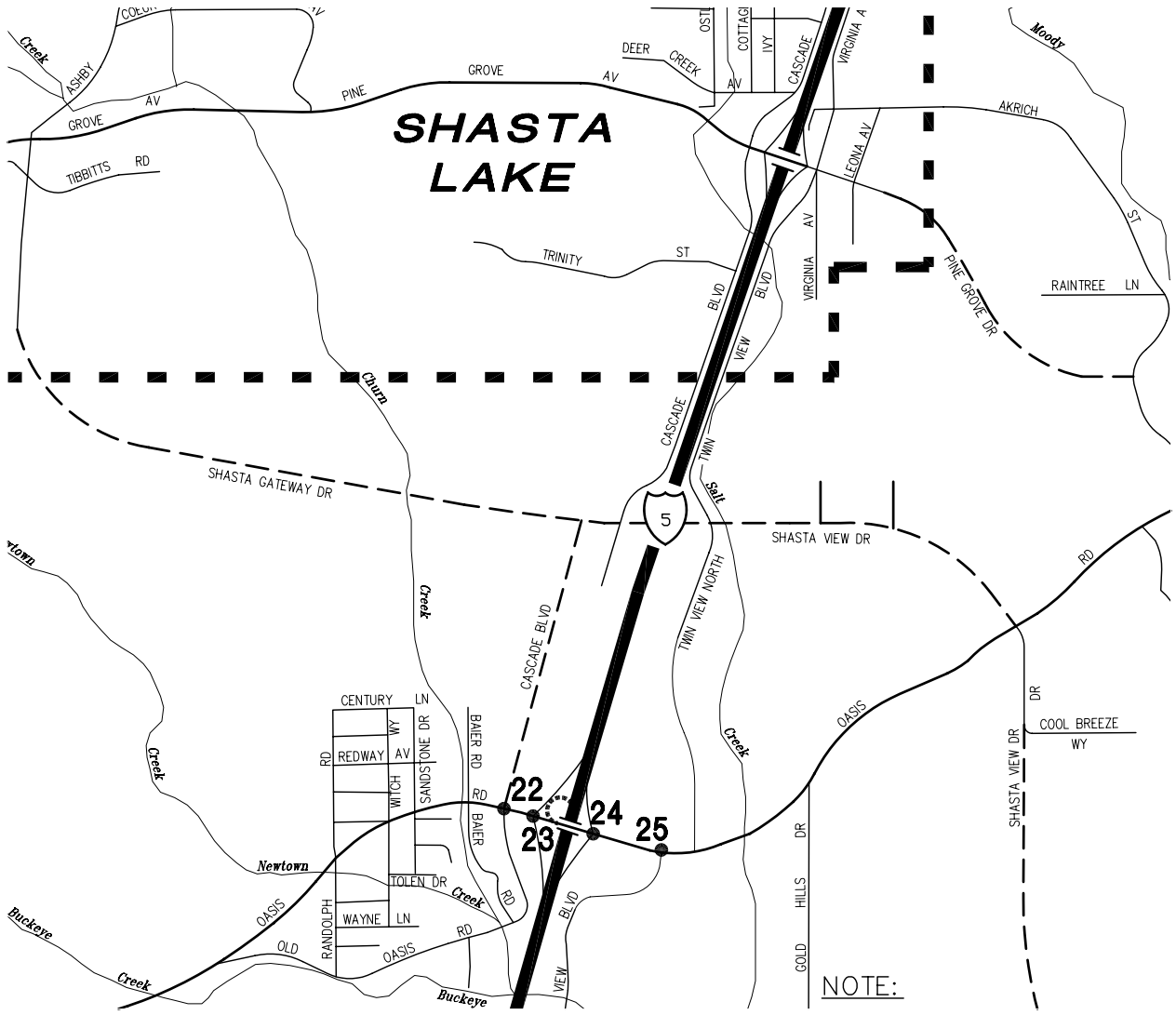
The traffic volumes for the Year 2020 analysis were derived from the January 2007 version of the Shasta County Travel Demand Model. The Travel Demand Model for the year 2020 includes the land use information for projects that Shasta Lake City staff anticipate to be completed by 2020. The difference of the volumes for the *Year 2020* and *Year 2004* (Calibrated Year) as obtained from the Travel Demand Model were added to the existing volumes to obtain the *Year 2020 No Project* volumes. The *2020 Plus Project* volumes were obtained by super-imposing project traffic on top of the *2020 No Project* volumes.

To assess the impacts of the Mountain Gate at Shasta Lake project on the study intersections and roadways, the study analyzed the following 2020 scenarios:

- *Year 2020 No Project* conditions
- *Year 2020 Plus Project* conditions

Figure 11A depicts the *Year 2020 No Project* intersection volumes, while **Figures 11B** and **11C** depict the mainline and ramp volumes.





LEGEND:

– – – – Shasta Lake City Limits

NOTE:

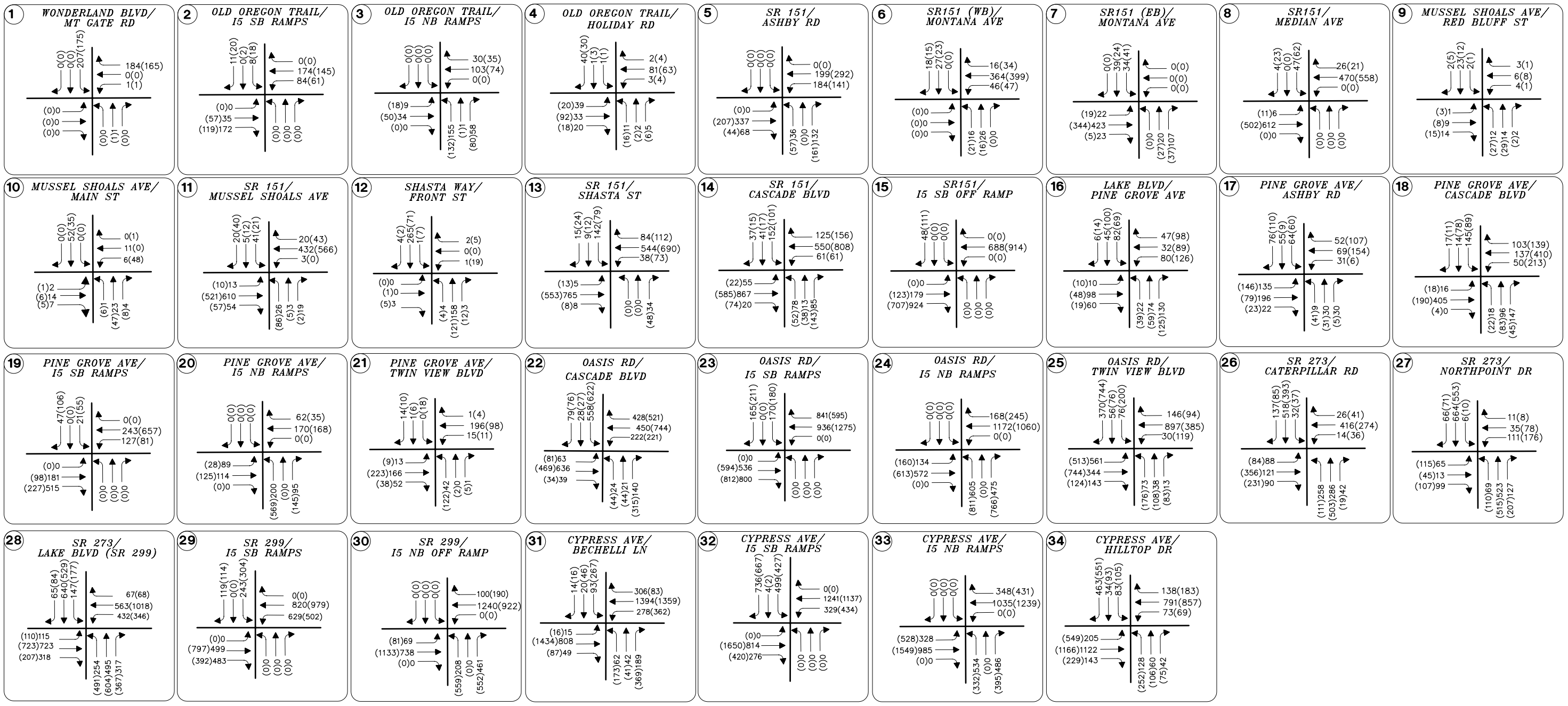
Intersection lane geometrics and control for all other intersections same as those shown in Figure 2 (Existing Conditions).

Mountain Gate at Shasta Lake

Figure 10

Cumulative (Year 2020 & 2030) Conditions Lane Geometrics and Control

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LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

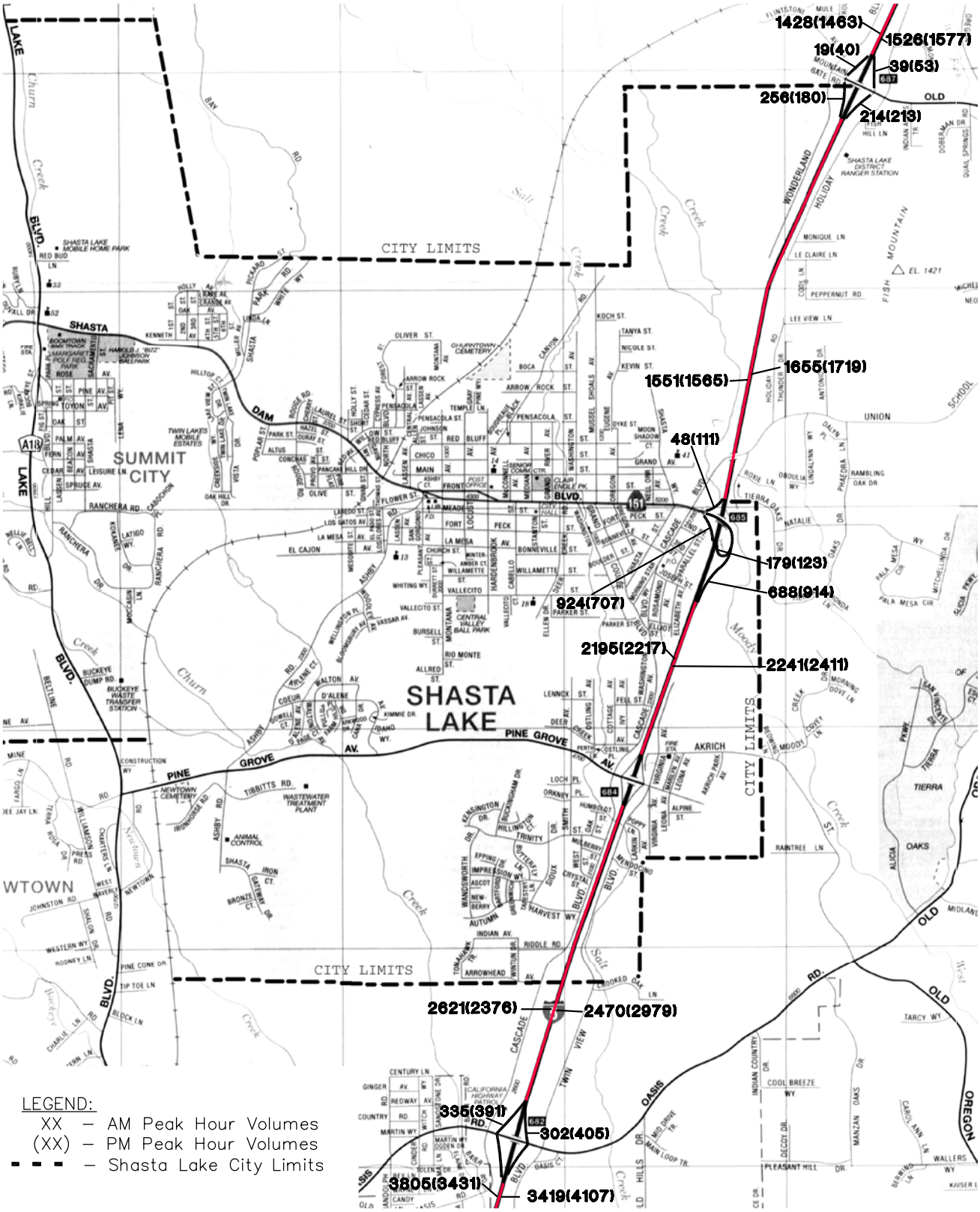
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Mountain Gate at Shasta Lake

Figure 11A

Year 2020 No Project Intersection Traffic Volumes

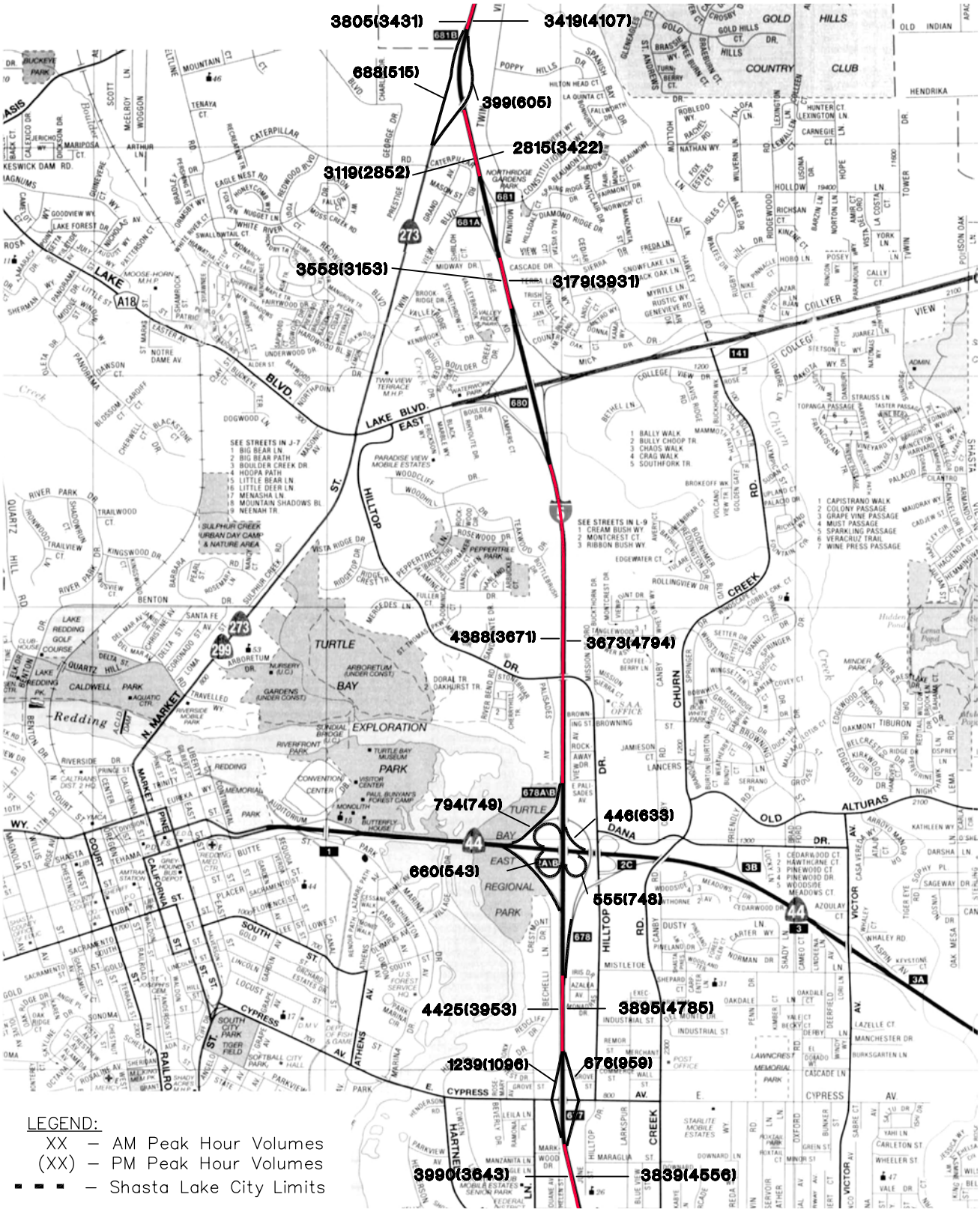
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Mountain Gate at Shasta Lake Figure 11B

2020 No Project Mainline and Ramp Volumes Northern Study Area

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Mountain Gate at Shasta Lake

Figure 11C

2020 No Project Mainline & Ramp Volumes Southern Study Area

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YEAR 2020 NO PROJECT TRAFFIC OPERATIONS

Year 2020 No Project conditions were quantified by using derived year 2020 intersection and roadway traffic volumes (excluding the proposed project) and lane geometrics and control shown on Figures 2 and 10.

INTERSECTIONS

Table 9A provides a summary of the resulting *Year 2020 No Project* intersection LOS.

TABLE 9A
YEAR 2020 NO PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Wonderland Blvd/Mt Gate Road	TWSC	C	9.2	A	no	9.1	A	no
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	11.1	B	no	11.1	B	no
3	Mountain Gate Rd./I5 NB Ramps	TWSC	C	11.2	B	no	11.2	B	no
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.4	B	no	10.4	B	no
5	SR151/Ashby Road	TWSC	C	15.3	C	no	13.8	B	no
6	SR151(WB)/Montana Avenue	TWSC	C	14.5	B	no	15.2	C	no
7	SR151(EB)/Montana Avenue	TWSC	C	18.1	C	no	14.2	B	no
8	**SR151/Median Avenue**	**TWSC**	**C**	**28.5**	**D**	**no**	**29.4**	**D**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.1	A	no	7.2	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.2	A	no	7.4	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**34.1**	**D**	**no**	**111.8**	**F**	**no**
12	Shasta Way/Front Street	TWSC	C	10.3	B	no	10.2	B	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
14	SR151/Cascade Blvd	Signal	C	26.0	C	-	20.8	C	-
15	SR151/I5 SB Off Ramp	Signal	C	9.3	A	-	9.3	A	-
16	Lake Blvd/Pine Grove Avenue	TWSC	C	17.4	C	no	23.5	C	no
17	Pine Grove Ave/Ashby Road	TWSC	C	17.0	C	no	19.9	C	no
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**184.5**	**F**	**no**	**1012.7**	**F**	**no**
19	**Pine Grove Ave/I5 SB Ramps**	**TWSC**	**C**	13.5	B	no	**31.4**	**D**	**no**
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	24.1	C	no	**185.6**	**F**	**YES**
21	Pine Grove Ave/Twin View Blvd.	TWSC	C	13.8	B	no	14.7	B	no
22	**Oasis Rd/Cascade Blvd**	**Signal**	**C**	**38.7**	**D**	**-**	**40.9**	**D**	**-**
23	Oasis Rd/I5 SB Ramps	Signal	C	6.7	A	-	10.9	B	-
24	Oasis Rd/I5 NB Ramps	Signal	C	17.6	B	-	32.7	C	-
25	Oasis Rd/Twin View Blvd	Signal	C	26.8	C	-	29.7	C	-
26	SR273/Caterpillar Road	Signal	D	31.0	C	-	26.4	C	-
27	SR273/Northpoint Drive	Signal	D	16.2	B	-	21.2	C	-
28	SR273/Lake Blvd (SR299)	Signal	D	32.0	C	-	42.6	D	-
29	SR299/I5 SB Ramps	Signal	D	13.1	B	-	19.9	B	-
30	SR299/I5 NB Ramps	Signal	D	20.8	C	-	21.4	C	-
31	Cypress Avenue/Bechelli Lane	Signal	C	25.8	C	-	31.1	C	-
32	**Cypress Avenue/I5 SB Ramps**	**Signal**	**D**	22.5	C	-	**58.5**	**E**	**-**
33	Cypress Avenue/I5 NB Ramps	Signal	D	27.7	C	-	47.2	D	-
34	Cypress Avenue/Hilltop Drive	Signal	C	20.1	C	-	30.0	C	-

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant

As shown in Table 9A, the following intersections are projected to operate at unacceptable LOS at least during one peak hour period:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street (would meet the warrant)
- Pine Grove Avenue/Cascade Boulevard
- Pine Grove Avenue/I-5 SB Ramps
- Pine Grove Avenue/I-5 NB Ramps (would meet the warrant)
- Oasis Road/Cascade Boulevard
- Cypress Avenue/I-5 SB Ramps

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2020 No Project daily traffic operations along roadway segments were analyzed by comparing derived *Year 2020 No Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 2) that corresponds to the roadway type assumed for *Year 2020 No Project* conditions following implementation of planned improvements as described earlier. **Table 9B** contains a summary of the *Year 2020 No Project* roadway segment LOS conditions.

TABLE 9B
YEAR 2020 NO PROJECT CONDITIONS ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	8,480	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	4,780	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,450	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	460	A
Main St.- Between Washington Ave. and Grand River Ave.	Residential	570	A
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector with Frontages	1,880	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	2,650	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	5,590	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	4,510	A
Pine Grove Ave. - west of Cascade Blvd.	2-Lane Undivided Arterial	6,000	A
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	16,000	A

As indicated in Table 9B, all of the study segments would operate at acceptable LOS on a daily basis for *Year 2020 No Project* conditions.

FREEWAY MAINLINE SEGMENTS

Year 2020 No Project mainline operations were evaluated utilizing the peak hour volumes shown on Figure 11B and 11C. **Table 9C** summarizes *Year 2020 No Project* conditions' I-5 freeway mainline operations.

TABLE 9C
YEAR 2020 NO PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**3,839**	**37.7**	**E**	**4,556**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**3,990**	**41.2**	**E**	3,643	34.0	D
I-5 NB, north of Cypress Avenue I/C	3	D	3,895	24.8	C	4,785	33.4	D
I-5 SB, north of Cypress Avenue I/C	3	D	4,425	29.4	D	3,953	25.3	C
I-5 NB, north of SR 44 I/C	**2**	**D**	3,673	34.5	D	**4,794**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**4,388**	**OVR**	**F**	3,671	34.5	D
I-5 NB, north of SR 299 I/C	**2**	**D**	3,179	27.5	D	**3,931**	**39.8**	**E**
I-5 SB, north of SR 299 I/C	2	D	3,558	32.6	D	3,153	27.2	D
I-5 NB, north of Twin View Blvd I/C	2	D	2,815	23.6	D	3,422	30.6	D
I-5 SB, north of Twin View Blvd I/C	2	D	3,119	26.8	D	2,852	24.7	C
I-5 NB, north of SR 273 I/C	3	D	3,419	19.2	C	4,107	23.3	C
I-5 SB, north of SR 273 I/C	3	D	3,805	21.4	C	3,431	19.3	C
I-5 NB, north of Oasis Road I/C	3	D	2,470	15.0	B	2,979	18.1	C
I-5 SB, north of Oasis Road I/C	3	D	2,621	15.9	B	2,376	14.4	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	2,241	14.3	B	2,411	15.1	B
I-5 SB, north of Pine Grove Avenue I/C	3	C	2,195	13.8	B	2,217	14.0	B
I-5 NB, north of SR 151 I/C	2	C	1,655	15.9	B	1,719	16.3	B
I-5 SB, north of SR 151 I/C	2	C	1,551	15.0	B	1,565	14.9	B
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,526	13.6	B	1,577	14.1	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,428	12.8	B	1,463	13.1	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As shown in Table 9C, the following mainline segments are projected to operate at unacceptable LOS conditions at least during one peak hour period:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

RAMP JUNCTIONS

Year 2020 No Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figure 11B and 11C. **Table 9D** summarizes *Year 2020 No Project* conditions' ramp merge/diverge operations.

TABLE 9D
YEAR 2020 NO PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

I-5 & Cypress Avenue	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB On-Ramp	**Merge**	**D**	676	31.7	D	**959**	**39.5**	**F**
I-5 SB Off-Ramp	Diverge	D	1,239	29.1	D	1,096	27.9	C

I-5 & SR 44	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB Loop On-Ramp	**Merge**	**D**	555	30.5	D	**748**	**38.8**	**F**
I-5 NB Direct On-Ramp	Merge	D	446	23.3	C	863	29.8	D
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**794**	**48.1**	**F**	**749**	**41.0**	**E**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**660**	**40.2**	**E**	543	33.5	D

I-5 & SR 273	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB On-Ramp	**Merge**	**D**	399	24.9	C	**605**	**32.1**	**F**
I-5 SB Off-Ramp	Diverge	D	688	27.7	C	515	25.3	C

I-5 & Oasis Road	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB On-Ramp	Merge	D	302	15.0	B	405	18.1	B
I-5 SB Off-Ramp	Diverge	D	335	19.4	B	391	18.1	B

I-5 & SR 151	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB Off-Ramp	Diverge	C	688	18.6	B	914	20.2	C
I-5 NB On-Ramp	Merge	C	179	11.1	B	123	10.3	B
I-5 SB Off-Ramp	Diverge	C	48	17.2	B	111	17.3	B
I-5 SB On-Ramp	Merge	C	924	16.9	B	707	14.9	B

I-5 & Mountain Gate Blvd.	Junction Type	Target LOS	AM Peak Hour Volume	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS
I-5 NB Off-Ramp	Diverge	C	214	22.0	C	213	22.5	C
I-5 NB On-Ramp	Merge	C	39	20.0	B	53	20.4	C
I-5 SB Off-Ramp	Diverge	C	19	19.3	B	40	19.6	B
I-5 SB On-Ramp	Merge	C	256	17.2	B	180	16.8	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As indicated in Table 9D, the following ramp merge/diverge junctions are projected to operate at unacceptable LOS conditions at least during one peak hour period.

- I-5 & Cypress Avenue - NB On-Ramp
- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp
- I-5 & SR 273 – NB On-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2020 PLUS PROJECT TRAFFIC OPERATIONS

Year 2020 Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2020 No Project* traffic volumes at the study intersections, roadway segments, mainline and ramp junctions. The resulting *Year 2020 Plus Project* intersection traffic volumes are illustrated on **Figure 12A** and the mainline and ramp junction volumes are shown on **Figures 12B** and **12C**.

INTERSECTIONS

Table 10A provides a summary of the resulting *Year 2020 Plus Project* intersection LOS.

TABLE 10A
YEAR 2020 PLUS PROJECT INTERSECTION LEVELS OF SERVICE

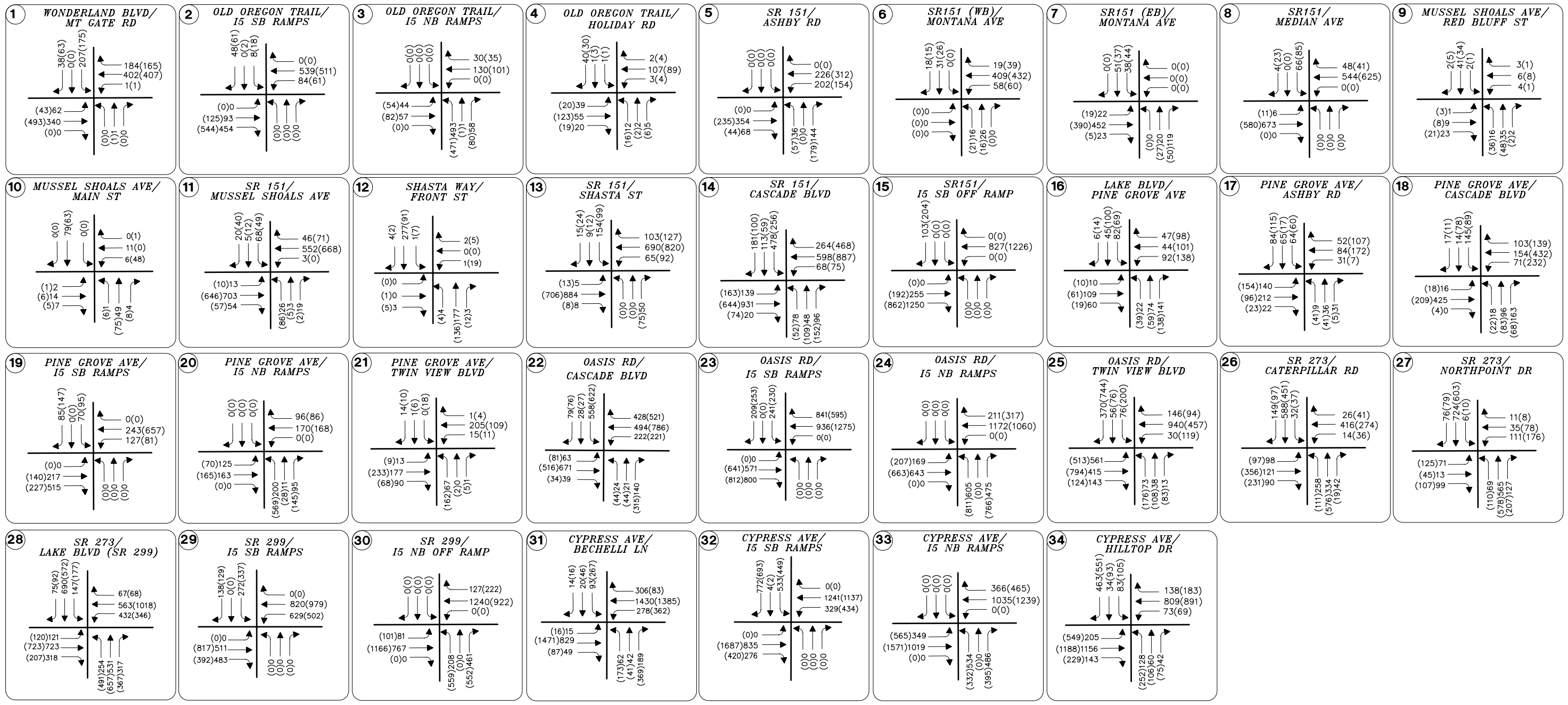
#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	**Wonderland Blvd/Mt Gate Road**	**TWSC**	**C**	**110.7**	**F**	**YES**	**158.7**	**F**	**YES**
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	16.1	C	no	19.7	C	YES
3	**Mountain Gate Rd./I5 NB Ramps**	**TWSC**	**C**	**52.9**	**F**	**no**	**57.8**	**F**	**YES**
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.8	B	no	11.0	B	no
5	SR151/Ashby Road	TWSC	C	16.3	C	no	14.7	B	no
6	SR151(WB)/Montana Avenue	TWSC	C	15.9	C	no	16.5	C	no
7	SR151(EB)/Montana Avenue	TWSC	C	20.2	C	no	15.8	C	no
8	**SR151/Median Avenue**	**TWSC**	**C**	**44.3**	**E**	**no**	**54.2**	**F**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.2	A	no	7.4	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.4	A	no	7.6	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**105.5**	**F**	**no**	**297.3**	**F**	**no**
12	Shasta Way/Front Street	TWSC	C	10.6	B	no	10.5	B	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
14	**SR151/Cascade Blvd**	**Signal**	**C**	**58.8**	**E**	**-**	**70.7**	**E**	**-**
15	SR151/I5 SB Off Ramp	Signal	C	13.0	B	-	9.9	A	-
16	**Lake Blvd/Pine Grove Avenue**	**TWSC**	**C**	19.6	C	no	**28.4**	**D**	**no**
17	Pine Grove Ave/Ashby Road	TWSC	C	18.7	C	no	22.3	C	no
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**343.8**	**F**	**no**	**OVR**	**F**	**no**
19	**Pine Grove Ave/I5 SB Ramps**	**TWSC**	**C**	19.9	C	no	**77.6**	**F**	**YES**
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	**47.6**	**E**	**no**	**392.2**	**F**	**YES**
21	Pine Grove Ave/Twin View Blvd.	TWSC	C	15.3	C	no	17.2	C	no
22	**Oasis Rd/Cascade Blvd**	**Signal**	**C**	**41.6**	**D**	**-**	**44.0**	**D**	**-**
23	Oasis Rd/I5 SB Ramps	Signal	C	8.4	A	-	10.9	B	-
24	**Oasis Rd/I5 NB Ramps**	**Signal**	**C**	19.8	B	-	**41.0**	**D**	**-**
25	Oasis Rd/Twin View Blvd	Signal	C	27.3	C	-	30.0	C	-
26	SR273/Caterpillar Road	Signal	D	35.3	D	-	26.8	C	-
27	SR273/Northpoint Drive	Signal	D	16.3	B	-	21.6	C	-
28	SR273/Lake Blvd (SR299)	Signal	D	33.7	C	-	45.1	D	-
29	SR299/I5 SB Ramps	Signal	D	13.2	B	-	22.2	C	-
30	SR299/I5 NB Ramps	Signal	D	21.2	C	-	22.7	C	-
31	Cypress Avenue/Bechelli Lane	Signal	C	25.9	C	-	33.4	C	-
32	**Cypress Avenue/I5 SB Ramps**	**Signal**	**D**	24.5	C	-	**60.2**	**E**	**-**
33	Cypress Avenue/I5 NB Ramps	Signal	D	29.8	C	-	53.1	D	-
34	**Cypress Avenue/Hilltop Drive**	**Signal**	**C**	20.1	C	-	**35.7**	**D**	**-**

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

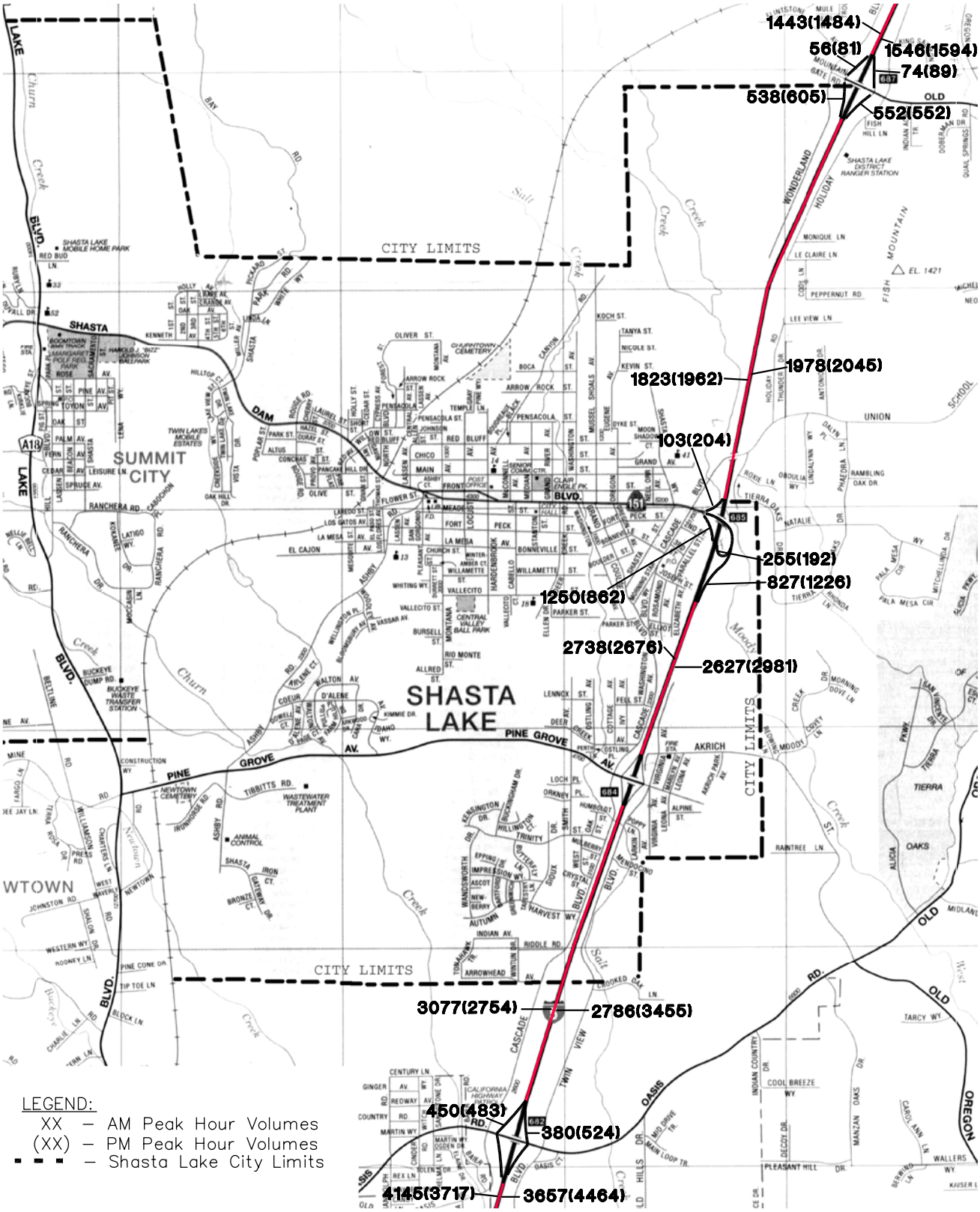
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Mountain Gate at Shasta Lake

Figure 12A

Year 2020 Plus Project Intersection Traffic Volumes

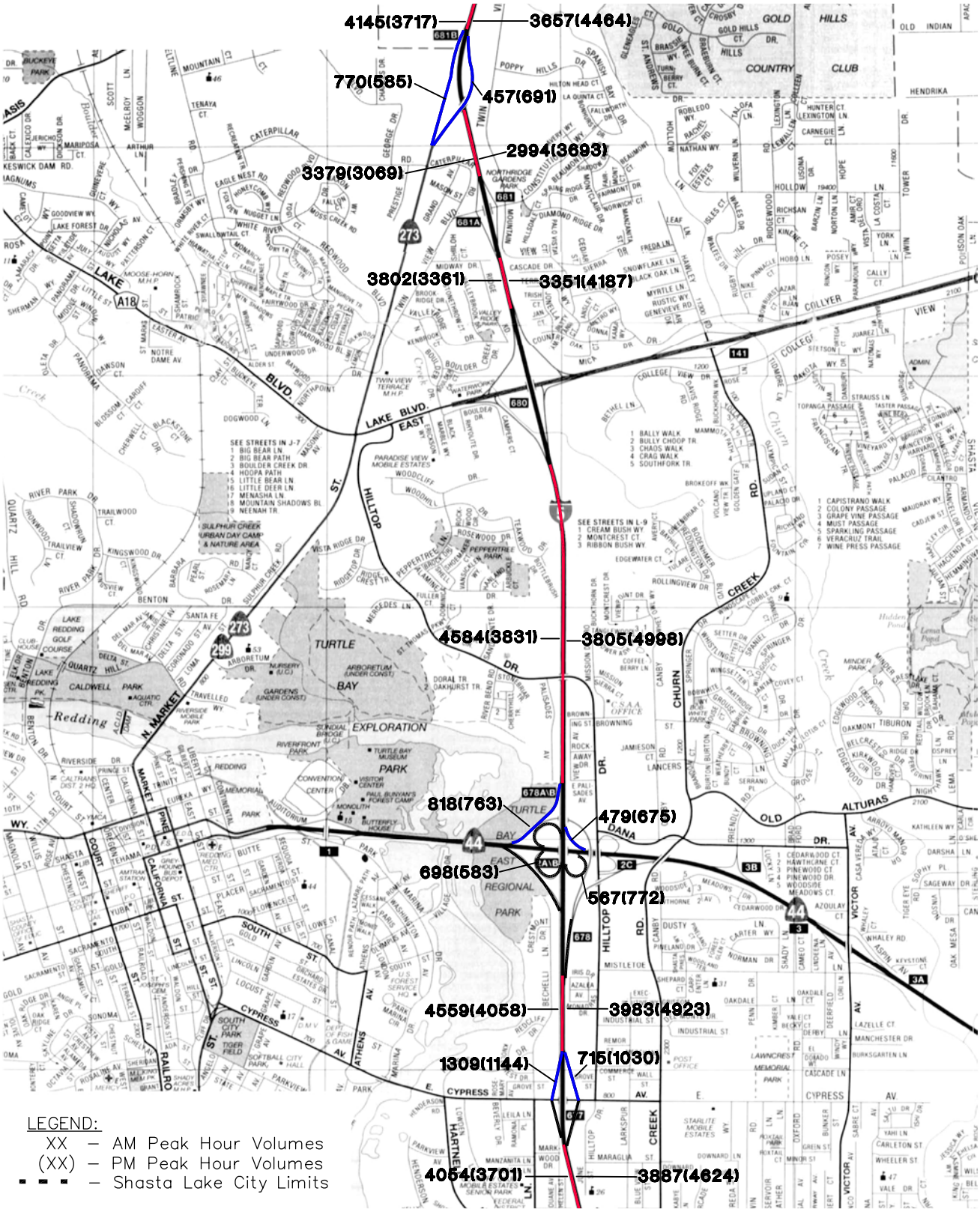
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Mountain Gate at Shasta Lake Figure 12B

2020 Plus Project Mainline & Ramp Volumes Northern Study Area

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Mountain Gate at Shasta Lake Figure 12C

2020 Plus Project Mainline & Ramp Volumes Southern Study Area

T946TG31.dwg (031907) 45–5130–14

Based on a comparison of LOS between "no project" and "plus project" conditions as presented in Tables 9A and 10A, respectively, the following intersections that were found to be operating at unacceptable LOS under "no project" conditions would continue to operate unacceptably with the addition of project traffic:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street (would continue to meet the warrant)
- Pine Grove Avenue/Cascade Boulevard
- Pine Grove Avenue/I-5 SB Ramps (meets the warrant with the addition of project traffic)
- Pine Grove Avenue/I-5 NB Ramps (would continue to meet the warrant)
- Oasis Road/Cascade Boulevard
- Cypress Avenue/I-5 SB Ramps

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following intersections.

- Wonderland Boulevard/Mt Gate Road (meets the warrant with the addition of project traffic)
- Mountain Gate Road/I-5 NB Ramps (meets the warrant with the addition of project traffic)
- SR 151/Cascade Boulevard
- Lake Boulevard/Pine Grove Avenue
- Oasis Road/I-5 NB Ramps
- Cypress Avenue/I-5 NB Ramps

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2020 Plus Project daily traffic operations along roadway segments were analyzed by comparing derived *Year 2020 Plus Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 2) that corresponds to the roadway type assumed for *Year 2020 Plus Project* conditions following implementation of planned improvements as described earlier. **Table 10B** contains a summary of the *Year 2020 Plus Project* roadway segment LOS conditions.

TABLE 10B
YEAR 2020 PLUS PROJECT CONDITIONS ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	8,970	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	5,090	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,540	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	830	B
Main St.- Between Washington Ave. and Grand River Ave.	Residential	790	B
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector with Frontages	2,450	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	2,890	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	6,100	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	4,860	A
Pine Grove Ave. - west of Cascade Blvd.	2-Lane Undivided Arterial	6,430	A
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	17,180	A

As shown in Table 10B, all of the roadway segments would operate at acceptable LOS on a daily basis under *Year 2020 Plus Project* conditions.

FREEWAY MAINLINE SEGMENTS

Year 2020 Plus Project mainline operations were evaluated utilizing the peak hour volumes shown on Figure 12B and 12C. **Table 10C** summarizes *Year 2020 Plus Project* conditions' I-5 freeway mainline operations.

TABLE 10C
YEAR 2020 PLUS PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**3,887**	**38.8**	**E**	**4,624**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**4,054**	**42.9**	**E**	**3,701**	**35.0**	**E**
I-5 NB, north of Cypress Avenue I/C	**3**	**D**	3,983	25.5	C	**4,923**	**35.2**	**E**
I-5 SB, north of Cypress Avenue I/C	3	D	4,559	30.8	D	4,058	26.1	D
I-5 NB, north of SR 44 I/C	**2**	**D**	**3,805**	**37.0**	**E**	**4,998**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**4,584**	**OVR**	**F**	**3,831**	**37.6**	**E**
I-5 NB, north of SR 299 I/C	**2**	**D**	3,351	29.6	D	**4,187**	**OVR**	**F**
I-5 SB, north of SR 299 I/C	**2**	**D**	**3,802**	**37.0**	**E**	3,361	29.7	D
I-5 NB, north of Twin View Blvd I/C	2	D	2,994	25.4	C	3,693	34.9	D
I-5 SB, north of Twin View Blvd I/C	2	D	3,379	30.0	D	3,069	26.2	D
I-5 NB, north of SR 273 I/C	3	D	3,657	20.6	C	4,464	25.7	C
I-5 SB, north of SR 273 I/C	3	D	4,145	23.5	C	3,717	20.9	C
I-5 NB, north of Oasis Road I/C	3	D	2,786	16.9	B	3,455	21.0	C
I-5 SB, north of Oasis Road I/C	3	D	3,077	18.7	C	2,754	16.7	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	2,627	16.7	B	2,981	18.6	C
I-5 SB, north of Pine Grove Avenue I/C	3	C	2,738	17.2	B	2,676	16.8	B
I-5 NB, north of SR 151 I/C	2	C	1,978	19.0	C	2,045	19.4	C
I-5 SB, north of SR 151 I/C	2	C	1,823	17.6	B	1,962	18.7	C
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,546	13.8	B	1,594	14.3	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,443	12.9	B	1,484	13.3	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

Based on a comparison of LOS between "no project" and "plus project" conditions as presented in Tables 9C and 10C, respectively, the following I-5 mainline segments that were found to be operating at unacceptable LOS under "no project" conditions would continue to operate unacceptably with the addition of project traffic

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following freeway mainline segments.

- I-5 NB, north of Cypress Avenue I/C
- I-5 SB, north of SR 299 I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

RAMP JUNCTIONS

Year 2020 Plus Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figure 12B and 12C. **Table 10D** summarizes *Year 2020 Plus Project* conditions' ramp merge/diverge operations.

TABLE 10D
YEAR 2020 PLUS PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	**715**	**39.3**	**F**	**1,030**	**41.0**	**F**
I-5 SB Off-Ramp	Diverge	D	1,309	30.1	D	1,144	28.7	D
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	**Merge**	**D**	567	31.6	D	**772**	**40.6**	**F**
I-5 NB Direct On-Ramp	Merge	D	479	24.3	C	905	31.3	D
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**818**	**50.5**	**F**	**763**	**42.9**	**F**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**698**	**43.5**	**F**	**583**	**38.0**	**E**
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	457	29.1	D	**691**	**36.3**	**F**
I-5 SB Off-Ramp	Diverge	D	770	30.1	D	585	27.5	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	380	17.2	B	524	21.3	C
I-5 SB Off-Ramp	Diverge	D	450	22.8	C	483	21.0	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	827	22.8	C	1,226	27.3	C
I-5 NB On-Ramp	Merge	C	255	12.7	B	192	12.9	B
I-5 SB Off-Ramp	Diverge	C	103	20.0	C	204	21.5	C
I-5 SB On-Ramp	Merge	C	1,250	27.4	C	862	24.6	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	552	25.5	C	552	25.9	C
I-5 NB On-Ramp	Merge	C	74	20.1	C	89	20.6	C
I-5 SB Off-Ramp	Diverge	C	56	19.4	B	81	19.9	B
I-5 SB On-Ramp	Merge	C	538	19.3	B	605	20.0	C

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

Based on a comparison of "no project" vs. "plus project" ramp merge/diverge LOS as presented in Table 9D and Table 10D, respectively, the following ramp merge/diverge junctions which were found to operate unacceptably for *Year 2010 No Project* conditions would continue to operate at unacceptable LOS with the addition of project traffic:

- I-5 & Cypress Avenue - NB On-Ramp
- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp
- I-5 & SR 273 – NB On-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2030 CONDITIONS

Within this analysis, Year 2030 conditions are assumed as those that will exist in the year 2030 consistent with land use assumptions included within the latest version of the Shasta County Travel Demand Model with changes as identified in Appendix Table 1A. *Year 2030 No Project* conditions assume that the Mountain Gate at Shasta Lake would remain undeveloped (i.e., a "vacant" project site) through year 2030, and year 2030 model land uses are assumed elsewhere. *Year 2030 Plus Project* conditions were then simulated by superimposing the proposed project-generated traffic on top of the *Year 2030 No Project* traffic volumes. The *Year 2030 Plus Project* conditions assumes full build out of the proposed Mountain Gate at Shasta Lake project.

PLANNED/PROGRAMMED IMPROVEMENTS – INTERSECTIONS

The City of Redding approved the Oasis Road Specific Plan Master EIR in 2006, which analyzed operations on Oasis Road and other facilities in the vicinity of the project site. The baseline lane geometrics and control as shown in Figure 10 is assumed for year 2030 conditions for intersections analyzed along the Oasis Road corridor. Intersection lane geometrics and control at other study locations are assumed to be identical to those depicted in (Figure 2 Existing Conditions).

It should be noted that circulation improvements included within the Year 2020 version of the model are not listed here.

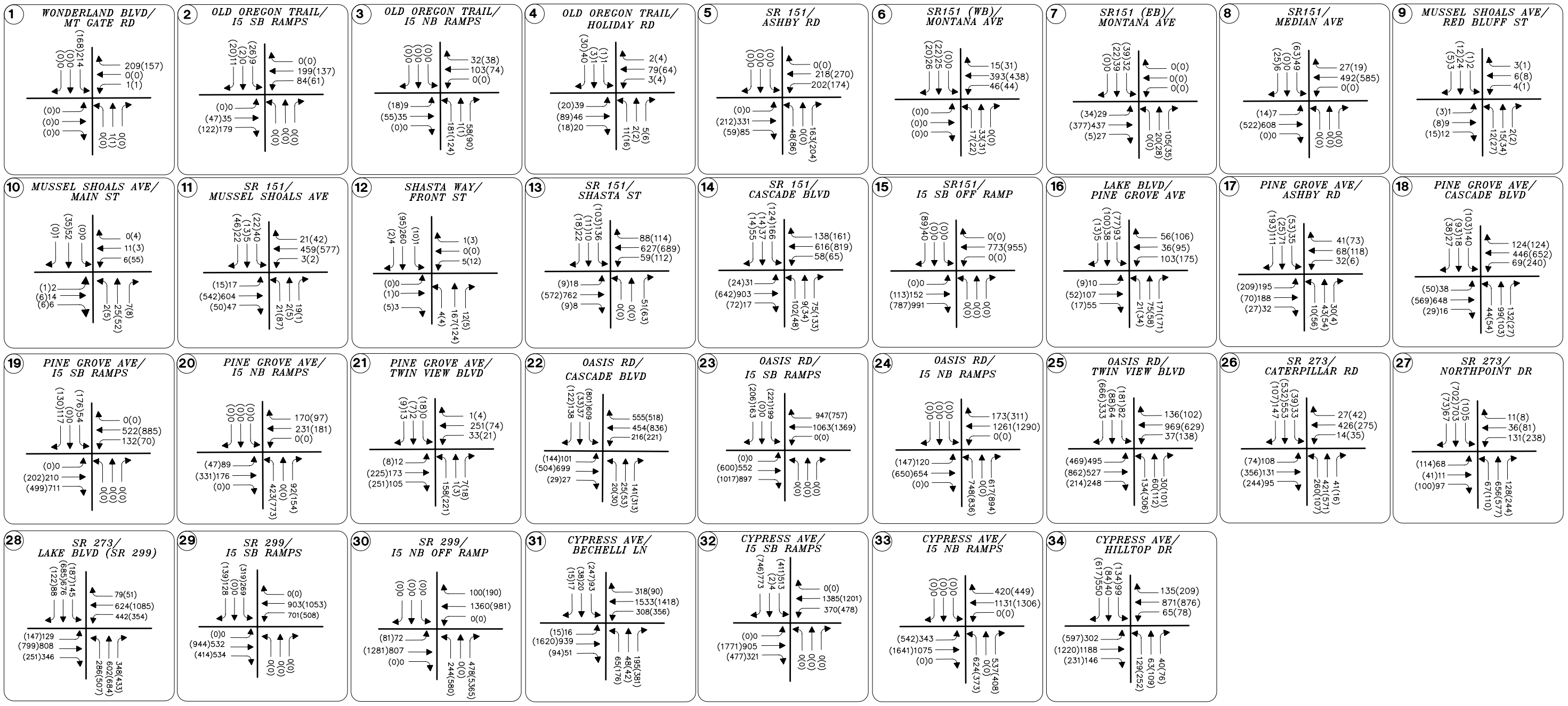
TRAFFIC VOLUMES

The traffic volumes for the Year 2030 analysis were derived from the January 2007 version of the Shasta County Travel Demand Model. The land use and the resulting trip generation information for the proposed Mountain Gate at Shasta Lake project was included in the Travel Demand Model for Year 2030 conditions. Trips from the proposed project were "zeroed out", which resulted in Year 2030 volumes that did not include the project volumes. The difference of the derived volumes for the *Year 2030* and *Year 2004* (Calibrated Year) as obtained from the Travel Demand Model were added to the existing volumes to obtain the *Year 2030 No Project* volumes. The *2030 Plus Project* volumes were obtained by super-imposing project traffic on top of the *2030 No Project* volumes.

To assess the impacts of the Mountain Gate at Shasta Lake project on the study intersections and roadways, the study analyzed the following 2030 scenarios:

- *Year 2030 No Project* conditions
- *Year 2030 Plus Project* conditions

Figure 13A depicts the *Year 2030 No Project* intersection volumes, while **Figures 13B** and **13C** depict the mainline and ramp volumes.



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

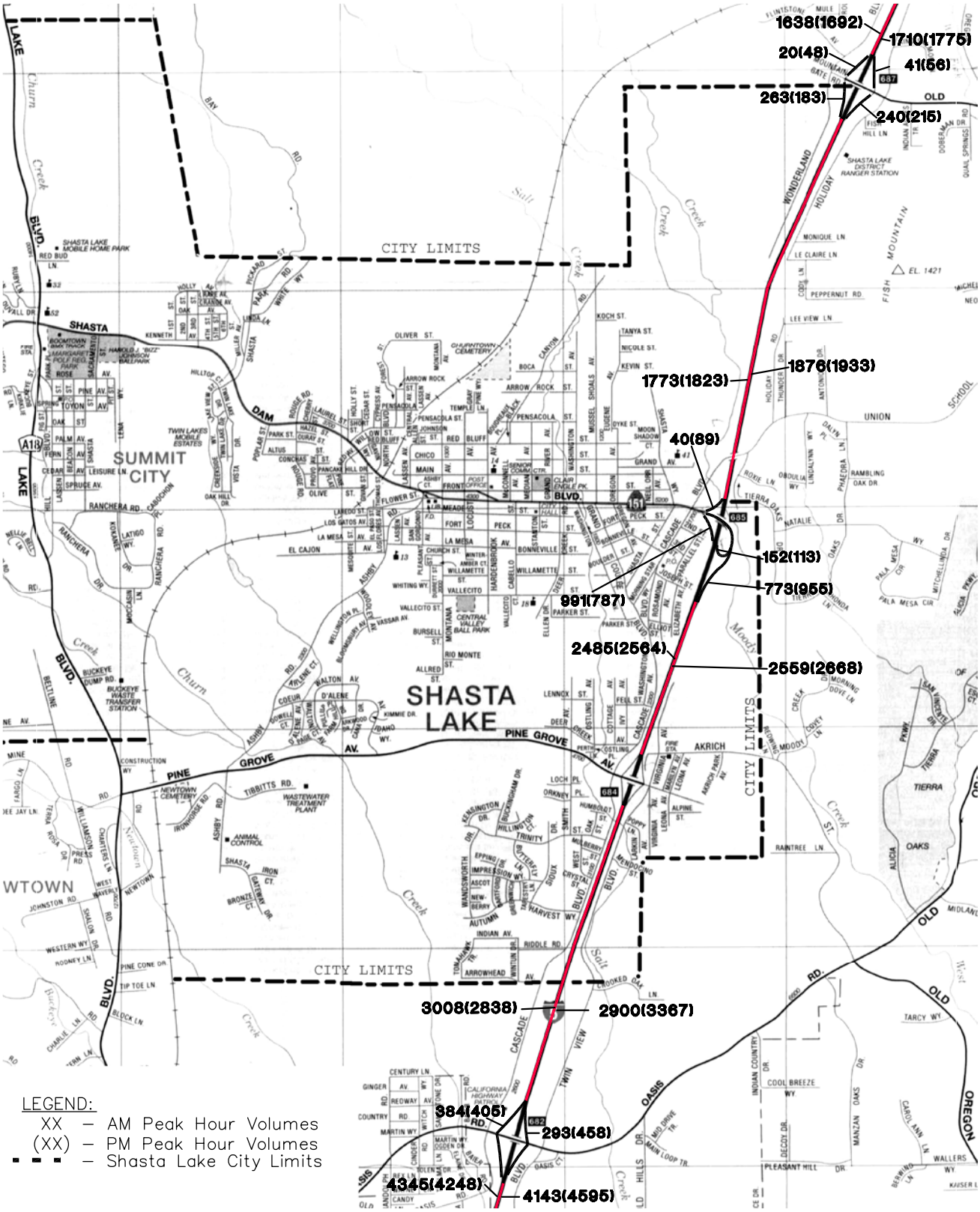
(xxx) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 13A

Year 2030 No Project Intersection Traffic Volumes

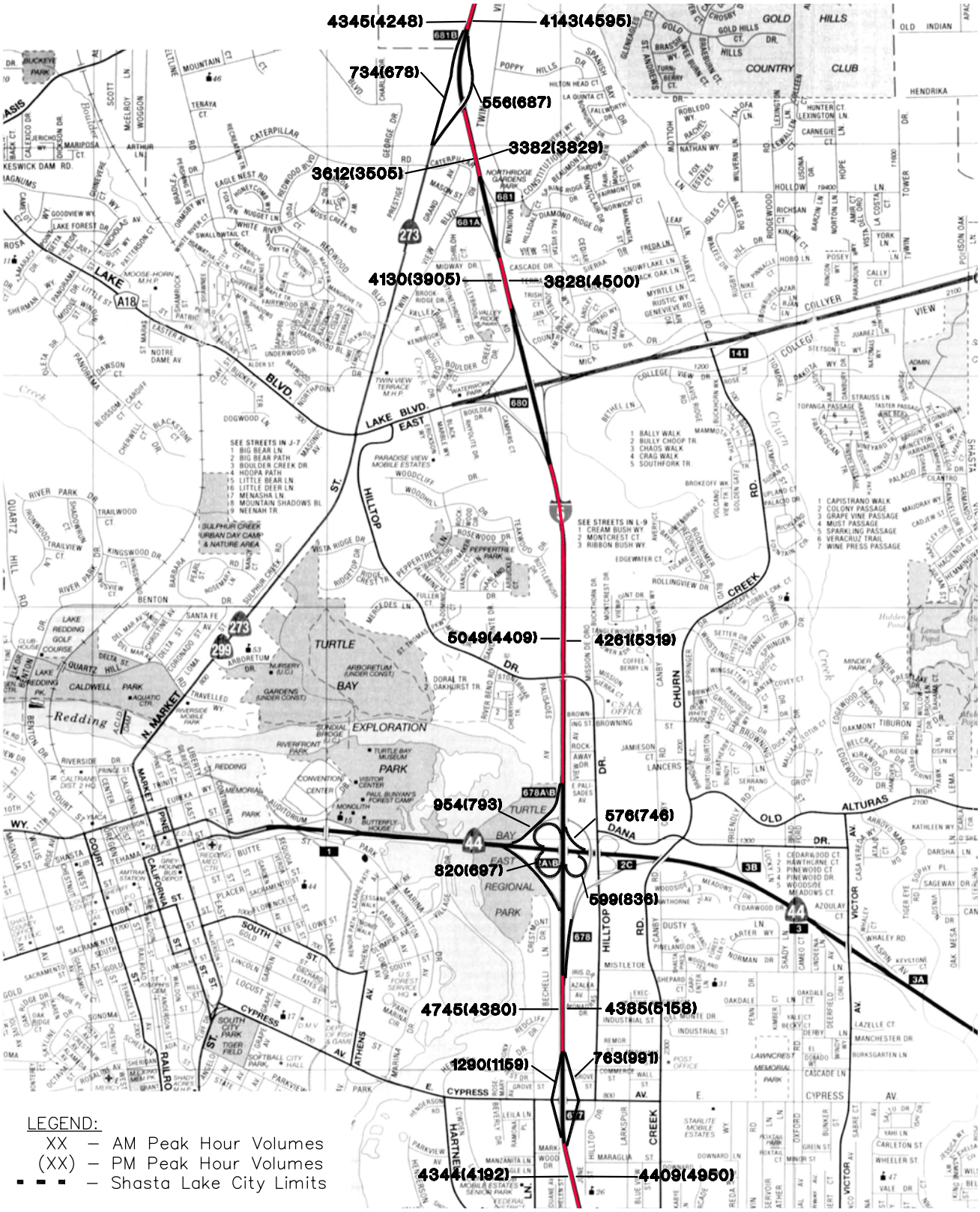
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Mountain Gate at Shasta Lake Figure 13B

2030 No Project Mainline & Ramp Volumes Northern Study Area

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Mountain Gate at Shasta Lake

Figure 13C

2030 No Project Mainline & Ramp Volumes Southern Study Area

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YEAR 2030 NO PROJECT TRAFFIC OPERATIONS

Year 2030 No Project conditions were quantified by using derived year 2030 intersection and roadway traffic volumes (excluding the proposed project) and lane geometrics and control shown on Figures 2 and 10.

INTERSECTIONS

Table 11A provides a summary of the resulting *Year 2030 No Project* intersection LOS.

TABLE 11A
YEAR 2030 NO PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	Wonderland Blvd/Mt Gate Road	TWSC	C	11.0	B	no	10.2	B	no
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	11.6	B	no	11.3	B	no
3	Mountain Gate Rd./I5 NB Ramps	TWSC	C	11.8	B	no	11.2	B	no
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.4	B	no	10.4	B	no
5	SR151/Ashby Road	TWSC	C	17.1	C	no	16.7	C	no
6	SR151(WB)/Montana Avenue	TWSC	C	15.3	C	no	16.3	C	no
7	SR151(EB)/Montana Avenue	TWSC	C	18.7	C	no	15.4	C	no
8	**SR151/Median Avenue**	**TWSC**	**C**	**29.5**	**D**	**no**	**32.8**	**D**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.1	A	no	7.2	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.2	A	no	7.5	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**35.3**	**E**	**no**	**149.8**	**F**	**no**
12	Shasta Way/Front Street	TWSC	C	12.2	B	no	10.4	B	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
14	SR151/Cascade Blvd	Signal	C	24.6	C	-	22.6	C	-
15	SR151/I5 SB Off Ramp	Signal	C	9.4	A	-	9.2	A	-
16	**Lake Blvd/Pine Grove Avenue**	**TWSC**	**C**	21.2	C	no	**36.4**	**E**	**no**
17	**Pine Grove Ave/Ashby Road**	**TWSC**	**C**	20.3	C	no	**31.9**	**D**	**no**
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
19	**Pine Grove Ave/I5 SB Ramps**	**TWSC**	**C**	**35.4**	**E**	**YES**	**567.3**	**F**	**YES**
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	**325.2**	**F**	**YES**	**860.7**	**F**	**YES**
21	**Pine Grove Ave/Twin View Blvd.**	**TWSC**	**C**	23.6	C	no	**25.7**	**D**	**no**
22	**Oasis Rd/Cascade Blvd**	**Signal**	**C**	**37.1**	**D**	-	**86.9**	**F**	-
23	Oasis Rd/I5 SB Ramps	Signal	C	14.4	B	-	10.6	B	-
24	**Oasis Rd/I5 NB Ramps**	**Signal**	**C**	25.7	C	-	**44.9**	**D**	-
25	**Oasis Rd/Twin View Blvd**	**Signal**	**C**	30.7	C	-	**43.0**	**D**	-
26	SR273/Caterpillar Road	Signal	D	35.6	D	-	27.1	C	-
27	SR273/Northpoint Drive	Signal	D	16.9	B	-	23.6	C	-
28	**SR273/Lake Blvd (SR299)**	**Signal**	**D**	36.7	D	-	**58.7**	**E**	-
29	SR299/I5 SB Ramps	Signal	D	15.2	B	-	22.5	C	-
30	SR299/I5 NB Ramps	Signal	D	22.2	C	-	25.6	C	-
31	Cypress Avenue/Bechelli Lane	Signal	C	21.0	C	-	32.9	C	-
32	**Cypress Avenue/I5 SB Ramps**	**Signal**	**D**	29.1	C	-	**84.7**	**F**	-
33	**Cypress Avenue/I5 NB Ramps**	**Signal**	**D**	37.1	D	-	**58.6**	**E**	-
34	**Cypress Avenue/Hilltop Drive**	**Signal**	**C**	25.3	C	-	**42.6**	**D**	-

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant

As shown in Table 11A, the following intersections are projected to operate at unacceptable LOS at least during one peak hour period:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street (would meet the warrant)
- Lake Boulevard/Pine Grove Avenue
- Pine Grove Avenue/Ashby Road
- Pine Grove Avenue/Cascade Boulevard (would meet the warrant)
- Pine Grove Avenue/I-5 SB Ramps (would meet the warrant)
- Pine Grove Avenue/I-5 NB Ramps (would meet the warrant)
- Pine Grove Avenue/Twin View Boulevard
- Oasis Road/Cascade Boulevard
- Oasis Road/I-5 NB Ramps
- Oasis Road/Twin View Boulevard
- SR 273/Lake Boulevard (SR 299)
- Cypress Avenue/I-5 SB Ramps
- Cypress Avenue/I-5 NB Ramps
- Cypress Avenue/Hilltop Drive

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2030 No Project daily traffic operations along roadway segments were analyzed by comparing derived *Year 2030 No Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 1) that corresponds to the roadway type assumed for *Year 2030 No Project* conditions following implementation of planned improvements as described earlier. **Table 11B** contains a summary of the *Year 2030 No Project* roadway segment LOS conditions.

TABLE 11B
YEAR 2030 NO PROJECT CONDITIONS ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	8,840	A
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	5,760	A
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,500	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	510	A
Main St.- Between Washington Ave. and Grand River Ave.	Residential	680	B
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector	1,910	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	2,700	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	6,660	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	5,200	A
Pine Grove Ave. - west of Cascade Blvd.	**2-Lane Undivided Arterial**	**14,720**	**E**
SR273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	20,330	A

As indicated in Table 11B, all of the study roadway segments with the exception of Pine Grove Avenue to the west of Cascade Boulevard would operate at acceptable LOS on a daily basis under *Year 2030 No Project* conditions.

FREEWAY MAINLINE SEGMENTS

Year 2030 No Project mainline operations were evaluated utilizing the peak hour volumes shown on Figure 13B and 13C. **Table 11C** summarizes *Year 2030 No Project* conditions' I-5 freeway mainline operations.

TABLE 11C
YEAR 2030 NO PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**4,409**	**OVR**	**F**	**4,950**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**4,344**	**OVR**	**F**	**4,192**	**OVR**	**F**
I-5 NB, north of Cypress Avenue I/C	**3**	**D**	4,385	28.9	D	**5,158**	**38.8**	**E**
I-5 SB, north of Cypress Avenue I/C	3	D	4,745	32.9	D	4,380	29.0	D
I-5 NB, north of SR 44 I/C	**2**	**D**	**4,261**	**OVR**	**F**	**5,319**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**5,049**	**OVR**	**F**	**4,409**	**OVR**	**F**
I-5 NB, north of SR 299 I/C	**2**	**D**	**3,828**	**37.5**	**E**	**4,500**	**OVR**	**F**
I-5 SB, north of SR 299 I/C	**2**	**D**	**4,130**	**OVR**	**F**	**3,905**	**39.2**	**E**
I-5 NB, north of Twin View Blvd I/C	**2**	**D**	3,382	30.0	D	**3,829**	**37.5**	**E**
I-5 SB, north of Twin View Blvd I/C	2	D	3,612	33.5	D	3,505	31.8	D
I-5 NB, north of SR 273 I/C	3	D	4,143	23.5	C	4,595	26.6	D
I-5 SB, north of SR 273 I/C	3	D	4,345	24.8	C	4,248	24.2	C
I-5 NB, north of Oasis Road I/C	3	D	2,900	17.6	B	3,367	20.5	C
I-5 SB, north of Oasis Road I/C	3	D	3,008	18.3	C	2,838	17.2	B
I-5 NB, north of Pine Grove Avenue I/C	3	C	2,559	16.3	B	2,668	16.7	B
I-5 SB, north of Pine Grove Avenue I/C	3	C	2,485	15.6	B	2,564	16.2	B
I-5 NB, north of SR 151 I/C	2	C	1,876	18.1	C	1,933	18.4	C
I-5 SB, north of SR 151 I/C	2	C	1,773	17.2	B	1,823	17.4	B
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,710	15.3	B	1,775	15.9	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,638	14.7	B	1,692	15.1	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

As shown in Table 11C, the following mainline segments are projected to operate at unacceptable LOS conditions at least during one peak hour period:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C
- I-5 SB, north of SR 299 I/C
- I-5 NB, north of Twin View Boulevard I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

RAMP JUNCTIONS

Year 2030 No Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figure 13B and 13C. **Table 11D** summarizes *Year 2030 No Project* conditions' ramp merge/diverge operations.

TABLE 11D
YEAR 2030 NO PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	**763**	**36.1**	**F**	**991**	**42.9**	**F**
I-5 SB Off-Ramp	Diverge	D	1,290	30.7	D	1,159	30.1	D

			AM Peak Hour			PM Peak Hour		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	**Merge**	**D**	599	34.6	D	**836**	**42.4**	**F**
I-5 NB Direct On-Ramp	Merge	D	576	26.8	C	1,018	33.0	D
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**954**	**54.8**	**F**	**793**	**48.4**	**F**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**820**	**45.2**	**F**	**697**	**40.4**	**E**

			AM Peak Hour			PM Peak Hour		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	**556**	**33.2**	**F**	**687**	**37.1**	**F**
I-5 SB Off-Ramp	Diverge	D	734	30.5	D	678	29.9	D

			AM Peak Hour			PM Peak Hour		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	293	17.3	B	458	20.3	C
I-5 SB Off-Ramp	Diverge	D	384	21.8	C	405	20.9	C

			AM Peak Hour			PM Peak Hour		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	773	20.8	C	955	21.9	C
I-5 NB On-Ramp	Merge	C	152	12.2	B	113	11.5	B
I-5 SB Off-Ramp	Diverge	C	40	19.5	B	89	20.5	C
I-5 SB On-Ramp	Merge	C	991	17.4	B	787	17.4	B

			AM Peak Hour			PM Peak Hour		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	240	24.3	C	215	24.6	C
I-5 NB On-Ramp	Merge	C	41	21.7	C	56	22.3	C
I-5 SB Off-Ramp	Diverge	C	20	21.5	C	48	22.0	C
I-5 SB On-Ramp	Merge	C	263	19.3	B	183	18.9	B

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

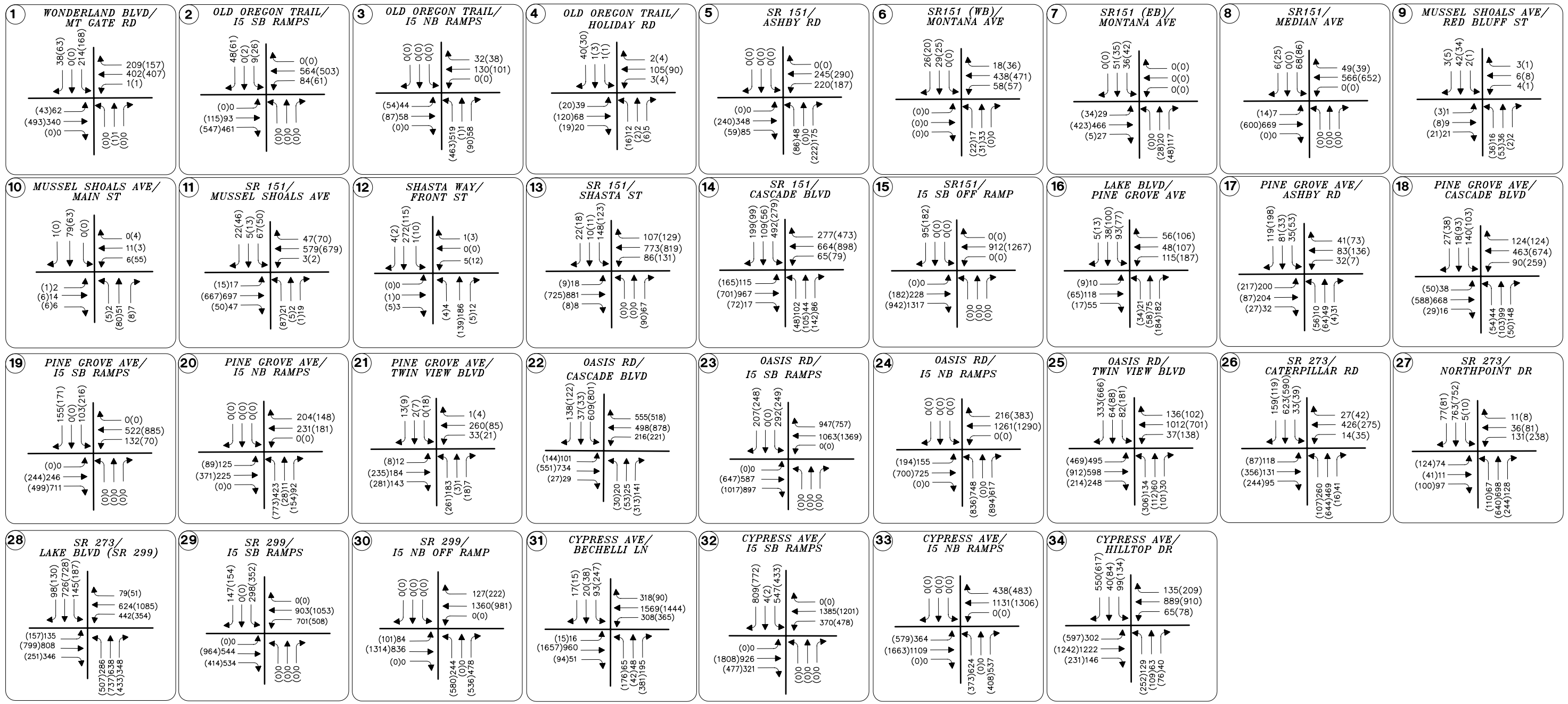
As indicated in Table 11D, the following ramp merge/diverge, junctions are projected to operate at unacceptable LOS conditions at least during one peak hour period.

- I-5 & Cypress Avenue - NB On-Ramp
- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp
- I-5 & SR 273 - NB On-Ramp

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2030 PLUS PROJECT TRAFFIC OPERATIONS

Year 2030 Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2030 No Project* traffic volumes at the study intersections, roadway segments, mainline and ramp junctions. The resulting *Year 2030 Plus Project* intersection and roadway traffic volumes are illustrated on **Figure 14A** and the mainline and ramp junction volumes are shown on **Figures 14B** and **14C**.



LEGEND:

xxx – AM PEAK HOUR TRAFFIC VOLUMES

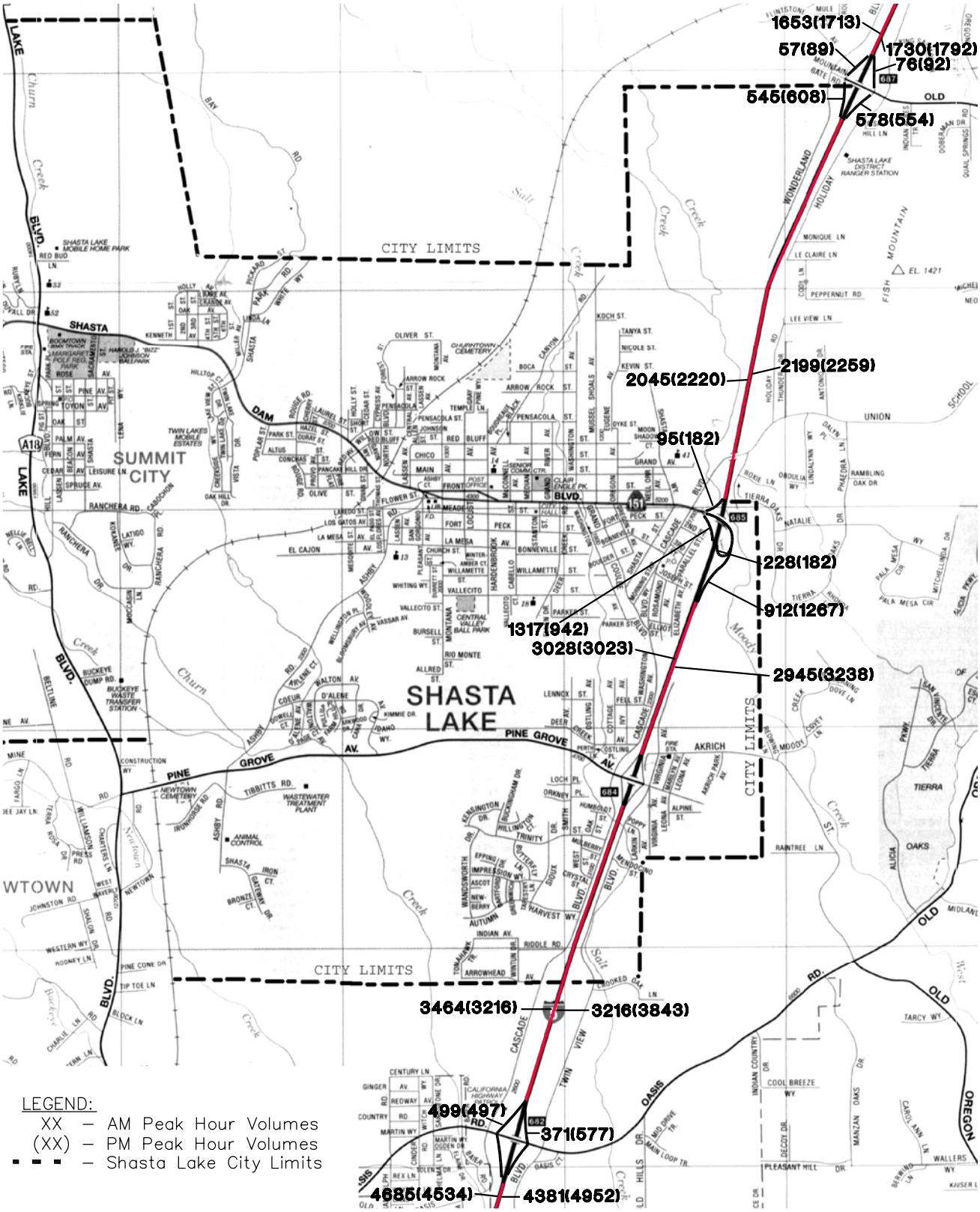
(xxx) – PM PEAK HOUR TRAFFIC VOLUMES

Mountain Gate at Shasta Lake

Figure 14A

Year 2030 Plus Project Intersection Traffic Volumes

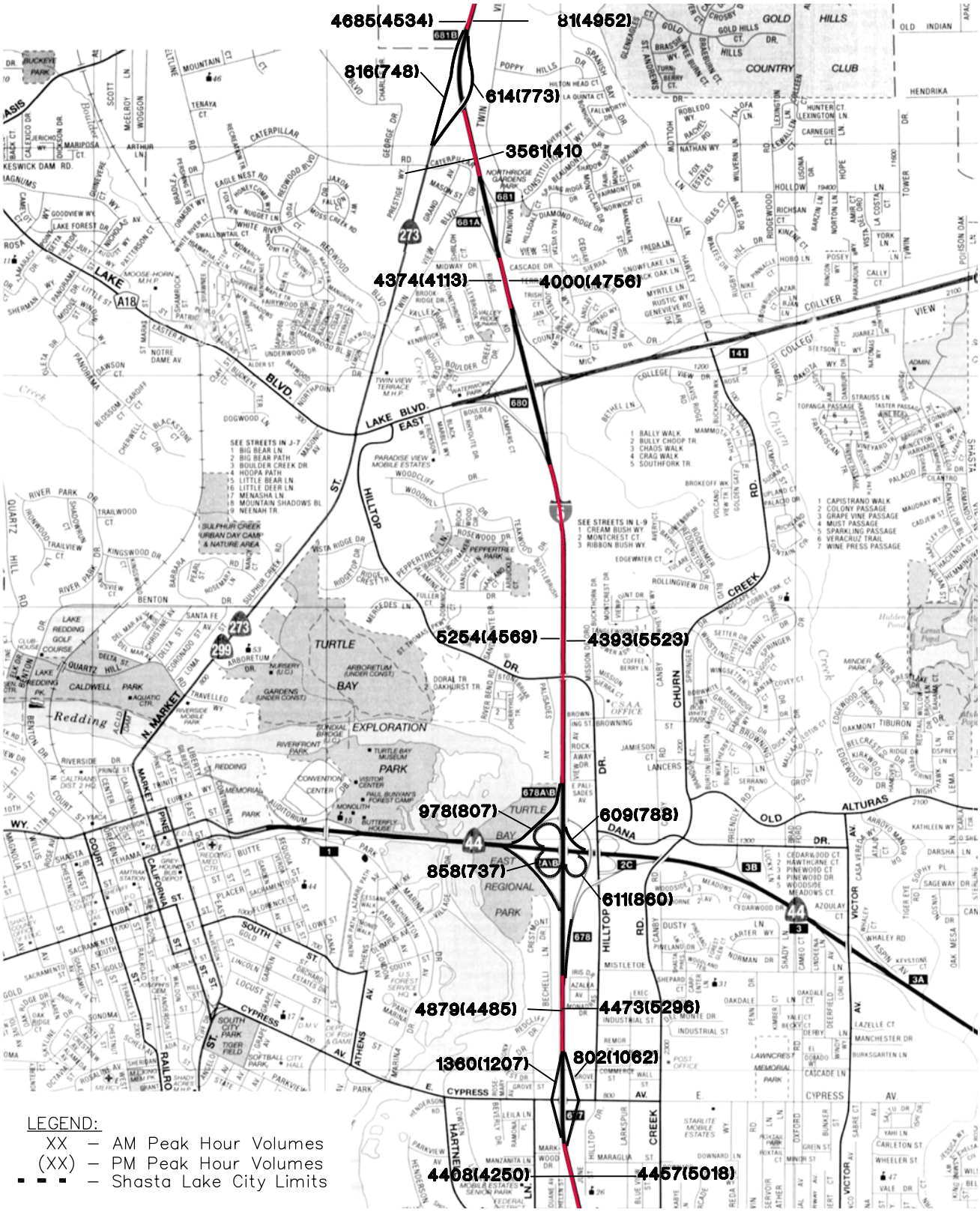
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Mountain Gate at Shasta Lake Figure 14B

2030 Plus Project Mainline & Ramp Volumes Northern Study Area

T946TG32.dwg (22MAR07) 45–5130–14



Mountain Gate at Shasta Lake Figure 14C

2030 Plus Project Mainline & Ramp Volumes Southern Study Area

T946TG33.dwg (031907) 45–5130–14

INTERSECTIONS

Table 12A provides a summary of the resulting *Year 2030 Plus Project* intersection LOS.

TABLE 12A
YEAR 2030 PLUS PROJECT INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	**Wonderland Blvd/Mt Gate Road**	**TWSC**	**C**	**226.7**	**F**	**YES**	**200.8**	**F**	**YES**
2	Mountain Gate Rd./I5 SB Ramps	TWSC	C	17.1	C	no	21.6	C	no
3	**Mountain Gate Rd./I5 NB Ramps**	**TWSC**	**C**	**65.0**	**F**	**YES**	**59.5**	**F**	**YES**
4	Mountain Tgate Rd./Holiday Road	TWSC	C	10.9	B	no	10.9	B	no
5	SR151/Ashby Road	TWSC	C	18.6	C	no	18.4	C	no
6	SR151(WB)/Montana Avenue	TWSC	C	16.8	C	no	17.9	C	no
7	SR151(EB)/Montana Avenue	TWSC	C	21.1	C	no	17.3	C	no
8	**SR151/Median Avenue**	**TWSC**	**C**	**47.3**	**E**	**no**	**65.1**	**F**	**no**
9	Mussel Shoals Ave/Red Bluff St	AWSC	C	7.3	A	no	7.4	A	no
10	Mussel Shoals Ave/Main Street	AWSC	C	7.4	A	no	7.7	A	no
11	**SR151/Mussel Shoals Avenue**	**TWSC**	**C**	**114.4**	**F**	**no**	**386.4**	**F**	**YES**
12	Shasta Way/Front Street	TWSC	C	12.5	B	no	10.7	B	no
13	**SR151/Shasta Street**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
14	**SR151/Cascade Blvd**	**Signal**	**C**	**55.8**	**E**	**-**	**83.2**	**F**	**-**
15	SR151/I5 SB Off Ramp	Signal	C	16.1	B	-	9.6	A	-
16	**Lake Blvd/Pine Grove Avenue**	**TWSC**	**C**	25.0	C	no	**49.2**	**E**	**no**
17	**Pine Grove Ave/Ashby Road**	**TWSC**	**C**	22.8	C	no	**38.0**	**E**	**no**
18	**Pine Grove Ave/Cascade Blvd**	**TWSC**	**C**	**OVR**	**F**	**YES**	**OVR**	**F**	**YES**
19	**Pine Grove Ave/I5 SB Ramps**	**TWSC**	**C**	**127.7**	**F**	**YES**	**869.9**	**F**	**YES**
20	**Pine Grove Ave/I5 NB Ramps**	**TWSC**	**C**	**565.3**	**F**	**YES**	**OVR**	**F**	**YES**
21	**Pine Grove Ave/Twin View Blvd.**	**TWSC**	**C**	**30.0**	**D**	**no**	**37.2**	**E**	**no**
22	**Oasis Rd/Cascade Blvd**	**Signal**	**C**	**38.4**	**D**	**-**	**88.2**	**F**	**-**
23	Oasis Rd/I5 SB Ramps	Signal	D	14.5	B	-	13.8	B	-
24	**Oasis Rd/I5 NB Ramps**	**Signal**	**D**	29.6	C	-	**57.0**	**E**	-
25	**Oasis Rd/Twin View Blvd**	**Signal**	**C**	31.4	C	-	**47.4**	**D**	-
26	SR273/Caterpillar Road	Signal	D	38.2	D	-	27.9	C	-
27	SR273/Northpoint Drive	Signal	D	17.0	B	-	26.4	C	-
28	**SR273/Lake Blvd (SR299)**	**Signal**	**D**	39.3	D	-	**63.6**	**E**	-
29	SR299/I5 SB Ramps	Signal	D	17.2	B	-	25.9	C	-
30	SR299/I5 NB Ramps	Signal	D	24.1	C	-	27.0	C	-
31	Cypress Avenue/Bechelli Lane	Signal	C	21.1	C	-	34.9	C	-
32	**Cypress Avenue/I5 SB Ramps**	**Signal**	**D**	32.8	C	-	**89.0**	**F**	-
33	**Cypress Avenue/I5 NB Ramps**	**Signal**	**D**	42.1	D	-	**62.9**	**E**	-
34	**Cypress Avenue/Hilltop Drive**	**Signal**	**C**	25.3	C	-	**46.9**	**D**	-

Notes: **Bolded and shaded entries indicate intersections operating at unacceptable LOS**

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

Warrant = Caltrans Peak hour volume based signal warrant

Based on a comparison of LOS between "no project" and "plus project" conditions as presented in Tables 11A and 12A, respectively, the following intersections that were found to be operating at unacceptable LOS under "no project" conditions would continue to operate unacceptably with the addition of project traffic:

- SR 151/Median Avenue

- SR 151/Mussel Shoals Avenue (meets the warrant with the addition of project traffic)
- SR 151/Shasta Street (would continue to meet the warrant)
- Lake Boulevard/Pine Grove Avenue
- Pine Grove Avenue/Ashby Road
- Pine Grove Avenue/Cascade Boulevard (would continue to meet the warrant)
- Pine Grove Avenue/I-5 SB Ramps (would continue to meet the warrant)
- Pine Grove Avenue/I-5 NB Ramps (would continue to meet the warrant)
- Oasis Rd/Cascade Boulevard
- Oasis Road/I-5 NB Ramps
- Oasis Road/Twin View Boulevard
- SR 273/Lake Boulevard (SR 299)
- Cypress Avenue/I-5 SB Ramps
- Cypress Avenue/I-5 NB Ramps
- Cypress Avenue/Hilltop Drive

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following intersections.

- Wonderland Boulevard/Mt Gate Road (meets the warrant with the addition of project traffic)
- Mountain Gate Road/I-5 NB Ramps (meets the warrant with the addition of project traffic)
- SR 151/Cascade Boulevard

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ROADWAY SEGMENTS

Year 2030 Plus Project daily traffic operations along roadway segments were analyzed by comparing derived *Year 2030 Plus Project* ADT volumes to the ADT-based LOS thresholds (outlined in Table 1) that corresponds to the roadway type assumed for *Year 2030 Plus Project* conditions following implementation of planned improvements as described earlier. **Table 12B** contains a summary of the *Year 2030 Plus Project* roadway segment LOS conditions.

TABLE 12B
YEAR 2030 PLUS PROJECT CONDITIONS ROADWAY LEVELS OF SERVICE

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)
Shasta Dam Blvd. - between North Blvd. and Ashby Rd.	2-Lane Undivided Arterial	9,330	B
Ashby Rd. - between Fort Peck St. and Flower St.	2-Lane Collector	6,070	B
Montana Ave. - between Main St. and Front St.	2-Lane Collector	1,590	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	870	B
Main St.- between Washington Ave. and Grand River Ave.	Residential	900	B
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR 151)	Residential Collector	2,490	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR 151)	2-Lane Collector	2,930	A
Pine Grove Ave. - between Lake Blvd. and Ashby Rd.	2-Lane Undivided Arterial	7,170	A
Cascade Blvd. - between Pine Grove Ave. and Deer Creek Ave.	2-Lane Undivided Arterial	5,550	A
Pine Grove Ave. - west of Cascade Blvd.	**2-Lane Undivided Arterial**	**15,140**	**F**
SR 273 - between Twin View Blvd. and Lake Blvd.	4-Lane Divided Arterial	21,510	A

As shown in Table 12B, all of the study roadway segments with the exception of Pine Grove Avenue to the west of Cascade Boulevard would operate at acceptable LOS on a daily basis under *Year 2030 Plus Project*

conditions.

FREEWAY MAINLINE SEGMENTS

Year 2030 Plus Project mainline operations were evaluated utilizing the peak hour volumes shown on Figures 14B and 14C. **Table 12C** summarizes *Year 2030 Plus Project* conditions' I-5 freeway mainline operations.

TABLE 12C
YEAR 2030 PLUS PROJECT FREEWAY MAINLINE LEVELS OF SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour			PM Peak Hour		
			Volume	Density, (pc/mi/ln)	LOS	Volume	Density, (pc/mi/ln)	LOS
I-5 NB, south of Cypress Avenue I/C	**2**	**D**	**4,457**	**OVR**	**F**	**5,018**	**OVR**	**F**
I-5 SB, south of Cypress Avenue I/C	**2**	**D**	**4,408**	**OVR**	**F**	**4,250**	**OVR**	**F**
I-5 NB, north of Cypress Avenue I/C	**3**	**D**	4,473	29.9	D	**5,296**	**41.3**	**E**
I-5 SB, north of Cypress Avenue I/C	3	D	4,879	34.6	D	4,485	30.0	D
I-5 NB, north of SR 44 I/C	**2**	**D**	**4,393**	**OVR**	**F**	**5,523**	**OVR**	**F**
I-5 SB, north of SR 44 I/C	**2**	**D**	**5,245**	**OVR**	**F**	**4,569**	**OVR**	**F**
I-5 NB, north of SR 299 I/C	**2**	**D**	**4,000**	**41.5**	**E**	**4,756**	**OVR**	**F**
I-5 SB, north of SR 299 I/C	**2**	**D**	**4,374**	**OVR**	**F**	**4,113**	**43.2**	**E**
I-5 NB, north of Twin View Blvd I/C	**2**	**D**	3,561	32.7	D	**4,100**	**44.2**	**E**
I-5 SB, north of Twin View Blvd I/C	**2**	**D**	**3,872**	**38.5**	**E**	**3,722**	**35.4**	**E**
I-5 NB, north of SR 273 I/C	3	D	4,381	25.1	C	4,952	29.6	D
I-5 SB, north of SR 273 I/C	3	D	4,685	27.3	D	4,534	26.2	D
I-5 NB, north of Oasis Road I/C	3	D	3,216	19.5	C	3,843	23.4	C
I-5 SB, north of Oasis Road I/C	3	D	3,464	21.0	C	3,216	19.5	C
I-5 NB, north of Pine Grove Avenue I/C	3	C	2,945	18.8	C	3,238	20.2	C
I-5 SB, north of Pine Grove Avenue I/C	3	C	3,028	19.1	C	3,023	19.1	C
I-5 NB, north of SR 151 I/C	2	C	2,199	21.2	C	2,259	21.5	C
I-5 SB, north of SR 151 I/C	2	C	2,045	19.8	C	2,220	21.2	C
I-5 NB, north of Mountain Gate Blvd I/C	2	C	1,730	15.5	B	1,792	16.0	B
I-5 SB, north of Mountain Gate Blvd I/C	2	C	1,653	14.8	B	1,713	15.3	B
Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**								

Based on a comparison of LOS between "no project" and "plus project" conditions as presented in Tables 11C and 12C, respectively, the following I-5 mainline segments that were found to be operating at unacceptable LOS under "no project" conditions would continue to operate unacceptably with the addition of project traffic

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C
- I-5 SB, north of SR 299 I/C
- I-5 NB, north of Twin View Boulevard I/C

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following freeway mainline segment.

- I-5 SB, north of Twin View Boulevard I/C

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

RAMP JUNCTIONS

Year 2030 Plus Project ramp merge/diverge operations were evaluated utilizing the peak hour volumes shown on Figure 14B and 14C. **Table 12D** summarizes *Year 2030 Plus Project* conditions' ramp merge/diverge operations.

TABLE 12D
YEAR 2030 PLUS PROJECT RAMP MERGE DIVERGE LEVELS OF SERVICE

			AM Peak Hour			PM Peak Hour		
I-5 & Cypress Avenue	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	**802**	**37.1**	**F**	**1,062**	**44.4**	**F**
I-5 SB Off-Ramp	Diverge	D	1,360	31.7	D	1,207	31.0	D
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 44	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Loop On-Ramp	**Merge**	**D**	**611**	**35.8**	**E**	**860**	**44.2**	**F**
I-5 NB Direct On-Ramp	Merge	D	609	27.8	C	1,018	34.4	D
I-5 SB Direct Off-Ramp	**Diverge**	**D**	**978**	**57.2**	**F**	**807**	**50.4**	**F**
I-5 SB Loop Off-Ramp	**Diverge**	**D**	**858**	**47.3**	**F**	**737**	**42.2**	**F**
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 273	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	**Merge**	**D**	**614**	**35.6**	**F**	**773**	**40.7**	**F**
I-5 SB Off-Ramp	Diverge	D	816	32.8	D	748	32.0	D
			AM Peak Hour			**PM Peak Hour**		
I-5 & Oasis Road	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB On-Ramp	Merge	D	371	19.6	B	577	23.6	C
I-5 SB Off-Ramp	Diverge	D	499	25.1	C	497	23.7	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & SR 151	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	912	23.4	C	1,267	26.0	C
I-5 NB On-Ramp	Merge	C	228	14.2	B	182	13.5	B
I-5 SB Off-Ramp	Diverge	C	95	22.4	C	182	24.2	C
I-5 SB On-Ramp	**Merge**	**C**	**1,317**	**30.1**	**D**	942	27.9	C
			AM Peak Hour			**PM Peak Hour**		
I-5 & Mountain Gate Blvd.	**Junction Type**	**Target LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**	**Volume**	**Density (pc/mi/ln)**	**LOS**
I-5 NB Off-Ramp	Diverge	C	578	27.7	C	554	28.0	C
I-5 NB On-Ramp	Merge	C	76	21.9	C	92	22.4	C
I-5 SB Off-Ramp	Diverge	C	57	21.6	C	89	22.3	C
I-5 SB On-Ramp	Merge	C	545	21.4	C	608	25.9	C

Notes: **Bolded and shaded entries indicate segments operating at unacceptable LOS**

Based on a comparison of "no project" vs. "plus project" ramp merge/diverge LOS as presented in Table 11D and Table 12D, respectively, the following ramp merge/diverge junctions which were found to operate unacceptably for *Year 2030 No Project* conditions would continue to operate at unacceptable LOS with the addition of project traffic:

- I-5 & Cypress Avenue - NB On-Ramp
- I-5 & SR 44 - NB Loop On-Ramp, SB Direct Off-Ramp, SB Loop Off-Ramp
- I-5 & SR 273 - NB On-Ramp

The addition of project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following ramp merge/diverge junctions:

- I-5 & SR 151 – SB On-Ramp

All improvements and mitigation measures are discussed in the Recommendations/Mitigations section of this report.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

ALTERNATIVE ACCESS TO THE PROJECT SITE VIA BLACK CANYON ROAD

The following section discusses the impacts created by the alternative access to the project site via the Black Canyon Road. Since, the alternative access is not anticipated to impact all of the study facilities, an analysis that focuses on the facilities that would have a greater impact due to such an extension is provided here.

An additional (alternative) access to the project site would be provided via the northeasterly extension of Black Canyon Road, which would connect to the internal project roadway. Note that the alternative access would only be provided under Year 2020 and 2030 "plus project" conditions, and therefore will be analyzed only for Year 2020 and 2030 "plus project" conditions.

The following assumptions, concerning the use of Black Canyon Road as an alternative route to access the project site, were assumed for the purposes of the analysis:

- ±7% of the total project traffic would use Black Canyon Road as an alternative route to access the site
- Connection between Mussels Shoals Avenue and Black Canyon Road would not be in place

The revised assignment assumptions resulting from the Black Canyon Road extension alternative were derived based on observing the trip distribution characteristics prepared for various uses within the project site and shown in Figures 6A through 6D. As noted previously, the trip distribution characteristics were prepared in coordination with City of Shasta Lake staff. Although Black Canyon Drive is classified as an arterial, it currently operates as a residential road and is analyzed as a residential two lane collector in this study.

It is anticipated that the alternative access would impact operations sufficiently enough to warrant analysis in this section at the following intersections:

5. SR 151/Ashby Road
6. SR 151(WB)/Montana Avenue
7. SR 151(EB)/Montana Avenue
8. SR 151/Median Avenue
9. Mussel Shoals Ave/Red Bluff St
10. Mussel Shoals Ave/Main Street
11. SR 151/Mussel Shoals Avenue
12. Shasta Way/Front Street
13. SR 151/Shasta Street
14. SR 151/Cascade Boulevard

Additionally, impacts to the following roadway segments are analyzed within this section:

1. Montana Avenue – between Main Street and Front Street
2. Red Bluff Street – between Washington Avenue and Grand River Avenue
3. Main Street – between Washington Avenue and Grand River Avenue
4. Mussel Shoals Avenue – between Front Street and Shasta Dam Boulevard
5. Grand Coulee Boulevard – between Fort Peck Street and Shasta Dam Boulevard
6. Black Canyon Road

YEAR 2020 PLUS PROJECT TRAFFIC OPERATIONS WITH ALTERNATIVE ACCESS

INTERSECTIONS

Year 2020 Plus Project with Alternative Access conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2020 No Project* traffic volumes at the study intersections (#8 through #14) and Black Canyon Road. The resulting *Year 2020 Plus Project* intersection traffic volumes are illustrated on **Figure 15**. **Table 13A** summarizes *Year 2020 Plus Project* conditions' intersection operations with Black Canyon Road Extension.

TABLE 13A
YEAR 2020 PLUS PROJECT INTERSECTION OF SERVICE – BLACK CANYON RD. EXTENSION

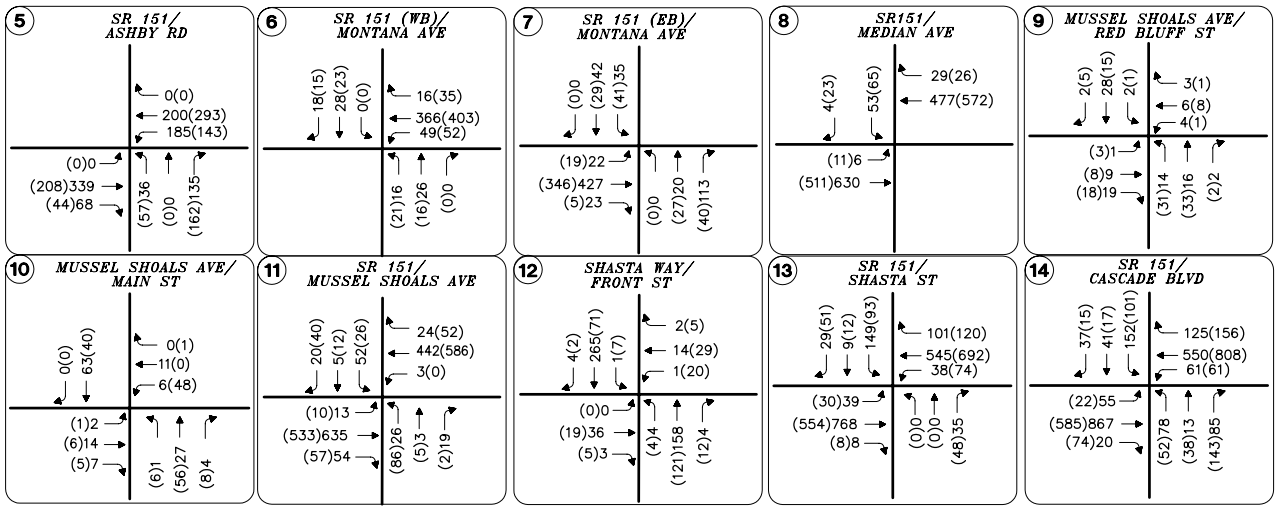
#	Intersection	Control Type	Target LOS	AM Peak		PM Peak	
				with EXT. LOS	W/O EXT. LOS	with EXT. LOS	W/O EXT. LOS
5	SR151/Ashby Road	TWSC	C	C	C	B	B
6	SR151(WB)/Montana Avenue	TWSC	C	B	C	C	C
7	SR151(EB)/Montana Avenue	TWSC	C	C	C	B	C
8	**SR151/Median Ave.**	**TWSC**	C	**D**	**E**	**D**	**F**
9	Mussel Shoals Ave./Red Bluff St.	AWSC	C	A	A	A	A
10	Mussel Shoals Ave./Main St.	AWSC	C	A	A	A	A
11	**SR151/Mussel Shoals Ave.**	**TWSC**	C	**E**	**F**	**F**	**F**
12	Shasta Way/Front St.	TWSC	C	B	B	B	B
13	**SR151/Shasta St.**	**TWSC**	C	**F**	**F**	**F**	**F**
14	**SR151/Cascade Blvd.**	**Signal**	C	**D**	**E**	**D**	**E**

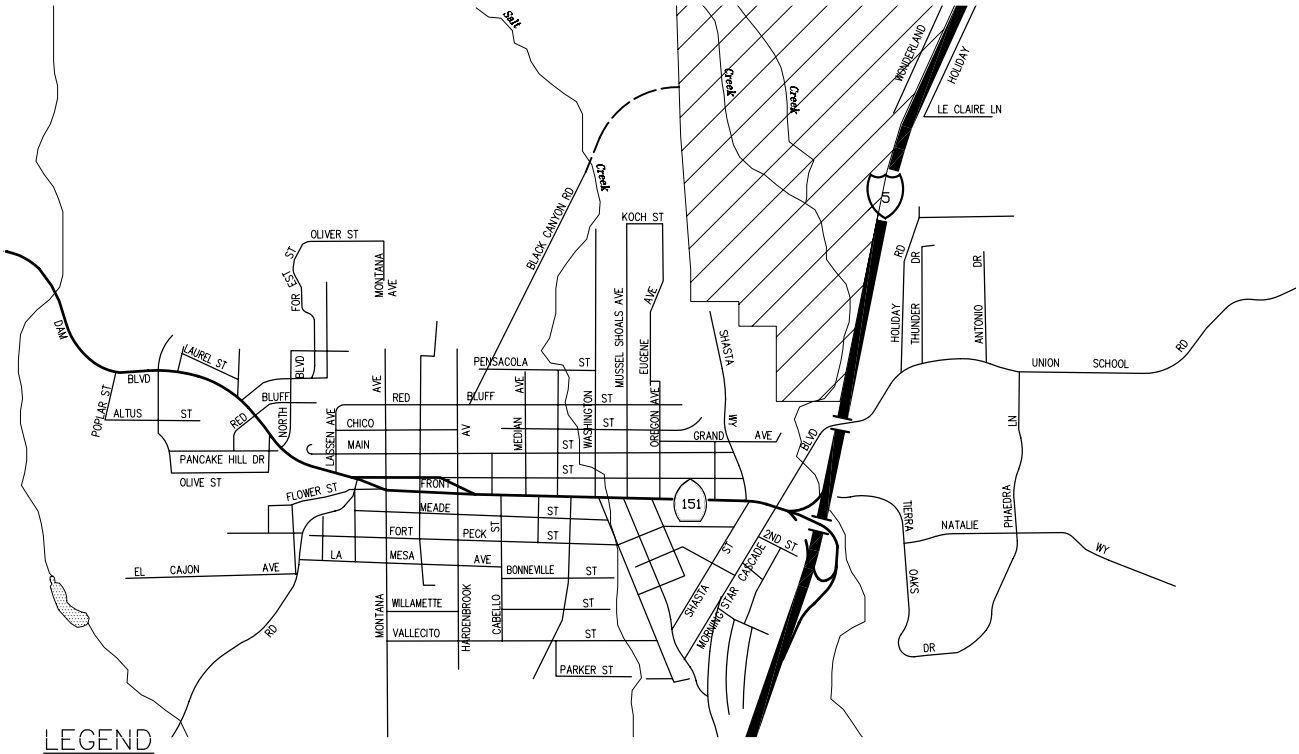
Notes: ***Bolded and highlighted entries indicate intersections operating at unacceptable LOS***
TWSC = Two Way Stop Control
AWSC = All Way Stop Control
EXT. = Black Canyon Road Extension, Delay in seconds

Detailed delays at the study intersections were not shown in Table 13A because the change in delay between with the Black Canyon Road extension and without the Black Canyon Road extension is very minimal and not considered significant for this study. The following intersections would operate at unacceptable LOS with or without the extension:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street
- SR 151/Cascade Boulevard

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.





LEGEND

XXX – AM PEAK HOUR VOLUMES

(XXX) – PM PEAK HOUR VOLUMES

– – – – – BLACK CANYON RD EXTENSION

XXXX – ROADYWAY ADT

Mountain Gate at Shasta Lake

Figure 15

2020 Plus Project Intersection Traffic Volumes
Black Canyon Road Extension Alternative

File: T946TG40.DWG(03OCT05)45-5130-14

ROADWAY SEGMENTS

Roadway operations with the extension of Black Canyon Road for Year 2020 are shown in **Table 13B.**

TABLE 13B
YEAR 2020 PLUS PROJECT ROADWAY LEVELS OF SERVICE – BLACK CANYON RD. EXTENSION

Roadway Segment	Capacity Configuration	Level of Service (LOS) with Extension	Level of Service (LOS) without Extension
Montana Ave. - between Main St. and Front St.	2-Lane Collector	A	A
Red Bluff St. - between Washington Ave. and Grand Rive Ave.	Residential	C	B
Main St.- Between Washington Ave. and Grand River Ave.	Residential	C	B
Mussel Shoals Ave. - between Front St. and Shasta Dam Blvd. (SR151)	Residential Collector	B	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta Dam Blvd. (SR151)	2-Lane Collector	A	A
Black Canyon Rd. - north of Red Bluff St.	**Residential**	**D**	B

As shown in Table 13B, Black Canyon Road is projected to operate at unacceptable LOS D with the extension of Black Canyon Road into the project site. The project would add ±1,400 weekday daily trips to the Black Canyon Road segment.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

MAINLINE AND RAMP MERGE/DIVERGE JUNCTIONS

As noted previously, the impact to the freeway mainline segments and the ramp merge/diverge junctions , as a result of the alternate access, would be negligible. Therefore, a separate analysis is not provided here, and it is requested that the reader refer to the Tables 10C and 10D for operations at the mainline and ramp merge/diverge junctions, respectively.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

YEAR 2030 PLUS PROJECT TRAFFIC OPERATIONS WITH ALTERNATIVE ACCESS

INTERSECTIONS

Year 2030 Plus Project with Alternative Access conditions were simulated by superimposing traffic generated by the proposed project onto *Year 2030 No Project* traffic volumes at the study intersections (#8 through #14) and Black Canyon Road. The resulting *Year 2030 Plus Project* intersection traffic volumes are illustrated on **Figure 16**. **Table 14A** summarizes *Year 2030 Plus Project* conditions' intersection operations.

TABLE 14A
YEAR 2030 PLUS PROJECT INTERSECTION LEVELS OF SERVICE – BLACK CANYON RD. EXTENSION

#	Intersection	Control Type	Target LOS	AM Peak with EXT. LOS	AM Peak W/O EXT. LOS	PM Peak with EXT. LOS	PM Peak W/O EXT. LOS
5	SR151/Ashby Road	TWSC	C	C	C	C	C
6	SR151(WB)/Montana Avenue	TWSC	C	C	C	C	C
7	SR151(EB)/Montana Avenue	TWSC	C	C	C	C	C
8	**SR151/Median Ave.**	**TWSC**	C	**D**	**E**	**F**	**F**
9	Mussel Shoals Ave./Red Bluff St.	AWSC	C	A	A	A	A
10	Mussel Shoals Ave./Main St.	AWSC	C	A	A	A	A
11	**SR151/Mussel Shoals Ave.**	**TWSC**	C	**E**	**F**	**F**	**F**
12	Shasta Way/Front St.	TWSC	C	B	B	B	B
13	**SR151/Shasta St.**	**TWSC**	C	**F**	**F**	**F**	**F**
14	**SR151/Cascade Blvd.**	**Signal**	C	**E**	**E**	**F**	**F**

Notes: ***Bolded and highlighted entries indicate intersections operating at unacceptable LOS***

TWSC = Two Way Stop Control

AWSC = All Way Stop Control

EXT. = Black Canyon Road Extension, Delay in seconds

Detailed delays at the study intersections are not shown in Table 14A because the change in delay between with the Black Canyon Road extension and without the Black Canyon Road extension is very minimal and not considered significant for this study. The following intersections would operate at unacceptable LOS with or without the extension:

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street
- SR 151/Cascade Boulevard

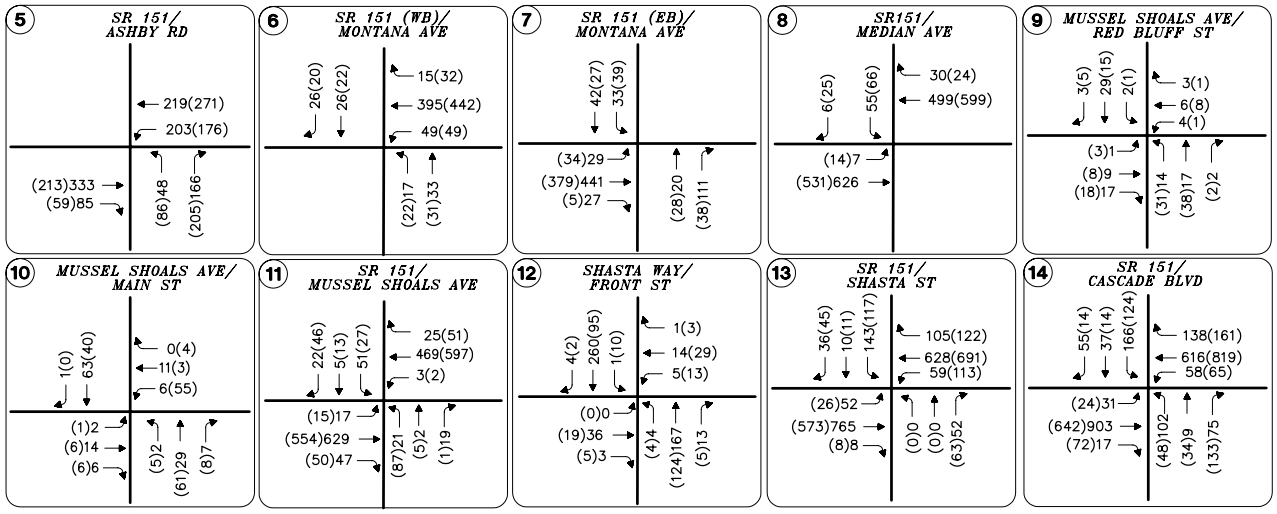
All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

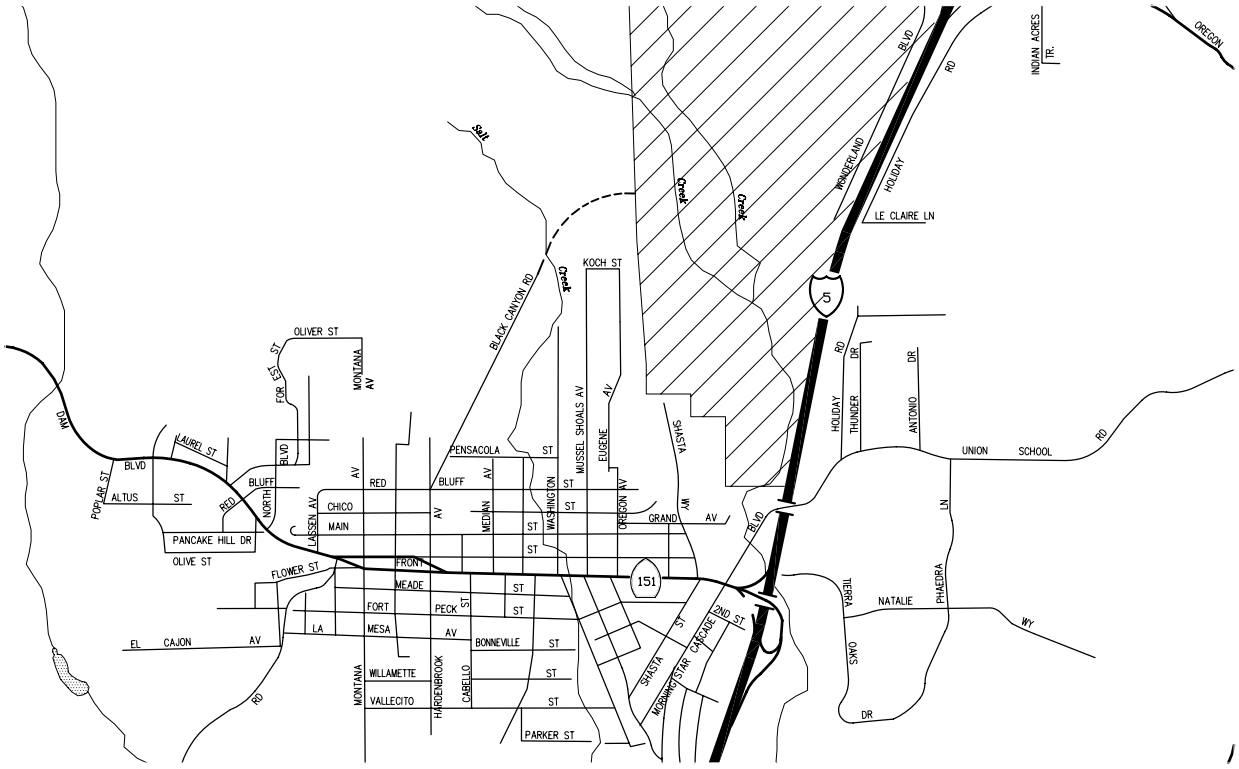
ROADWAY SEGMENTS

Roadway operations with the extension of Black Canyon Road for Year 2030 are shown in **Table 14B.**

TABLE 14B
YEAR 2030 PLUS PROJECT ROADWAY LEVELS OF SERVICE – BLACK CANYON RD. EXTENSION

Roadway Segment	Capacity Configuration	Level of Service (LOS) with Extension	Level of Service (LOS)
Montana Ave. - between Main St. and Front St.	2-Lane Collector	A	A
Red Bluff St. - between Washington Ave. and Grand Rive	Residential	C	B
Main St.- Between Washington Ave. and Grand River Ave.	Residential	C	B
Mussel Shoals Ave. - between Front St. and Shasta Dam	Residential Collector	B	B
Grand Coulee Blvd. - between Fort Peck St. and Shasta	2-Lane Collector	A	A
Black Canyon Rd. - north of Red Bluff St.	**Residential**	**D**	C





LEGEND

XXX – AM PEAK HOUR VOLUMES

(XXX) – PM PEAK HOUR VOLUMES

– – – – – BLACK CANYON RD EXTENSION

XXXX – ROADYWAY ADT

Mountain Gate at Shasta Lake

Figure 16

2030 Plus Project Intersection Traffic Volumes
Black Canyon Road Extension Alternative

File: T946TG41.DWG(030CT05)45-5130-14

As shown in Table 14B, Black Canyon Road is projected to operate at unacceptable LOS D with the extension of Black Canyon Road into the project site. The project would add ± 1,400 weekday daily trips to the Black Canyon Road segment.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

MAINLINE AND RAMP MERGE/DIVERGE JUNCTIONS

As noted previously, the impact to the freeway mainline segments and the ramp merge/diverge junctions , as a result of the alternate access, would be negligible. Therefore, a separate analysis is not provided here, and it is requested that the reader refer to the Tables 12C and 12D for operations at the mainline and ramp merge/diverge junctions, respectively.

All improvements are discussed under the "RECOMMENDATIONS" section included in this report.

INTERNAL CIRCULATION

This section addresses the internal traffic circulation within the project site for year 2030 based on the mapping provided by PMC on Jun 19, 2007. **Figure 17** illustrates the internal roadways and intersections. OMNI-MEANS used approximations about where the roadways and driveways to each of the parcels would possibly be located as shown in Figure 17. The analysis presented in this report represents worse case conditions. **Figure 18** illustrates the lane geometrics and traffic control assumed at each of the internal intersections and **Figure 19** illustrates the traffic volumes at each of these intersections. An internal Traffix model was created to analyze the internal roadways and intersections. Analysis of the internal intersections is presented in **Table 15** below:

TABLE 15
YEAR 2030 PLUS PROJECT INTERNAL INTERSECTIONS

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	LOS	Warrant Met?	Delay	LOS	Warrant Met?
1	INT 1	RA	C	4.9	A	no	4.9	A	no
2	INT 2	RA	C	4.1	A	no	4.5	A	no
3	INT 3	TWSC	C	10.6	B	no	10.2	B	no
4	INT 4	TWSC	C	10.2	B	no	10.5	B	no
5	INT 5	TWSC	C	9.9	A	no	10.0	A	no
6	INT 6	TWSC	C	8.7	A	no	8.7	A	no
7	INT 7	TWSC	C	9.2	A	no	9.7	A	no
8	INT 8	TWSC	C	10.7	B	no	10.8	B	no
9	INT 9	TWSC	C	10.2	B	no	10.6	B	no
10	INT 10	TWSC	C	8.6	A	no	8.6	A	no
11	INT 11	TWSC	C	11.1	B	no	11.5	B	no
12	INT 12	TWSC	C	8.9	A	no	8.9	A	no
13	INT 13	TWSC	C	9.1	A	no	9.1	A	no
14	INT 14	TWSC	C	13.2	B	no	13.6	B	no
15	INT 15	TWSC	C	10.0	A	no	9.5	A	no
16	INT 16	TWSC	C	14.0	B	no	14.3	B	no
17	INT 17	TWSC	C	11.5	B	no	10.4	B	no

Notes: **Bolded and highlighted entries indicate intersections operating at unacceptable LOS**

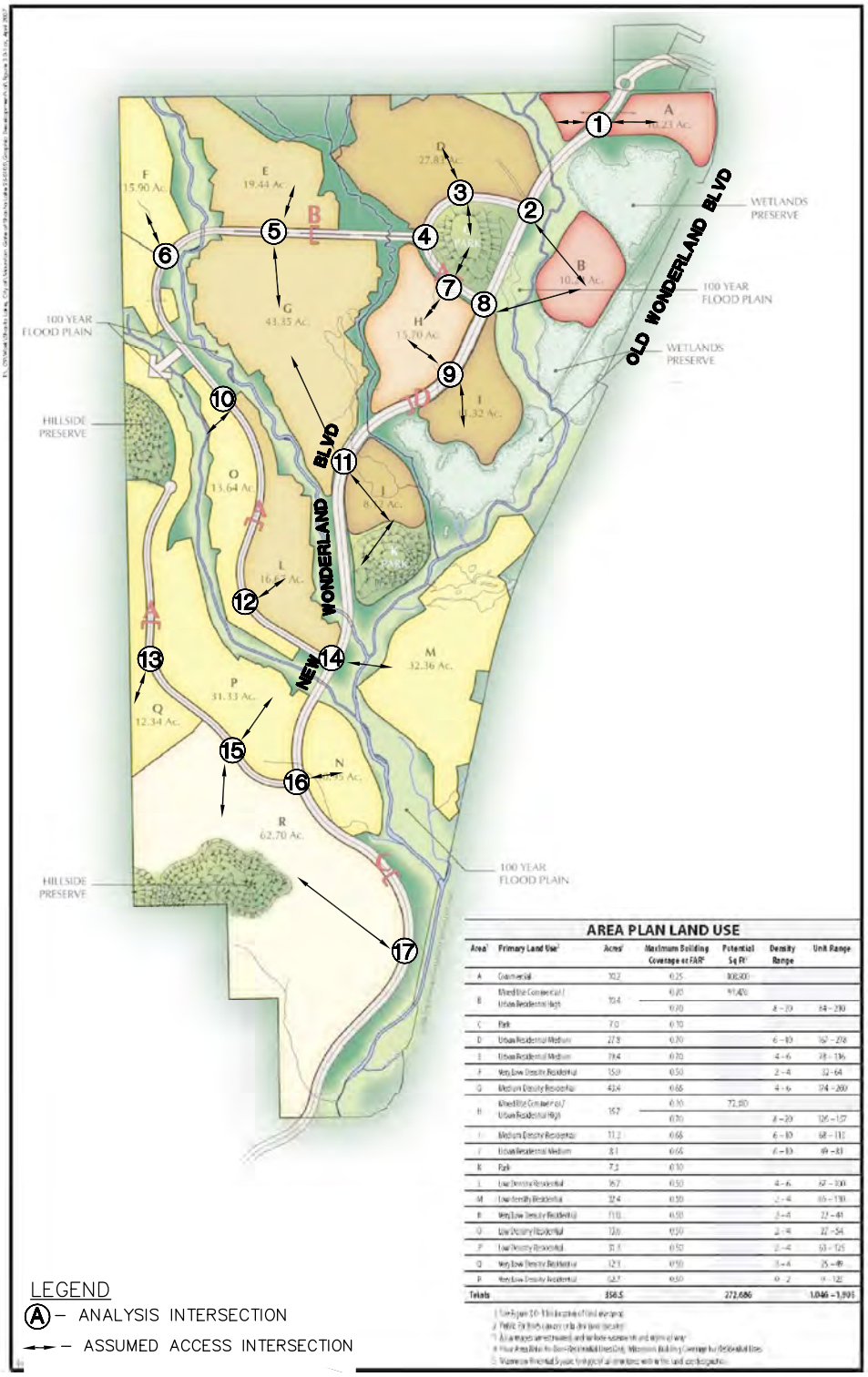
TWSC = Two Way Stop Control

AWSC = All Way Stop Control

RA = Roundabout

Warrant = Caltrans Peak hour volume based signal warrant

As shown above in Table 15, all of the internal intersections are projected to operate at acceptable LOS for the control and geometrics shown on Figure 18. In light of comments received from City staff, operations for intersections 1 and 2 were evaluated with a traffic signal in place. Intersections 1 and 2 were found to be operating at acceptable LOS C conditions for both the AM and PM peak hours.



AREA PLAN LAND USE

Area[1]	Primary Land Use[1]	Acres[1]	Maximum Building Coverage or FAR[2]	Potential Sq Ft[3]	Density Range	Unit Range
A	Commercial	10.2	0.25	108,900		
B	Mixed Use Commercial / Urban Residential High	10.4	0.20	91,476		
			0.70		8 – 20	84 – 230
C	Park	7.0	0.10			
D	Urban Residential Medium	27.8	0.70		6 – 10	167 – 278
E	Urban Residential Medium	19.4	0.70		4 – 6	78 – 116
F	Very Low Density Residential	15.9	0.50		2 – 4	32 – 64
G	Medium Density Residential	43.4	0.65		4 – 6	174 – 260
H	Mixed Use Commercial / Urban Residential High	16.2	0.30	72,810		
			0.70		8 – 20	126 – 157
I	Medium Density Residential	11.2	0.65		6 – 10	68 – 110
J	Urban Residential Medium	8.1	0.65		6 – 10	49 – 81
K	Park	7.3	0.10			
L	Low Density Residential	16.7	0.50		4 – 6	67 – 100
M	Low Density Residential	32.4	0.50		2 – 4	65 – 130
N	Very Low Density Residential	11.0	0.50		3 – 4	33 – 44
O	Low Density Residential	13.6	0.50		2 – 4	27 – 54
P	Low Density Residential	31.3	0.50		2 – 4	63 – 125
Q	Very Low Density Residential	12.3	0.50		3 – 4	25 – 49
R	Very Low Density Residential	62.7	0.50		0 – 2	0 – 125
Totals		358.5		272,686		1,046 – 1,991

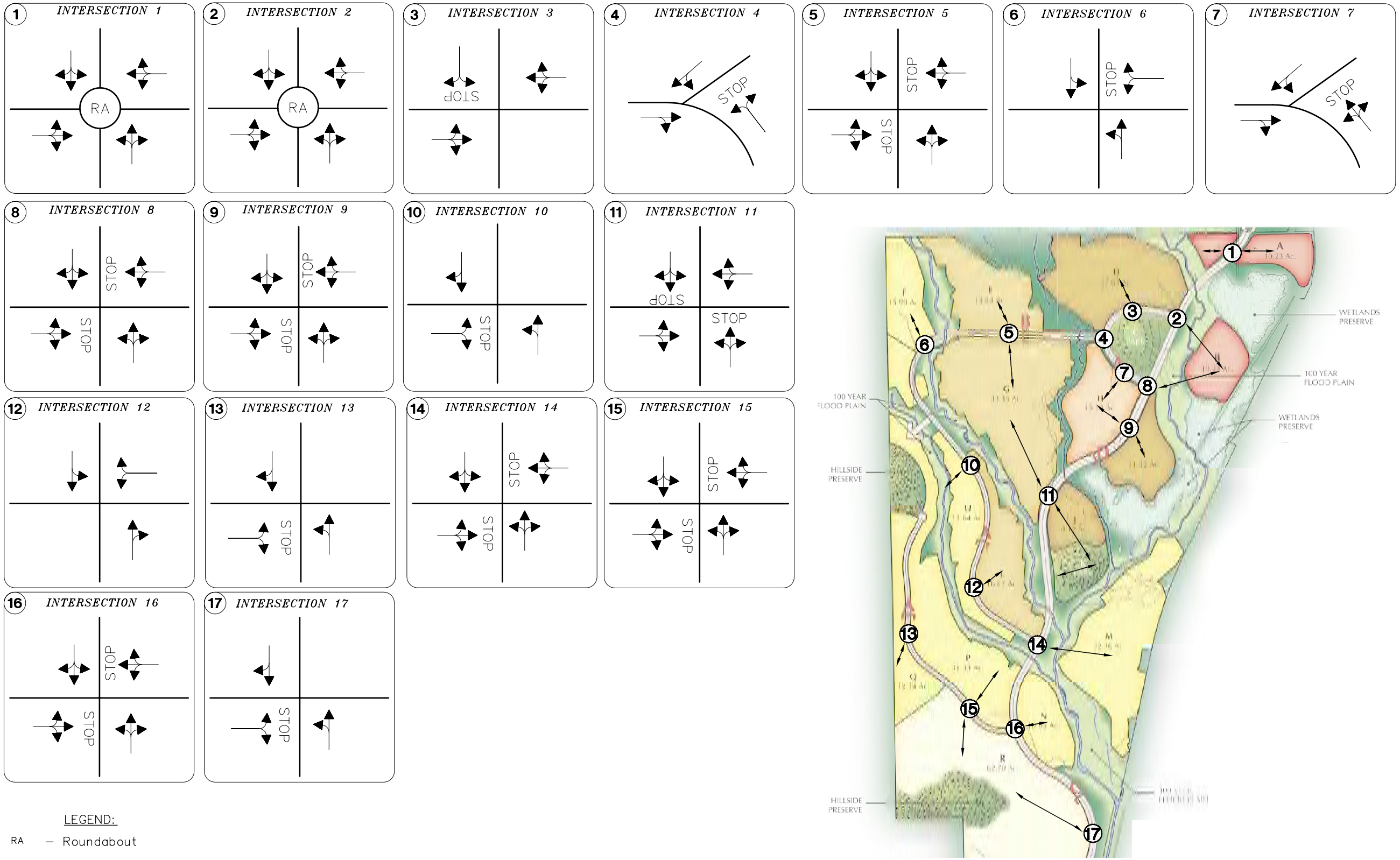
1. See figure 3.0-1 for location of land use areas.
2. Public facilities, cemetery, utility and like uses.
3. All acreages are net of roads, and further assumes no land within road right-of-way.
4. Floor Area Ratio for Non-Residential Uses Only. Maximum Building Coverage for Residential Uses.
5. Maximum Potential Square Footage of all commercial uses within the land use designations.

Figure 3.0-1
Schematic Land Plan
Mountain Gate at Shasta Lake
PMC

Mountain Gate at Shasta Lake Figure 17

Internal Circulation

T946TG47.DWG(22MAR07)45–5130–14

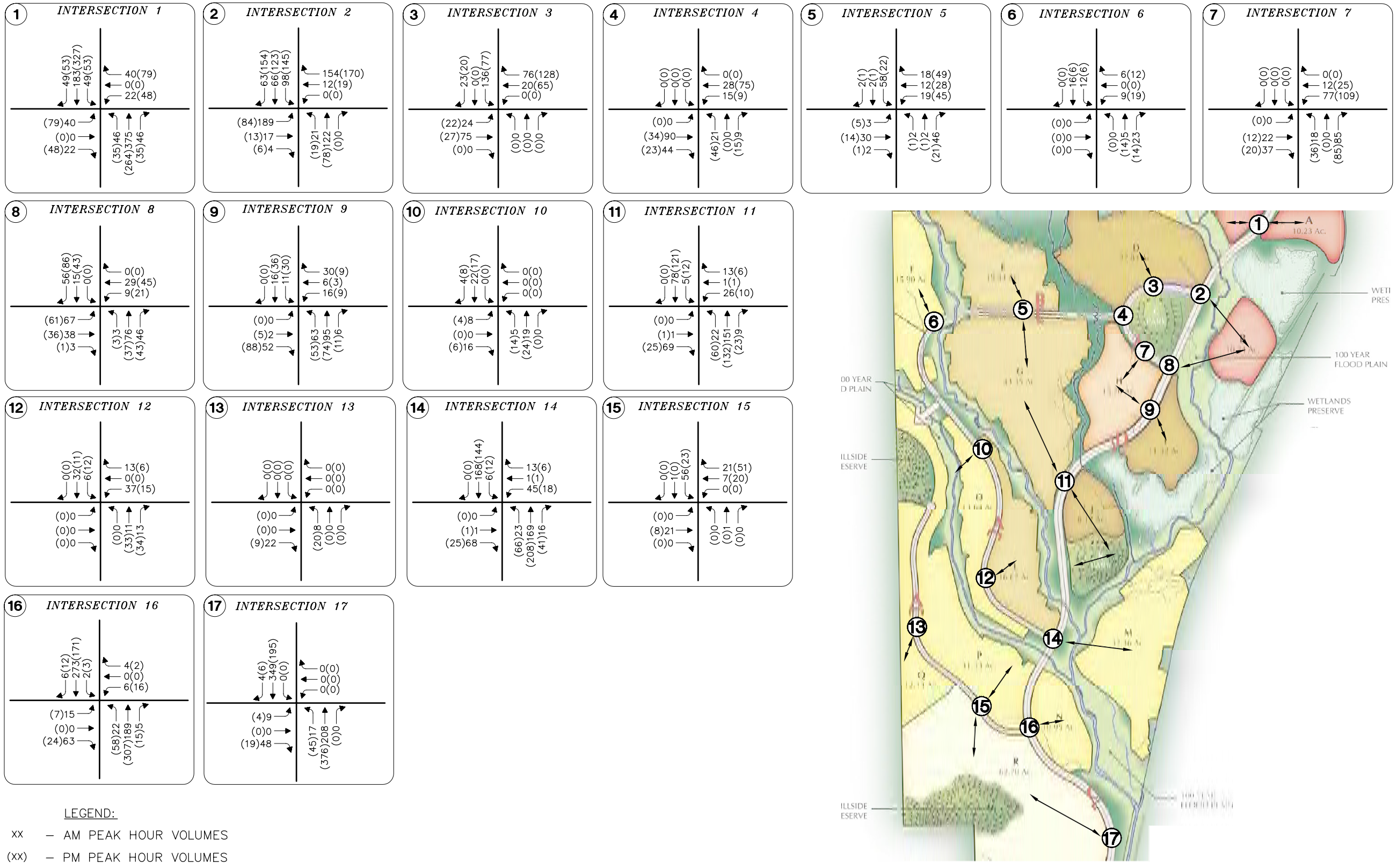


Mountain Gate at Shasta Lake

Figure 18

Internal Intersections Lane Geometrics and Control

Dwa File: T946TG48.dwa (28JUNE07) 45-5130-14



LEGEND:

XX – AM PEAK HOUR VOLUMES

(XX) – PM PEAK HOUR VOLUMES

Mountain Gate at Shasta Lake

Figure 19

Internal Intersections AM and PM Peak Hour Traffic Volumes

Dwa File: T946TG49.dwa (28JUNE07) 45-5130-14

For analysis of the internal roadways, the internal roadways depicted in Figure 17 are analyzed as two lane Arterials (with left turn lanes) and two lane collectors as shown in **Table 16**.

TABLE 16
YEAR 2030 PLUS PROJECT INTERNAL ROADWAYS

Roadway Segment	Capacity Configuration	Average Daily Traffic (ADT) Volumes	Level of Service (LOS)	LOS Criteria For Rd.way Type Mentioned in Column "Capacity"				
				A	B	C	D	E
New Wonderland Blvd. - north of #INT 1	2-Lane Divided Arterial	9,100	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 1 and #INT 2	2-Lane Divided Arterial	8,080	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 2 and #INT 8	2-Lane Divided Arterial	2,560	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 8 and #INT 9	2-Lane Divided Arterial	1,630	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 9 and #INT 11	2-Lane Divided Arterial	2,920	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 11 and #INT 14	2-Lane Divided Arterial	3,910	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 14 and #INT 16	2-Lane Divided Arterial	5,230	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - between #INT 16 and #INT 17	2-Lane Divided Arterial	6,030	A	11000	12500	14500	16000	18000
New Wonderland Blvd. - South of #INT 17	2-Lane Divided Arterial	6,560	A	11000	12500	14500	16000	18000
Loop Rd. - between #INT 2 and #INT 3	Residential Collector with Frontages	3,050	B	1600	3200	4800	6400	8000
Loop Rd. - between #INT 3 and #INT 4	Residential Collector with Frontages	1,390	A	1600	3200	4800	6400	8000
Loop Rd. - between #INT 4 and #INT 7	Residential Collector with Frontages	1,020	A	1600	3200	4800	6400	8000
Loop Rd. - between #INT 7 and #INT 8	Residential Collector with Frontages	2,650	B	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 4 and #INT 5	Residential Collector with Frontages	1,870	B	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 5 and #INT 6	Residential Collector with Frontages	550	A	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 6 and #INT 10	Residential Collector with Frontages	570	A	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 10 and #INT 12	Residential Collector with Frontages	650	A	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 12 and #INT 14	Residential Collector with Frontages	940	A	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 13 and #INT 15	Residential Collector with Frontages	310	A	1600	3200	4800	6400	8000
Internal Rd. 1 - between #INT 15 and #INT 16	Residential Collector with Frontages	1,060	A	1600	3200	4800	6400	8000

Notes:

1. Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.

2. All volume thresholds are approximate and assume ideal Rd.way characteristics. Actual thresholds for each LOS listed above may vary depending on a variety of factors including (but not limited to) Rd.way curvature and grade, intersection or interch

As shown in Table 16, New Wonderland Boulevard is projected to operate at acceptable LOS with the capacity configurations shown in the table. All of the internal roads are projected to operate at acceptable LOS with the capacity configurations shown in the table.

RECOMMENDATIONS

This section presents recommended base improvements as well as project-related mitigation measures at the study intersections, roadway segments, freeway mainline segments and ramp merge/diverge junctions, which were developed based on the findings from the analyses presented in the prior sections of this report.

EXISTING CONDITIONS RECOMMENDATIONS

Intersections

SR 151/Mussel Shoals Avenue – This unsignalized intersection is currently found to be operating at unacceptable LOS D during both the AM and PM peak hour periods. Restricting access on the northbound and southbound approaches on Mussel Shoals Avenue is not recommended as Mussel Shoals Avenue is a north-south collector that connects several residential streets. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. The traffic signal will allow vehicles on all approaches to cross the intersection safely. The traffic signal at this location will allow the northbound and southbound left turning vehicles on Mussel Shoals Avenue to easily get onto SR 151. This improvement would yield acceptable LOS.

SR 151/Shasta Street: This unsignalized intersection is currently found to be operating at unacceptable LOS F during both the AM and PM peak hour periods. This intersection also meets the peak hour volume signal warrant. In order to achieve acceptable LOS at this intersection, it is recommended that a traffic signal be installed at this intersection and the southbound approach on Shasta Street be widened to accommodate a separate left turn lane. The traffic signal will allow vehicles on all approaches to cross the intersection safely and adding a turn lane would allow traffic to queue outside the travel lane and will keep the through traffic flowing at acceptable conditions. This improvement would yield acceptable LOS.

Pine Grove Avenue/Cascade Boulevard: This unsignalized intersection is currently found to be operating at unacceptable LOS D during the PM peak hour period. The intersection does not meet the signal warrant criteria for *Existing* conditions during the PM peak hour period. It is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Oasis Road/Cascade Boulevard: This unsignalized intersection is currently found to be operating at unacceptable LOS D during the AM and PM peak hours. The intersection does not meet the signal warrant criteria for *Existing* conditions during either of the peak hour periods. It is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control sign will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Oasis Road/I-5 NB Ramps: The unsignalized intersection of Oasis Road/I-5 NB Ramps is currently found to be operating at unacceptable LOS D and F based on the delay along the worst approach (I-5 northbound off-ramp) during the AM and PM peak hour periods, respectively. The intersection meets the signal warrant criteria for *Existing* conditions during the PM peak hour period. Also, note that the volume along the stop controlled off ramp is greater than the sum of volumes at the other uncontrolled approaches along Oasis Road. It is recommended that the intersection be signalized with permitted (permissive) phasing for the eastbound left

turns. The traffic signal will reduce the delay incurred by the minor street approach and will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

(Note: The City of Redding has conditioned three (3) separate developments in the Oasis Road area to construct a traffic signal at this location. The traffic signal has been designed and Caltrans has issued a permit for construction.)

Mainline Segments

The following I-5 mainline segments are found to be operating at unacceptable LOS under *Existing* conditions:

- I-5 NB, south of Cypress Avenue I/C
- I-5 NB, north of the SR 44 I/C

It is recommended that an additional northbound lane be provided. This improvement would provide additional capacity on I-5 in the NB direction and will yield acceptable LOS for the segments identified above.

Ramp Merge Diverge Junctions

The following ramp merge/diverge junctions are found to be operating at unacceptable LOS under *Existing* conditions:

I-5 & SR 44 – SB Connector to WB 44: It is recommended that a collector-distributor ramp configuration (Interchange Type L-10) be provided. This will allow the exiting vehicles to use the auxiliary lane and reduce conflicts between the vehicles continuing SB on I-5 and the vehicles exiting to westbound SR 44. This improvement would yield acceptable LOS. *(Note that Caltrans currently has a project programmed to construct this improvement within the next few years).*

YEAR 2010 NO PROJECT CONDITIONS RECOMMENDATIONS

Intersections

SR 151/Median Avenue: This unsignalized intersection is projected to operate at unacceptable LOS D during the PM peak hour period under *Year 2010 No Project* conditions. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. The traffic signal will reduce the delay incurred by the minor street approach and will allow the vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

SR 151/Mussel Shoals Avenue: Under *Year 2010 No Project* conditions, this intersection is projected to operate at unacceptable LOS D and F during the AM and PM peak hour periods, respectively. Restricting access on the northbound and southbound approaches on Mussel Shoals Avenue is not recommended as Mussel Shoals Avenue is a north-south collector that connects several residential streets. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. The traffic signal will reduce the delay incurred by the minor street approach and will allow the northbound and southbound left turning vehicles on Mussel Shoals Avenue to easily get onto SR 151. This improvement would yield acceptable LOS.

SR 151/Shasta Street: This unsignalized intersection is projected to operate at unacceptable LOS F during both the AM and PM peak hour periods under *Year 2010 No Project* conditions. In addition, the intersection meets

the peak hour volume signal warrant criteria during the AM peak hour period. In order to achieve acceptable LOS at this intersection, it is recommended that a traffic signal be installed at this intersection and the southbound approach on Shasta Street be widened to accommodate a separate left turn lane. The traffic signal will allow vehicles to cross the intersection safely and adding a turn lane would allow traffic to queue outside the travel lane and will keep the through traffic flowing at acceptable conditions. These improvements would yield acceptable LOS.

Pine Grove Avenue/Cascade Boulevard: Under *Year 2010 No Project* conditions, this intersection is projected to operate at unacceptable LOS E and F during the AM and PM peak hour periods, respectively. The intersection does not meet the signal warrant criteria during either of the peak hour periods. Therefore, it is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control sign will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Pine Grove Avenue/I-5 NB Ramps: Under *Year 2010 No Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The intersection meets the signal warrant criteria during the PM peak hour period. Therefore, it is recommended that a traffic signal be installed at this location. The traffic signal will reduce the delay incurred by the minor street approach. This improvement would yield acceptable LOS.

Oasis Road/Cascade Boulevard: This unsignalized intersection is projected to operate at unacceptable LOS F during the AM and PM peak hours under *Year 2010 No Project* conditions. The intersection does not meet the signal warrant criteria during either of the peak hour periods. However, to provide better progression of traffic (warrant 6, coordinated signal system), the following improvements are recommended:

- Installation of a traffic signal with permitted (permissive) signal phasing on all of the approaches. A traffic signal will allow the vehicles on all approaches to cross the intersection safely.
- Realign the intersection to a new location west of its current location pursuant to the City of Redding Oasis Area Specific Plan to facilitate Oasis Road/I-5 interchange reconstruction.

These improvements would yield acceptable LOS.

Oasis Road/I-5 SB Ramps: The unsignalized intersection of Oasis Road/I-5 SB Ramps is projected to operate at unacceptable LOS F for the AM and PM peak hours analyzed under *Year 2010 No Project* conditions. Moreover, the intersection meets the warrant criteria during both of peak hours. The following improvements are recommended:

- Installation of a traffic signal. A traffic signal will allow the vehicles on all approaches to cross the intersection safely.
- Exclusive right turn lane in the eastbound direction. The right turn lane will allow the right turning vehicles to use this exclusive lane and keep the through traffic flowing at acceptable conditions.
- Exclusive left turn lane in the westbound direction. The additional westbound through lane recommended at the Oasis Road/I-5 NB Ramps intersection would become a left turn lane at this intersection (trap lane). The left turn lane will allow vehicles to queue outside of the travel lane and keep the through traffic flowing at acceptable conditions. Note that this improvement would necessitate widening of the Oasis Road/I-5 overcrossing.

These improvements would yield acceptable LOS.

Oasis Road/I-5 NB Ramps: Under *Year 2010 No Project* conditions, the intersection of Oasis Road/I-5 NB Ramps is projected to operate at unacceptable LOS F during the AM and PM peak hour periods. Moreover, the intersection meets the warrant criteria during both of peak hours. The following improvements are recommended:

- Installation of a traffic signal. A traffic signal will allow the vehicles on all approaches to cross the intersection safely.
- Exclusive right turn lane on the northbound off-ramp. This exclusive lane will allow the right turning vehicles to queue in this lane and make a right turn on red, whenever they find a gap in the eastbound traffic on Oasis Road thus reducing the queue on the NB off-ramp.
- Additional westbound through (2^{nd}) be provided. This second through lane will provide additional capacity in the westbound direction on Oasis Road. Note that this improvement would necessitate widening of the Oasis Road/I-5 overcrossing.

These improvements would yield acceptable LOS.

Oasis Road/Twin View Boulevard: This unsignalized intersection is projected to operate at unacceptable LOS F during the AM and PM peak hours under *Year 2010 No Project* conditions. Moreover, the intersection meets the warrant criteria during both of peak hours. The following improvements are recommended:

- Installation of a traffic signal. A traffic signal will allow vehicles on all approaches to cross the intersection safely.
- Realignment of the intersection east of its current location pursuant to the City of Redding Oasis Area Specific Plan to facilitate Oasis Road/I-5 interchange reconstruction.
- Provision of an exclusive westbound left turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
- Provision of an exclusive eastbound left turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.

These improvements would yield acceptable LOS.

Cypress Avenue/I-5 NB Ramps: This signalized intersection is projected to operate at unacceptable LOS E during the PM peak hour under *Year 2010 No Project* conditions. It is recommended that the westbound approach be widened to include an exclusive right turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level. This improvement would yield acceptable LOS.

Cypress Avenue/Hilltop Drive: This signalized intersection is projected to operate at unacceptable LOS D during the PM peak hour under *Year 2010 No Project* conditions. The following improvements are recommended.

- Restripe the northbound approach to include two left turn and one shared through-right lane. Two left turn lanes will be required to accommodate the high left turning volume from Hilltop Drive to Cypress Avenue.
- Restripe the southbound approach to include one left, one shared through-right and one right turn lane. Adding a turn lanes allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
- Change the signal phasing to include protected left turns in the north-south approaches
- Widening of the westbound approach to include an exclusive right turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable

level.

These improvements would yield acceptable LOS.

Mainline Segments

The following I-5 mainline segments are projected to operate at unacceptable LOS under *Year 2010 No Project* conditions:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C

It is recommended that an additional lane in both the northbound and southbound direction be provided. This improvement would provide additional capacity on the mainline and yield acceptable LOS.

Ramp Merge Diverge Junctions

The following I-5 ramp merge/diverge junctions are projected to operate at unacceptable LOS under *Year 2010 No Project* conditions:

I-5 & SR 44 – NB Connector from WB 44: The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would reduce the density on both the mainline segment and merge section, and thereby provide acceptable LOS.

I-5 & SR 44 – SB Connector to WB 44, SB Connector to EB 44: It is recommended that a collector-distributor ramp configuration (Interchange Type L-10) be provided. This will allow the exiting vehicles to use the auxiliary lane and reduce conflicts between the vehicles continuing SB on I-5 and the vehicles exiting to westbound SR 44. This improvement would yield acceptable LOS.

YEAR 2010 PLUS PROJECT CONDITIONS RECOMMENDATIONS

The improvements recommended under the *Year 2010 No Project* conditions would accommodate *Year 2010 Plus Project* conditions.

YEAR 2020 NO PROJECT CONDITIONS RECOMMENDATIONS

Intersections

SR 151/Median Avenue: This unsignalized intersection is projected to operate at unacceptable LOS D during the AM and PM peak hour periods under *Year 2020 No Project* conditions. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. This improvement would yield acceptable LOS.

SR 151/Mussel Shoals Avenue: Under *Year 2020 No Project* conditions, this intersection is projected to operate at unacceptable LOS D and F during the AM and PM peak hour periods, respectively. Restricting access on the northbound and southbound approaches on Mussel Shoals Avenue is not recommended as Mussel Shoals

Avenue is a north-south collector that connects several residential streets. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. This will allow the northbound and southbound left turning vehicles on Mussel Shoals Avenue to easily get onto SR 151. This improvement would yield acceptable LOS.

Wonderland Boulevard Alignment Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended. The 95th percentile queue lengths are based on Synchro/Simtraffic analysis. The existing turn pocket lengths at the study intersections were estimated using aerial photography.

Alternative 1- Southerly connection of Wonderland Boulevard Extension as a "T" intersection with Cascade Boulevard (consistent with the Shasta County Travel Demand Model)

- *SR 151/Shasta Street*
  - Signalization with permitted (permissive) signal phasing in the north-south approaches (same as Year 2010 improvement).
  - Exclusive right turn lane in the westbound direction. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
  - Additional (2nd) westbound left turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
  - Additional (2nd) eastbound through lane. This will provide additional capacity in the EB direction on SR 151.
- *SR 151/Cascade Boulevard*
  - Exclusive right turn lane in the westbound direction. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
  - Additional (2nd) eastbound left turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
  - Additional (2nd) southbound left turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level.
- *SR 151/I-5 SB Ramps*
  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ± 1,000 feet long I-5 SB auxiliary lane.

(Note: Although the intersections of SR 151/Cascade Boulevard and SR 151/I-5 SB Ramps are projected to operate at acceptable LOS as shown in the LOS tables, they do not operate acceptably based on the vehicle

queues. Therefore, improvements are recommended at these intersections to accommodate the long queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation queuing analysis of the SR 151 corridor).

Alternative 2-Wonderland Boulevard Connection to SR 151 at Shasta Way

- *SR 151/Shasta Street*

  - Signalization with an eight-phase signal
  - One left, one through and one shared through-right in the eastbound approach (these improvements will provide additional capacity)
  - One left, two through and one right turn lane in the westbound approach (these improvements will provide additional capacity)
  - One left, through and right turn lane in the northbound approach (these improvements will provide additional capacity)
  - Two left, one through and one right turn lane in the southbound approach (these improvements will provide additional capacity)

- *SR 151/Cascade Boulevard*

  - One left, one through and one shared through-right in the eastbound approach (these improvements will provide additional capacity)
  - One left, two through and one right turn lane in the westbound approach (these improvements will provide additional capacity)
  - Right turn only lane in both the northbound and southbound approaches

- *SR 151/I-5 SB Ramps*

  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ± 1,000 feet long I-5 SB auxiliary lane

(Note: Although the intersections of SR 151/Cascade Boulevard and SR 151/I-5 SB Ramps are projected to operate at acceptable LOS as shown in the LOS tables, they do not operate acceptably based on the vehicle queues. Therefore, improvements are recommended at these intersections to accommodate the long queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation queuing analysis of the SR 151 corridor.)

Pine Grove Boulevard Corridor between Cascade Boulevard and Twin View Boulevard

The following improvements, that would provide acceptable LOS and accommodate the 95th percentile queues, are recommended. The 95th percentile queue lengths are based on Synchro/Simtraffic analysis. The existing turn pocket lengths at the study intersections were estimated using aerial photography.

- *Pine Grove Avenue/Cascade Boulevard*

  - Signalization
  - Realignment of the intersection to a new location west of its existing location, per the City of Shasta Lake General Plan

- Widening of northbound and southbound approaches to include one left, through and right turn lane (these improvements will provide additional capacity)

- *Pine Grove Avenue/I-5 SB Ramps*

  - Signalization

- *Pine Grove Avenue/I-5 NB Ramps*

  - Signalization
  - Widening of the northbound approach to include an exclusive left turn lane (these improvements will provide additional capacity)
  - Widening of the westbound approach to include an exclusive right turn lane (these improvements will provide additional capacity)

- *Pine Grove Avenue/Twin View Boulevard*

  - Signalization
  - Realignment of the intersection to a new location east of its existing location
  - Widening of eastbound and westbound approaches to include one left, through and one right turn lane (these improvements will provide additional capacity)
  - Widening of the northbound and southbound northbound and southbound approaches to a separate left turn lane (these improvements will provide additional capacity)

(Note: Although the intersection of Pine Grove Avenue/Twin View Boulevard is projected to operate at acceptable conditions as shown in the LOS tables, improvements are recommended at this intersection in order to accommodate the improvements recommended under the Pine Grove Avenue/Cascade Boulevard and Pine Grove Avenue/I-5 NB and SB Ramps and due to the close spacing of the four study intersections on Pine Grove Avenue).

Oasis Road/Cascade Boulevard: This signalized intersection is projected to operate at unacceptable LOS D during the AM and PM peak hours under *Year 2020 No Project* conditions. The following improvements are recommended.

- Realignment of the intersection (to a new location west of its existing location, per the City of Redding General Plan)
- Widening of eastbound and westbound approaches to include one left, three through and one right turn lane(s) (these improvements will provide additional capacity)
- Widening of the northbound approach to include one left, one through and one right turn lane (these improvements will provide additional capacity)
- Widening of the southbound approach to include two left, one through and one right turn lane(s) (these improvements will provide additional capacity)

These improvements would yield acceptable LOS.

Cypress Avenue/I-5 SB Ramps: This signalized intersection is projected to operate at unacceptable LOS E during the PM peak hour under *Year 2020 No Project* conditions. It is recommended that an additional (2nd) right turn lane be provided in the southbound direction. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level. This improvement would yield

acceptable LOS.

Mainline Segments

The following I-5 mainline segments are projected to operate at unacceptable LOS under *Year 2020 No Project* conditions:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C

It is recommended that an additional lane be provided in both the northbound and southbound direction on I-5. This improvement would yield acceptable LOS for the segments identified above.

Ramp Merge Diverge Junctions

The following I-5 ramp merge/diverge junctions are projected to operate at unacceptable LOS under *Year 2020 No Project* conditions:

I-5 & Cypress Avenue – NB On-Ramp:- The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would reduce the density on both the mainline segment and merge section, and thereby provide acceptable LOS.

I-5 & SR 44 – NB Connector from WB 44: The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would reduce the density on both the mainline segment and merge section, and thereby provide acceptable LOS.

I-5 & SR 44 – SB Connector to WB 44, SB Connector to EB 44: It is recommended that a collector-distributor ramp configuration (Interchange Type L-10) be provided. This will allow the exiting vehicles to use the auxiliary lane and reduce conflicts between the vehicles continuing SB on I-5 and the vehicles exiting to westbound SR 44. This improvement would yield acceptable LOS.

I-5 NB On-Ramp Merge Junction @ SR 273/I-5 Interchange - Consistent with the improvements identified within the City of Redding Oasis Road Specific Plan, it is recommended that a new overpass connection to Twin View Boulevard be provided. This improvement would divert the volume heading towards Twin View Boulevard from the on-ramp to the overpass connection, and thereby provides acceptable LOS.

YEAR 2020 PLUS PROJECT CONDITIONS RECOMMENDATIONS

The improvements recommended under the *Year 2020 No Project* conditions would accommodate *Year 2020 Plus Project* conditions at each location identified under *Year 2020 No Project* conditions. Additionally, the following improvements are recommended.

Intersections

Alternative 2-Wonderland Boulevard Connection to SR 151 at Shasta Way

- *Shasta Way/Front Street– Intersection #12*
  - Signalization with permitted (permissive) signal phasing in the east-west approaches
  - One left, one through and one shared through-right in the northbound approach (these improvements will provide additional capacity)
  - One left, one through and one shared through-right in the southbound approach (these improvements will provide additional capacity)

(Note: Improvements at Shasta Way/Front Street as discussed above would need to be constructed with the Wonderland Boulevard connection to SR 151 at Shasta Way due to the increased traffic volume on Shasta Way).

Mountain Gate Boulevard Interchange Improvement Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended.

Signal Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*
  - Realignment of the intersection to ±250 feet west of its existing location (to provide 450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)
  - Signalization
  - Exclusive left and right turn lanes in the eastbound and westbound approaches
  - Permitted (permissive) phasing in the northbound and southbound approaches
- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*
  - Signalization
  - Exclusive right turn lane in the northbound and westbound approaches
  - Split phasing in the eastbound and westbound approaches

Roundabout Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*
  - Roundabout be constructed ±250 feet west of its existing location (to provide 450 feet

minimum intersection spacing in conformance with the Caltrans Highway Design Manual)

- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*

  - Roundabout be constructed ±250 feet west of its existing location (to provide 450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)

Lake Boulevard/Pine Grove Avenue: Under *Year 2020 Plus Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The intersection does not meet the signal warrant criteria during either of the peak hours periods. Therefore, it is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control sign will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Oasis Road/I-5 NB Ramps: Under *Year 2020 Plus Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The following improvements are recommended.

- Widening of the eastbound approach to include an additional (2nd) left turn lane (these improvements will provide additional capacity)
- Widening of the westbound approach to include an exclusive westbound right turn lane (these improvements will provide additional capacity)
- Widening of the northbound approach to include an additional (2nd) left turn lane (this is in addition to the shared through-left lane)

These improvements would yield acceptable LOS.

Cypress Avenue/Hilltop Drive: This signalized intersection is projected to operate at unacceptable LOS D during the PM peak hour under *Year 2020 Plus Project* conditions. The following improvements are recommended.

- Restripe the northbound approach to include two left turn and one shared through-right lane. Two left turn lanes will be required to accommodate the heavy left turning volume from Hilltop Drive onto Cypress Avenue.
- Restripe the southbound approach to include one left, one shared through-right and one right turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level
- Change the signal phasing to include protected left turns in the north-south approaches
- Widening of the westbound approach to include an exclusive right turn lane. Adding a turn lane allows traffic to queue outside of the travel lane and keep through traffic flowing at an acceptable level

These improvements would yield acceptable LOS.

Mainline Segments

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following freeway mainline segments.

- I-5 NB, north of Cypress Avenue I/C
- I-5 SB, north of SR 299 I/C

It is recommended that an additional northbound lane be provided. This improvement would yield acceptable LOS for the segments identified above.

YEAR 2020 PLUS PROJECT CONDITIONS RECOMMENDATIONS – WITH BLACK CANYON ROAD ACCESS

Intersections

The following intersections would operate at unacceptable LOS under *Year 2020 Plus Project* conditions with the Black Canyon Road Extension Alternative.

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street
- SR 151/Cascade Boulevard

The various mitigation measures recommended under *Year 2020 Plus Project* conditions (Without the Black Canyon Road Access) would yield acceptable LOS for this alternative.

Roadways

Although Black Canyon Road is classified as an arterial, it currently operates as a Residential road and is projected to operate at unacceptable LOS E under *Year 2020 Plus Project* conditions, with the Black Canyon Road extension into the project site. In order to maintain acceptable LOS Conditions, it is recommended that Black Canyon Road be widened to "Residential Collector with frontage" standards to accommodate standard lane widths and shoulder widths.

YEAR 2030 NO PROJECT CONDITIONS RECOMMENDATIONS

Intersections

SR 151/Median Avenue: This intersection is projected to operate at unacceptable LOS D during the AM and PM peak hour periods under *Year 2030 No Project* conditions. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. The traffic signal will reduce the delay incurred by the minor street approach and will allow the vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

SR 151/Mussel Shoals Avenue: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS E and F during the AM and PM peak hour periods, respectively. Restricting access on the northbound and southbound approaches on Mussel Shoals Avenue is not recommended as Mussel Shoals Avenue is a north-south collector that connects several residential streets. Although, this intersection does not meet the peak hour volume signal warrant, to provide for better progression of traffic and intersection safety, it is recommended that a traffic signal be installed at this intersection. This will allow the northbound and southbound left turning vehicles on Mussel Shoals Avenue to easily get onto SR 151. This improvement would yield acceptable LOS.

Wonderland Boulevard Alignment Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended. The 95th percentile queue lengths are based on Synchro/Simtraffic analysis. The existing turn pocket lengths at the study intersections were estimated using aerial photography.

Alternative 1- Southerly connection of Wonderland Boulevard Extension as a "T" intersection with Cascade Boulevard (consistent with the Shasta County Travel Demand Model)

- *SR 151/Shasta Street*
  - Signalization with permitted (permissive) signal phasing in the north-south approaches (same as Year 2010 improvement)
  - Exclusive right turn lane in the westbound direction (same as Year 2010 improvement)
  - Additional (2nd) westbound left turn lane
  - Additional (2nd) eastbound through lane
- *SR 151/Cascade Boulevard*
  - Exclusive right turn lane in the westbound direction
  - Additional (2nd) eastbound left turn lane
  - Additional (2nd) southbound left turn lane
- *SR 151/I-5 SB Ramps*
  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ± 1,000 feet long I-5 SB auxiliary lane.

(Note: Although the intersections of SR 151/Cascade Boulevard and SR 151/I-5 SB Ramps are projected to operate at acceptable LOS as shown in the LOS tables, they do not operate acceptably based on the vehicle queues. Therefore, improvements are recommended at these intersections to accommodate the long queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation queuing analysis of the SR 151 corridor).

Alternative 2-Wonderland Boulevard Connection to SR 151 at Shasta Way

- *SR 151/Shasta Street*
  - Signalization with an eight-phase
  - One left, one through and one shared through-right in the eastbound approach
  - One left, two through and one right turn lane in the westbound approach
  - One left, through and right turn lane in the northbound approach
  - Two left, one through and one right turn lane in the southbound approach
- *SR 151/Cascade Boulevard*
  - One left, one through and one shared through-right in the eastbound approach

- One left, two through and one right turn lane in the westbound approach
- Right turn only lane in both the northbound and southbound approaches

- *SR 151/I-5 SB Ramps*

  - Convert the existing through lane to a shared through-right lane in the eastbound direction. This would necessitate widening the downstream I-5 SB on-ramp to accommodate the two lanes as well as adding a ± 1,000 feet long I-5 SB auxiliary lane.

(Note: Although the intersections of SR 151/Cascade Boulevard and SR 151/I-5 SB Ramps are projected to operate at acceptable LOS as shown in the LOS tables, they do not operate acceptably based on the vehicle queues. Therefore, improvements are recommended at these intersections to accommodate the long queues in the eastbound and westbound approaches on SR-151 based on a micro-simulation queuing analysis of the SR 151 corridor.)

Lake Boulevard/Pine Grove Avenue: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS E during the PM peak hour period. The intersection does not meet the signal warrant criteria during either of the peak hours periods. Therefore, it is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control sign will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Ashby Road/Pine Grove Avenue: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The intersection does not meet the signal warrant criteria during either of the peak hours periods. Therefore, it is recommended that the traffic volumes be monitored and implement an all-way stop control or a traffic signal when warranted. An all-way stop control sign will reduce the delay incurred by the minor street approach by equally distributing the delay at the intersection to all approaches and a traffic signal will allow vehicles on all approaches to cross the intersection safely. This improvement would yield acceptable LOS.

Pine Grove Boulevard Corridor between Cascade Boulevard and Twin View Boulevard

The following improvements, that would provide acceptable LOS and accommodate the 95th percentile queues, are recommended. The 95th percentile queue lengths are based on Synchro/Simtraffic analysis. The existing turn pocket lengths at the study intersections were estimated using aerial photography.

- *Pine Grove Avenue/Cascade Boulevard*

  - Signalization
  - Realignment of the intersection to a new location west of its existing location, per the City of Shasta Lake General Plan
  - Widening of northbound and southbound approaches to include one left, through and right turn lane

- *Pine Grove Avenue/I-5 SB Ramps*

  - Signalization

- *Pine Grove Avenue/I-5 NB Ramps*

  - Signalization
  - Widening of the northbound approach to include an exclusive left turn lane
  - Widening of the westbound approach to include an exclusive right turn lane

- *Pine Grove Avenue/Twin View Boulevard*

  - Signalization
  - Realignment of the intersection to a new location east of its existing location
  - Widening of eastbound and westbound approaches to include one left, through and one right turn lane
  - Widening of the northbound and southbound northbound and southbound approaches to a separate left turn lane

Oasis Road/Cascade Boulevard: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS D and LOS F during the AM and PM peak hour periods, respectively. The following improvements are recommended.

- Realignment of the intersection to a new location west of its existing location, pursuant to the City of Redding Oasis Area Specific Plan
- Widening of eastbound and westbound approaches to include one left, three through and one right turn lane(s)
- Widening of the northbound approach to include one left, one through and one right turn lane
- Widening of the southbound approach to include two left, one through and one right turn lane(s)

These improvements would yield acceptable LOS.

Oasis Road/I-5 NB Ramps: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The following improvements are recommended.

- Widening of the eastbound approach to include an additional (2^{nd}) left turn lane
- Widening of the westbound approach to include an exclusive westbound right turn lane
- Widening of the northbound approach to include an additional (2^{nd}) left turn lane (this is in addition to the shared through-left lane)

These improvements would yield acceptable LOS.

Oasis Road/Twin View Boulevard: Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS D during the PM peak hour period. The following improvements are recommended.

- Widening of the eastbound approach to include an additional (2^{nd}) left turn lane
- Widening of the southbound approach to include an additional right turn lane

These improvements would yield acceptable LOS.

SR 273/Lake Boulevard (SR 299): Under *Year 2030 No Project* conditions, this intersection is projected to operate at unacceptable LOS E during the PM peak hour period. The following improvements are recommended for this intersection:

- Widening of the eastbound and westbound approaches to include a third through lane (this improvement is consistent with the improvement identified within the City of Redding General Plan Circulation Element)

These improvements would yield acceptable LOS.

Cypress Avenue/I-5 SB Ramps: This signalized intersection is projected to operate at unacceptable LOS F during the PM peak hour under *Year 2030 No Project* conditions. The following improvements are recommended.

- Widening of the southbound approach to include an additional right turn lane (2nd right turn lane)
- Widening of the westbound approach to include an additional (2nd) left turn lane. This improvement would require widening of the I-5/Cypress Avenue undercrossing.

These improvements would yield acceptable LOS.

Cypress Avenue/I-5 NB Ramps: This signalized intersection is projected to operate at unacceptable LOS E during the PM peak hour under *Year 2030 No Project* conditions. The following improvements are recommended.

- Widening of the westbound approach to include an exclusive right turn lane (2010 and 2020 improvement)
- Widening of the eastbound approach to include an additional eastbound left turn lane. This improvement would require widening of the I-5/Cypress Avenue undercrossing.

These improvements would yield acceptable LOS.

Cypress Avenue/Hilltop Drive: This signalized intersection is projected to operate at unacceptable LOS D during the PM peak hour under *Year 2030 No Project* conditions. The following improvements are recommended.

- Restripe the northbound approach to include two left turn and one shared through-right lane
- Restripe the southbound approach to include one left, one shared through-right and one right turn lane
- Change the signal phasing to include protected left turns in the north-south approaches
- Widening of the westbound approach to include an exclusive right turn lane

These improvements would yield acceptable LOS.

Roadways

The Pine Grove Avenue segment to the west of Cascade Boulevard is projected to operate at unacceptable LOS F on a daily volume to capacity ratio basis. It is recommended that the segment be widened to four lane divided arterial standards. This improvement would provide additional capacity and yield acceptable LOS.

Mainline Segments

The following I-5 mainline segments are projected to operate at unacceptable LOS under *Year 2030 No Project* conditions:

- I-5 NB, south of Cypress Avenue I/C
- I-5 SB, south of Cypress Avenue I/C
- I-5 NB, north of Cypress Avenue I/C
- I-5 NB, north of SR 44 I/C
- I-5 SB, north of SR 44 I/C
- I-5 NB, north of SR 299 I/C
- I-5 SB, north of SR 299 I/C
- I-5 NB, north of Twin View Boulevard I/C

It is recommended that an additional lane be provided in both the northbound and southbound directions. This improvement would yield acceptable LOS for the segments identified above.

Ramp Merge Diverge Junctions

The following I-5 ramp merge/diverge junctions are projected to operate at unacceptable LOS under *Year 2030 No Project* conditions:

I-5 & Cypress Avenue – NB On-Ramp: The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would reduce the density on both the mainline segment and merge section, and thereby provide acceptable LOS.

I-5 & SR 44 – NB Connector from WB 44: The additional northbound mainline segment recommended earlier (within the Mainline Segments section) would reduce the density on both the mainline segment and merge section, and thereby provide acceptable LOS.

I-5 & SR 44 – SB Connector to WB 44, SB Connector to EB 44: It is recommended that a collector-distributor ramp configuration (Interchange Type L-10) be provided. This will allow the exiting vehicles to use the auxiliary lane and reduce conflicts between the vehicles continuing SB on I-5 and the vehicles exiting to westbound SR 44. This improvement would yield acceptable LOS.

I-5 NB On-Ramp Merge Junction @ SR 273/I-5 Interchange - Consistent with the improvements identified within the City of Redding Oasis Road Specific Plan, it is recommended that a new overpass connection to Twin View Boulevard be provided. This improvement would divert the volume heading towards Twin View Boulevard from the on-ramp to the overpass connection, and thereby provides acceptable LOS.

YEAR 2030 PLUS PROJECT CONDITIONS RECOMMENDATIONS

The improvements recommended under the *Year 2030 No Project* conditions would accommodate *Year 2030 Plus Project* conditions at each location identified under *Year 2030 No Project* conditions. Additionally, the following improvements are recommended.

Intersections

Alternative 2-Wonderland Boulevard Connection to SR 151 at Shasta Way

- *Shasta Way/Front Street– Intersection #12*
  - Signalization with permitted (permissive) signal phasing in the east-west approaches
  - One left, one through and one shared through-right in the northbound approach

- One left, one through and one shared through-right in the southbound approach.

(Note: Improvements at Shasta Way/Front Street as discussed above would need to be constructed with the Wonderland Boulevard connection to SR 151 at Shasta Way due to the increased traffic volume on Shasta Way).

Mountain Gate Boulevard Corridor Improvement Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended.

Signal Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*
  - Realignment of the intersection to ±250 feet west of its existing location (to provide 450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)
  - Signalization
  - Exclusive left and right turn lanes in the eastbound and westbound approaches
  - Permitted (permissive) phasing in the northbound and southbound approaches
- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*
  - Signalization
  - Exclusive right turn lane in the northbound and westbound approaches
  - Split phasing in the eastbound and westbound approaches

Roundabout Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*
  - Roundabout be constructed ±250 feet west of its existing location (to provide 450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)
- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*
  - Roundabout be constructed ±250 feet west of its existing location (to provide 450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)

Mainline Segments

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following freeway mainline segment:

- I-5 SB, north of Twin View Boulevard I/C

It is recommended that an additional southbound lane be provided. This improvement would yield acceptable LOS.

Ramp Merge Diverge Junctions

The project traffic would deteriorate the LOS from acceptable LOS under the "no project" conditions to unacceptable LOS under "plus project" conditions at the following ramp merge/diverge junctions.

I-5 & SR 151 – SB On-Ramp: A two lane SB on-ramp with a ±1000 feet long auxiliary lane is recommended. This improvement would yield acceptable LOS.

YEAR 2030 PLUS PROJECT CONDITIONS RECOMMENDATIONS – WITH BLACK CANYON ROAD ACCESS

Intersections

The following intersections would operate at unacceptable LOS under *Year 2030 Plus Project* conditions with the Black Canyon Road Extension Alternative.

- SR 151/Median Avenue
- SR 151/Mussel Shoals Avenue
- SR 151/Shasta Street
- SR 151/Cascade Boulevard

The various mitigation measures recommended under *Year 2030 Plus Project* conditions (Without the Black Canyon Road Access) would yield acceptable LOS for this alternative.

Roadways

Although Black Canyon Road is classified as an arterial, it currently operates as a Residential road and is projected to operate at unacceptable LOS E under *Year 2030 Plus Project* conditions, with the Black Canyon Road extension into the project site. In order to maintain acceptable LOS Conditions, it is recommended that Black Canyon Road be widened to "Residential Collector with frontage" standards to accommodate standard lane widths and shoulder widths.

YEAR 2030 PLUS PROJECT CONDITIONS RECOMMENDATIONS – INTERNAL CIRCULATION

Intersections

Intersections #1 and #2

- *Roundabout Alternative* – A well designed modern roundabout would yield acceptable LOS A conditions.
- *Signal Alternative* – A traffic signal with turn lanes in the northbound and southbound direction, split phasing in the east and westbound direction, would yield acceptable LOS C conditions.

FAIR-SHARE OF IMPROVEMENT COST CALCULATIONS

Fair-share calculations have been identified for all intersections, which are projected to operate at unacceptable LOS under no project conditions, and experience an increase in delay with the addition of project traffic. Below is a listing of each of the study intersections warranting improvements, the corresponding improvements that the proposed project would be required to pay a fair-share of improvement cost towards, and the proposed project's equitable share of these improvements. The proposed project's equitable share is calculated using the method for calculating equitable mitigation measures outlined in the *Caltrans Guide for the Preparation of Traffic Impact Studies* (State of California, DOT, December 2002), which is shown below:

$P = T/(T_B - T_E)$ where,

- P = The equitable share for the project's traffic impact
- T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).
- T_B = The forecasted traffic volume on an impacted State highway facility at the time of general plan build-out (e.g. 20 year model or the furthest future model date feasible), vph.
- T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

Year 2030 has been considered as the analysis year (general plan build-out conditions). Note that the percent fair-share calculated using the above formula is reported to the nearest whole number and the calculations are based on the PM peak hour volumes.

Intersection: Wonderland Boulevard/Mountain Gate Road

Fair-Share %: P= **95%**

Intersection: Mountain Gate Road/I-5 NB Ramps

Fair-Share %: P= **90%**

Intersection: SR 151/Median Avenue

Fair-Share %: P= **59%**

Intersection: SR 151/Mussel Shoals Avenue

Fair-Share %: P= **57%**

Intersection: SR 151/Shasta Street

Fair-Share %: P= **50%**

Intersection: SR 151/Cascade Boulevard

Fair-Share %: P= **62%**

Intersection: SR 151/I-5 SB Off-Ramp

Fair-Share %: P= **51%**

Intersection: **Lake Boulevard/Pine Grove Avenue**

Fair-Share %: P= **15%**

Intersection: **Ashby Road/Pine Grove Avenue**

Fair-Share %: P= **17%**

Intersection: **Pine Grove Avenue/Cascade Boulevard**

Fair-Share %: P= **7%**

Intersection: **Pine Grove Avenue/I-5 SB Ramps**

Fair-Share %: P= **9%**

Intersection: **Pine Grove Avenue/I-5 NB Ramps**

Fair-Share %: P= **14%**

Intersection: **Pine Grove Avenue/Twin View Boulevard**

Fair-Share %: P= **14%**

Intersection: **Oasis Road/Cascade Boulevard**

Fair-Share %: P= **3%**

Intersection: **Oasis Road/I-5 SB Ramps**

Fair-Share %: P= **4%**

Intersection: **Oasis Road/I-5 NB Ramps**

Fair-Share %: P= **5%**

Intersection: **Oasis Road/Twin View Boulevard**

Fair-Share %: P= **4%**

APPENDIX

LEVEL OF SERVICE WORKSHEETS (WILL BE PROVIDED IN A SEPARATE MEMO)
TRAFFIC COUNTS
ITE DEFINITION FOR SHOPPING CENTER
ITE PASS-BY RATES FOR SHOPPING CENTER
APPROVED/PENDING DEVELOPMENTS
TRIP GENERATION MEMO

LOS WORKSHEETS
(WILL BE PROVIDED IN A SEPARATE MEMO)

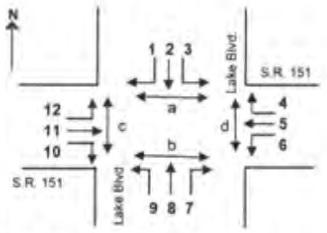
TRAFFIC COUNTS

Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#1 Wonderland Blvd./Old Oregon Trail**
Date 9/13/2006 Wed

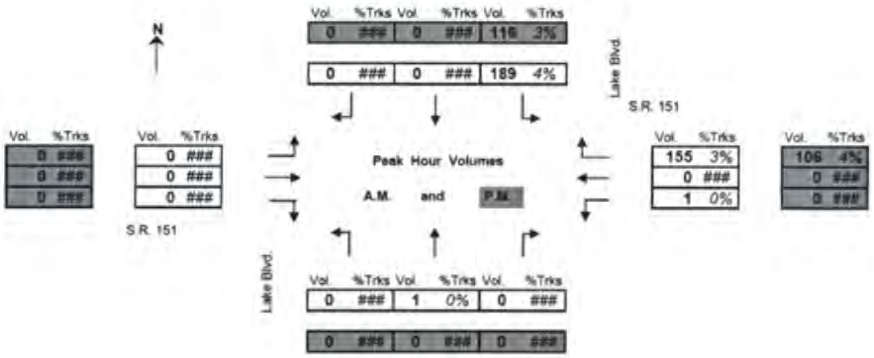


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	0	0	18	2	11	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	34		0
7:15-7:30	0	0	0	0	40	2	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	97		0-0/0-2
7:30-7:45	0	0	0	0	78	1	64	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	145		0-1/1-0
7:45-8:00	0	0	0	0	46	2	20	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	70	346	0-0/1-0
8:00-8:15	0	0	0	0	19	0	13	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	33	345	0-0/1-0
8:15-8:30	0	0	2	0	14	1	11	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	29	277	0-1/0-0
8:30-8:45	0	0	0	0	19	1	9	3	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	36	168	0-1/0-0
8:45-9:00	0	0	0	0	12	2	5	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	21	119	0-0/0-1
Peak Hour 7:00-8:00																											
*cars / trks	0	0	0	0	182	7	150	5	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0			
Both:		0		0		189		155		0		1		0		1		0		0		0		0	346	346	0-1/2-2
% trks:		###		###		4%		3%		###		0%		###		0%		###		###		###		###			

Peak Hour Total Volume =	346
Peak Hour Total Cars =	334
Peak Hour Total Trucks =	12
Peak Hour Total % Trucks =	3%
*PHF =	0.60

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	0	0	18	1	21	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	44		0
4:15-4:30	0	0	0	0	24	2	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57		0
4:30-4:45	0	0	0	0	24	0	26	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52		0
4:45-5:00	0	0	0	0	29	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59	212	0-1/0-0
5:00-5:15	0	0	0	0	26	0	23	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	218	0-0/1-0
5:15-5:30	0	0	0	0	23	1	33	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	221	0-0/1-0
5:30-5:45	0	0	0	0	35	2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	53	222	0
5:45-6:00	0	0	0	0	19	2	26	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	211	0-1/0-0
Peak Hour 4:45-5:45 pm																											
*cars / trks	0	0	0	0	113	3	102	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
Both:		0		0		116		106		0		0		0		0		0		0		0		0	222	222	0-1/0-0
% trks:		###		###		3%		4%		###		###		###		###		###		###		###		###			

Peak Hour Total Volume =	222
Peak Hour Total Cars =	215
Peak Hour Total Trucks =	7
Peak Hour Total % Trucks =	3%
*PHF =	0.93

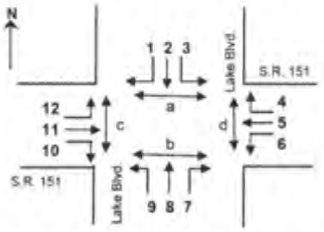


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#2 Old Oregon Trail/I5 SB Ramps**
Date 9/13/2006 Wed

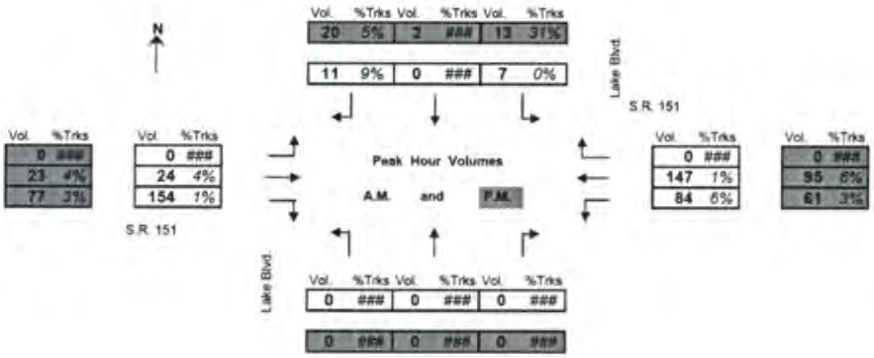


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	4	0	0	0	1	0	0	0	11	1	8	3	0	0	0	0	0	0	17	0	6	0	0	0	51		0
7:15-7:30	3	0	0	0	2	0	0	0	50	1	27	0	0	0	0	0	0	0	32	1	5	1	0	0	122		0-0/0-2
7:30-7:45	0	0	0	0	3	0	0	0	67	0	25	2	0	0	0	0	0	0	58	0	5	0	0	0	160		0-1/1-0
7:45-8:00	3	1	0	0	1	0	0	0	17	0	19	0	0	0	0	0	0	0	45	1	7	0	0	0	94	427	0-0/1-0
8:00-8:15	1	0	0	0	0	1	0	0	10	3	15	0	0	0	0	0	0	0	17	1	3	0	0	0	51	427	0-0/1-0
8:15-8:30	1	0	0	0	4	0	0	0	7	0	8	0	0	0	0	0	0	0	6	1	2	0	0	0	29	334	0-1/0-0
8:30-8:45	3	0	0	0	3	1	0	0	6	0	17	0	0	0	0	0	0	0	15	0	3	2	0	0	50	224	0-1/0-0
8:45-9:00	4	0	0	0	2	0	0	0	8	0	15	1	0	0	0	0	0	0	13	0	3	0	0	0	46	176	0-0/0-1
***Peak Hour 7:00-8:00 am**																											
*cars / trks	10	1	0	0	7	0	0	0	145	2	79	5	0	0	0	0	0	0	152	2	23	1	0	0			
Both:		11		0		7		0		147		84		0		0		0		154		24		0	427	427	0-1/2-2
% trks:		9%		###		0%		###		1%		6%		###		###		###		1%		4%		###			

Peak Hour Total Volume =	427
Peak Hour Total Cars =	416
Peak Hour Total Trucks =	11
Peak Hour Total % Trucks =	3%
*PHF =	0.67

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	5	0	0	0	4	2	0	0	13	2	16	2	0	0	0	0	0	0	14	0	4	1	0	0	63		0
4:15-4:30	9	1	0	0	0	1	0	0	24	0	9	0	0	0	0	0	0	0	22	2	2	0	0	0	70		0
4:30-4:45	0	0	0	1	3	1	0	0	26	3	20	0	0	0	0	0	0	0	14	0	6	0	0	0	74		0
4:45-5:00	5	0	0	1	2	0	0	0	26	1	14	0	0	0	0	0	0	0	25	0	10	0	0	0	84	291	0-1/0-0
5:00-5:15	2	0	0	0	4	1	0	0	16	0	15	0	0	0	0	0	0	0	14	0	10	0	0	0	62	290	0-0/1-0
5:15-5:30	2	2	0	0	2	0	0	0	28	1	7	0	0	0	0	0	0	0	17	0	4	1	0	0	64	284	0-0/1-0
5:30-5:45	1	0	0	0	2	3	0	0	17	0	15	0	0	0	0	0	0	0	26	2	5	0	0	0	71	281	0
5:45-6:00	4	0	1	0	3	0	0	0	23	1	6	0	0	0	0	0	0	0	7	1	6	0	0	0	52	249	0-1/0-0
***Peak Hour 4:00-5:00 pm**																											
*cars / trks	19	1	0	2	9	4	0	0	89	6	59	2	0	0	0	0	0	0	75	2	22	1	0	0			
Both:		20		2		13		0		95		61		0		0		0		77		23		0	291	291	0-1/0-0
% trks:		5%		###		31%		###		6%		3%		###		###		###		3%		4%		###			

Peak Hour Total Volume =	291
Peak Hour Total Cars =	273
Peak Hour Total Trucks =	18
Peak Hour Total % Trucks =	6%
*PHF =	0.87

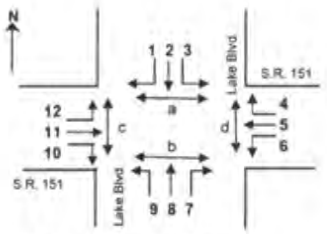


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#3 Old Oregon Trail/I5 NB Ramps**
Date 9/14/2006 Thurs



A.M.

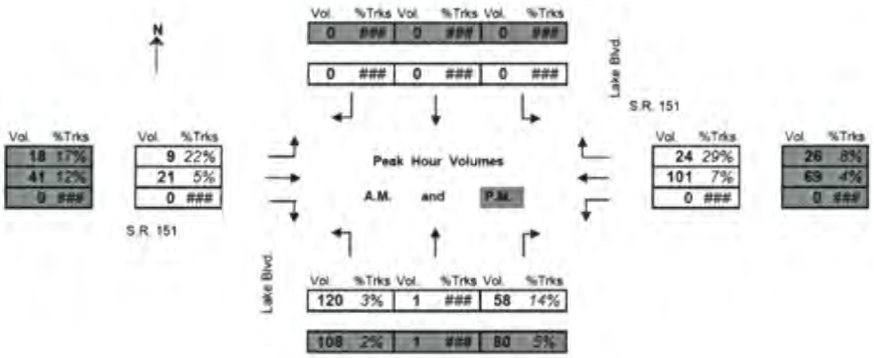
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	0	0	0	0	4	1	17	2	0	0	4	2	0	0	17	2	0	0	1	0	1	1	52		0
7:15-7:30	0	0	0	0	0	0	3	0	21	2	0	0	10	3	0	0	39	0	0	0	7	1	4	1	91		0-0/0-2
7:30-7:45	0	0	0	0	0	0	5	2	30	2	0	0	9	2	0	1	52	1	0	0	6	0	2	0	112		0-1/1-0
7:45-8:00	0	0	0	0	0	0	5	4	26	1	0	0	27	1	0	0	9	0	0	0	6	0	0	0	79	334	0-0/1-0
8:00-8:15	0	0	0	0	0	0	2	1	16	0	0	0	13	4	0	0	6	2	0	0	3	0	3	0	50	332	0-0/1-0
8:15-8:30	0	0	0	0	0	0	8	0	17	1	0	0	11	1	0	0	6	1	0	0	3	2	0	0	50	291	0-1/0-0
8:30-8:45	0	0	0	0	0	0	3	2	13	2	0	0	16	0	0	0	8	0	0	0	3	2	2	2	53	232	0-1/0-0
8:45-9:00	0	0	0	0	0	0	5	0	16	2	0	0	6	0	0	0	5	2	0	0	1	0	2	0	39	192	0-0/0-1
***Peak Hour 7:00-8:00 am**																											
*cars / trks	0	0	0	0	0	0	17	7	94	7	0	0	50	8	0	1	117	3	0	0	20	1	7	2			
Both:		**0**		**0**		**0**		**24**		**101**		**0**		**58**		**1**		**120**		**0**		**21**		**9**	334	334	0-1/2-2
% trks:		###		###		###		29%		7%		###		14%		###		3%		###		5%		22%			

Peak Hour Total Volume =	334
Peak Hour Total Cars =	305
Peak Hour Total Trucks =	29
Peak Hour Total % Trucks =	9%
*PHF =	0.75

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	0	0	0	0	10	1	17	1	0	0	13	0	1	0	17	0	0	0	7	2	2	0	71		0
4:15-4:30	0	0	0	0	0	0	7	0	14	3	0	0	13	2	0	0	11	0	0	0	7	3	2	2	84		0
4:30-4:45	0	0	0	0	0	0	6	0	25	0	0	0	18	3	0	1	19	1	0	0	9	1	1	0	84		0
4:45-5:00	0	0	0	0	0	0	6	1	14	2	0	0	14	3	0	0	26	0	0	0	8	1	2	0	77	296	0-1/0-0
5:00-5:15	0	0	0	0	0	0	1	1	17	1	0	0	19	2	0	1	19	1	0	0	10	2	2	1	77	302	0-0/1-0
5:15-5:30	0	0	0	0	0	0	10	0	13	0	0	0	26	0	0	0	22	0	0	0	9	0	9	1	90	328	0-0/1-0
5:30-5:45	0	0	0	0	0	0	8	1	19	1	0	0	16	1	0	0	30	0	0	0	6	2	1	0	85	329	0
5:45-6:00	0	0	0	0	0	0	5	0	17	1	0	0	15	1	0	0	35	1	0	0	11	1	3	1	91	343	0-1/0-0
***Peak Hour 5:00-6:00 pm**																											
*cars / trks	0	0	0	0	0	0	24	2	66	3	0	0	76	4	0	1	106	2	0	0	36	5	15	3			
Both:		**0**		**0**		**0**		**26**		**69**		**0**		**80**		**1**		**108**		**0**		**41**		**18**	343	343	0-1/0-0
% trks:		###		###		###		8%		4%		###		5%		###		2%		###		12%		17%			

Peak Hour Total Volume =	343
Peak Hour Total Cars =	323
Peak Hour Total Trucks =	20
Peak Hour Total % Trucks =	6%
*PHF =	0.94

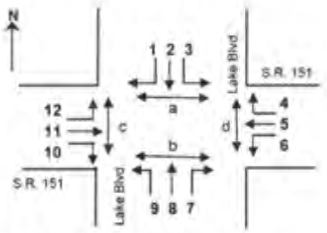


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#4 Old Oregon Trail/Holiday Road**
Date 9/14/2006 Thurs

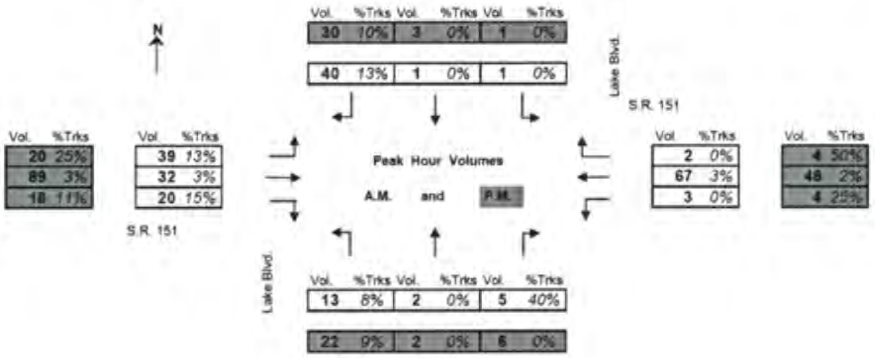


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	1	0	0	0	0	0	0	0	20	2	0	0	0	0	0	0	1	0	0	0	3	1	2	1	31		0
7:15-7:30	2	1	0	0	0	0	0	0	17	2	0	0	0	0	0	0	2	1	6	1	9	1	3	1	46		0-0/0-2
7:30-7:45	7	2	0	0	0	0	1	0	25	1	1	0	0	0	0	0	5	0	3	0	7	0	7	1	60		0-1/1-0
7:45-8:00	10	3	0	0	1	0	1	0	17	0	2	0	0	0	1	0	5	1	8	0	9	0	18	1	77	214	0-0/1-0
8:00-8:15	11	0	1	0	0	0	0	0	6	0	0	0	1	0	0	0	1	0	3	1	8	0	5	2	39	222	0-0/1-0
8:15-8:30	7	0	0	0	0	0	0	0	17	1	0	0	2	2	1	0	1	0	3	2	7	1	4	1	49	225	0-1/0-0
8:30-8:45	2	1	0	0	0	0	0	0	9	1	1	1	0	0	0	0	2	3	4	0	10	1	6	0	41	206	0-1/0-0
8:45-9:00	7	1	0	0	0	0	0	0	12	0	1	0	3	1	0	0	2	1	1	0	5	0	2	0	36	165	0-0/0-1
***Peak Hour 7:30-8:30 am**																											
***cars / trks**	35	5	1	0	1	0	2	0	65	2	3	0	3	2	2	0	12	1	17	3	31	1	34	5			
Both:		40		1		1		2		67		3		5		2		13		20		32		39	225	225	0-1/2-2
% trks:		*13%*		*0%*		*0%*		*0%*		*3%*		*0%*		*40%*		*0%*		*8%*		*15%*		*3%*		*13%*			

Peak Hour Total Volume =	225
Peak Hour Total Cars =	206
Peak Hour Total Trucks =	19
Peak Hour Total % Trucks =	8%
*PHF =	0.73

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	8	1	0	0	0	0	1	0	13	0	1	0	2	0	0	0	6	0	4	0	15	1	0	0	52		0
4:15-4:30	3	1	0	0	2	0	1	1	17	0	1	0	0	0	0	0	3	0	2	0	11	3	3	4	52		0
4:30-4:45	8	0	0	0	1	0	2	1	10	0	0	0	1	0	0	0	13	0	2	1	21	2	8	0	70		0
4:45-5:00	9	0	1	0	0	0	0	0	9	1	0	1	1	0	0	0	2	2	4	0	14	1	2	3	50	224	0-1/0-0
5:00-5:15	3	3	1	0	0	0	0	1	11	0	1	0	2	0	2	0	2	0	3	1	27	0	0	2	59	231	0-0/1-0
5:15-5:30	7	0	1	0	0	0	0	0	17	0	2	0	2	0	0	0	3	0	7	0	24	0	5	0	68	247	0-0/1-0
5:30-5:45	9	1	1	1	0	0	0	0	11	1	2	0	1	0	0	0	5	0	2	0	20	1	3	2	60	237	0
5:45-6:00	5	0	0	1	0	0	1	0	14	0	1	0	1	0	0	0	2	1	2	0	22	0	3	1	54	241	0-1/0-0
***Peak Hour 4:30-5:30 pm**																											
***cars / trks**	27	3	3	0	1	0	2	2	47	1	3	1	6	0	2	0	20	2	16	2	86	3	15	5			
Both:		30		3		1		4		48		4		6		2		22		18		89		20	247	247	0-1/0-0
% trks:		*10%*		*0%*		*0%*		*50%*		*2%*		*25%*		*0%*		*0%*		*9%*		*11%*		*3%*		*25%*			

Peak Hour Total Volume =	247
Peak Hour Total Cars =	228
Peak Hour Total Trucks =	19
Peak Hour Total % Trucks =	8%
*PHF =	0.88

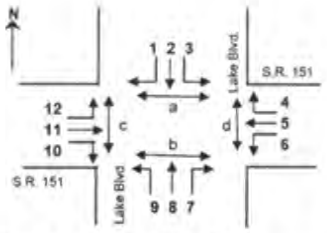


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#5 SR 151/Ashby Road**
Date 9/19/2006



A.M.

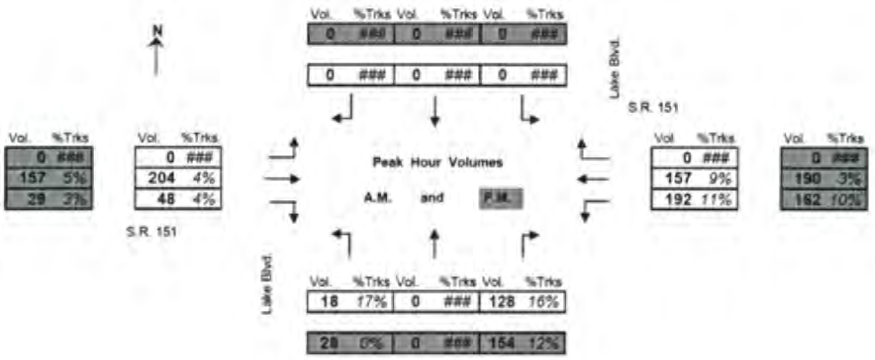
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	0	0	0	0	0	0	21	2	17	1	10	2	0	0	2	0	2	1	28	0	0	0	86		0
7:15-7:30	0	0	0	0	0	0	0	0	18	2	42	5	18	4	0	0	2	0	14	1	32	1	0	0	139		0-0/0-2
7:30-7:45	0	0	0	0	0	0	0	0	42	1	77	4	44	5	0	0	4	2	20	0	72	2	0	0	273		0-1/1-0
7:45-8:00	0	0	0	0	0	0	0	0	40	9	35	8	26	5	0	0	5	1	8	0	43	3	0	0	183	681	0-0/1-0
8:00-8:15	0	0	0	0	0	0	0	0	43	2	17	4	20	6	0	0	4	0	4	1	49	2	0	0	152	747	0-0/1-0
8:15-8:30	0	0	0	0	0	0	0	0	31	1	19	5	23	3	0	0	9	1	3	0	25	3	0	0	123	731	0-1/0-0
8:30-8:45	0	0	0	0	0	0	0	0	29	0	12	5	19	5	0	0	4	0	3	0	33	0	0	0	110	568	0-1/0-0
8:45-9:00	0	0	0	0	0	0	0	0	24	1	15	1	14	5	0	0	3	0	2	1	43	0	0	0	109	494	0-0/0-1
*Peak Hour 7:15-8:15 am																											
*cars / trks	0	0	0	0	0	0	0	0	143	14	171	21	108	20	0	0	15	3	46	2	196	8	0	0			
Both:		0		0		0		0		157		192		128		0		18		48		204		0	747	747	0-1/2-2
% trks:		###		###		###		###		9%		11%		16%		###		17%		4%		4%		###			

Peak Hour Total Volume =	747
Peak Hour Total Cars =	679
Peak Hour Total Trucks =	68
Peak Hour Total % Trucks =	9%
*PHF =	0.68

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	0	0	0	0	0	0	48	1	33	2	35	5	0	0	10	0	5	1	49	2	0	0	191		0
4:15-4:30	0	0	0	0	0	0	0	0	44	4	37	10	35	3	0	0	9	0	10	0	31	4	0	0	187		0
4:30-4:45	0	0	0	0	0	0	0	0	41	0	35	2	36	6	0	0	7	0	6	0	28	1	0	0	162		0
4:45-5:00	0	0	0	0	0	0	0	0	52	0	41	2	30	4	0	0	2	0	7	0	41	1	0	0	180	720	0-1/0-0
5:00-5:15	0	0	0	0	0	0	0	0	54	1	29	0	32	2	0	0	7	0	2	0	45	0	0	0	172	701	0-0/1-0
5:15-5:30	0	0	0	0	0	0	0	0	55	0	32	4	17	1	0	0	10	0	7	0	30	2	0	0	158	672	0-0/1-0
5:30-5:45	0	0	0	0	0	0	0	0	79	0	32	1	27	2	0	0	15	1	8	0	40	0	0	0	205	715	0
5:45-6:00	0	0	0	0	0	0	0	0	56	0	33	0	31	1	0	0	9	0	7	0	35	1	0	0	173	708	0-1/0-0
*Peak Hour 4:00-5:00 pm																											
*cars / trks	0	0	0	0	0	0	0	0	185	5	146	16	136	18	0	0	28	0	28	1	149	8	0	0			
Both:		0		0		0		0		190		162		154		0		28		29		157		0	720	720	0-1/0-0
% trks:		###		###		###		###		3%		10%		12%		###		0%		3%		5%		###			

Peak Hour Total Volume =	720
Peak Hour Total Cars =	672
Peak Hour Total Trucks =	48
Peak Hour Total % Trucks =	7%
*PHF =	0.94

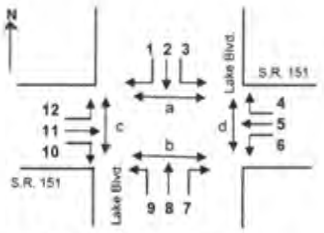


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#6 S.R. 151 (WB) / Montana Ave**
Date 9/12/2006 Tues.



A.M.

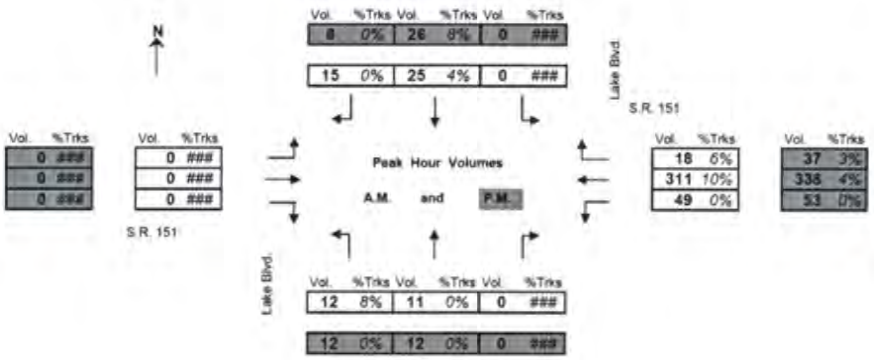
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	9	0	0	0	1	0	32	4	1	0	0	0	0	0	1	0	0	0	0	0	0	0	48		0
7:15-7:30	7	0	2	0	0	0	3	0	58	11	10	0	0	0	2	0	2	0	0	0	0	0	0	0	95		0-0/0-2
7:30-7:45	4	0	10	0	0	0	1	1	99	4	15	0	0	0	3	0	2	0	0	0	0	0	0	0	139		0-1/1-0
7:45-8:00	3	0	7	1	0	0	10	0	85	7	7	0	0	0	3	0	3	1	0	0	0	0	0	0	127	409	0-0/1-0
8:00-8:15	1	0	5	0	0	0	3	0	39	8	17	0	0	0	3	0	4	0	0	0	0	0	0	0	80	441	0-0/1-0
8:15-8:30	1	0	8	0	0	0	2	0	52	4	3	0	0	0	1	0	2	0	0	0	0	0	0	0	73	419	0-1/0-0
8:30-8:45	1	0	7	0	0	0	0	0	39	4	13	1	0	0	0	0	3	0	0	0	0	0	0	0	68	348	0-1/0-0
8:45-9:00	0	0	2	0	0	0	0	0	41	4	6	0	0	0	2	0	1	0	0	0	0	0	0	0	56	277	0-0/0-1
Peak Hour 7:15-8:15 am																											
*cars / trks	15	0	24	1	0	0	17	1	281	30	49	0	0	0	11	0	11	1	0	0	0	0	0	0			
Both:		15		25		0		18		311		49		0		11		12		0		0		0	441	441	0-1/2-2
% trks:		0%		4%		###		6%		10%		0%		###		0%		8%		###		###		###			

Peak Hour Total Volume = 441
Peak Hour Total Cars = 408
Peak Hour Total Trucks = 33
Peak Hour Total % Trucks = 7%
*PHF = 0.79

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	4	0	4	0	0	0	4	0	65	5	7	1	0	0	4	0	3	0	0	0	0	0	0	0	97		0
4:15-4:30	6	0	5	1	0	0	7	0	81	4	8	0	0	0	0	0	4	0	0	0	0	0	0	0	116		0
4:30-4:45	4	0	8	0	0	0	8	0	75	3	9	2	0	0	2	0	2	0	0	0	0	0	0	0	113		0
4:45-5:00	2	0	3	0	0	0	6	0	80	2	20	1	0	0	2	0	0	0	0	0	0	0	0	0	116	442	0-1/0-0
5:00-5:15	2	0	3	0	0	0	7	0	82	1	11	0	0	0	3	0	3	0	0	0	0	0	0	0	112	457	0-0/1-0
5:15-5:30	2	0	10	0	0	0	12	0	72	4	15	0	0	0	3	0	0	0	0	0	0	0	0	0	116	459	0-0/1-0
5:30-5:45	1	0	5	2	0	0	3	0	86	1	16	0	0	0	1	0	3	0	0	0	0	0	0	0	118	464	0
5:45-6:00	3	0	6	0	0	0	14	1	84	8	11	0	0	0	5	0	6	0	0	0	0	0	0	0	138	486	0-1/0-0
Peak Hour 5:00-6:00 pm																											
*cars / trks	8	0	24	2	0	0	36	1	324	14	53	0	0	0	12	0	12	0	0	0	0	0	0	0			
Both:		8		26		0		37		338		53		0		12		12		0		0		0	486	486	0-1/0-0
% trks:		0%		8%		###		3%		4%		0%		###		0%		0%		###		###		###			

Peak Hour Total Volume = 486
Peak Hour Total Cars = 469
Peak Hour Total Trucks = 17
Peak Hour Total % Trucks = 3%
*PHF = 0.88

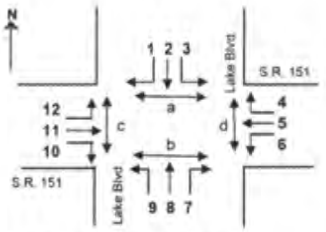


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#7 S.R. 151 (EB) / Montana Ave**
Date 9/12/2006 Tues.



A.M.

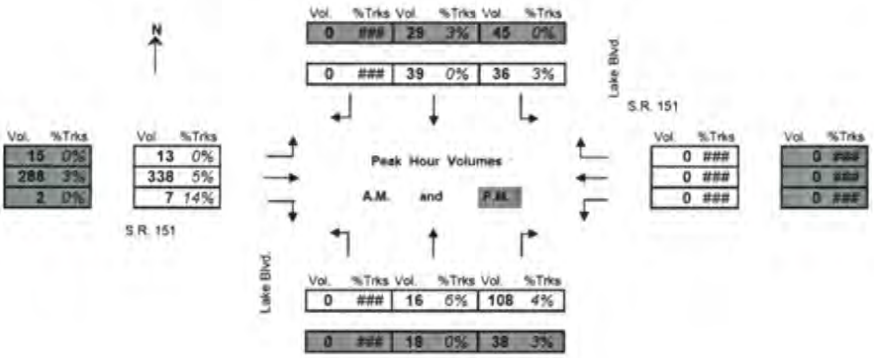
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	1	0	9	0	0	0	0	0	0	0	8	0	1	0	0	0	0	0	46	0	0	0	65		0
7:15-7:30	0	0	10	0	3	0	0	0	0	0	0	0	21	0	2	0	0	0	1	0	67	4	3	0	111		0-0/0-2
7:30-7:45	0	0	16	0	9	0	0	0	0	0	0	0	47	1	3	0	0	0	3	0	98	5	3	0	185		0-1/1-0
7:45-8:00	0	0	5	0	10	1	0	0	0	0	0	0	24	3	3	1	0	0	1	1	98	5	4	0	156	517	0-0/1-0
8:00-8:15	0	0	8	0	13	0	0	0	0	0	0	0	12	0	7	0	0	0	1	0	57	4	3	0	105	557	0-0/1-0
8:15-8:30	0	0	0	0	10	0	0	0	0	0	0	0	9	0	3	0	0	0	3	1	46	6	0	0	78	524	0-1/0-0
8:30-8:45	0	0	7	0	9	0	0	0	0	0	0	0	7	0	5	0	0	0	2	0	53	3	2	0	88	427	0-1/0-0
8:45-9:00	0	0	4	0	3	0	0	0	0	0	0	0	6	0	3	0	0	0	2	0	53	3	1	0	75	346	0-0/0-1
Peak Hour 7:15-8:15 am																											
*cars / trks	0	0	39	0	35	1	0	0	0	0	0	0	104	4	15	1	0	0	6	1	320	18	13	0			
Both:		**0**		**39**		**36**		**0**		**0**		**0**		**108**		**16**		**0**		**7**		**338**		**13**	557	557	0-1/2-2
% trks:		**###**		**0%**		**3%**		**###**		**###**		**###**		**4%**		**6%**		**###**		**14%**		**5%**		**0%**			

Peak Hour Total Volume = 557
Peak Hour Total Cars = 532
Peak Hour Total Trucks = 25
Peak Hour Total % Trucks = 4%
*PHF = 0.75

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	3	0	6	0	0	0	0	0	0	0	14	0	3	0	0	0	3	0	58	3	5	0	95		0
4:15-4:30	0	0	3	0	10	0	0	0	0	0	0	0	7	0	2	0	0	0	3	0	79	5	2	0	111		0
4:30-4:45	0	0	6	0	12	0	0	0	0	0	0	0	13	0	1	0	0	0	1	0	60	1	4	0	98		0
4:45-5:00	0	0	12	0	13	2	0	0	0	0	0	0	18	0	2	0	0	0	2	0	57	0	5	1	112	416	0-1/0-0
5:00-5:15	0	0	4	0	9	0	0	0	0	0	0	0	4	0	3	0	0	0	0	0	66	2	3	0	91	412	0-0/1-0
5:15-5:30	0	0	6	0	16	0	0	0	0	0	0	0	8	1	5	0	0	0	1	0	68	1	2	0	108	409	0-0/1-0
5:30-5:45	0	0	12	1	12	0	0	0	0	0	0	0	12	0	2	0	0	0	1	0	74	2	2	0	118	429	0
5:45-6:00	0	0	6	0	8	0	0	0	0	0	0	0	13	0	8	0	0	0	0	0	71	4	8	0	118	435	0-1/0-0
Peak Hour 5:00-6:00 pm																											
*cars / trks	0	0	28	1	45	0	0	0	0	0	0	0	37	1	18	0	0	0	2	0	279	9	15	0			
Both:		**0**		**29**		**45**		**0**		**0**		**0**		**38**		**18**		**0**		**2**		**288**		**15**	435	435	0-1/0-0
% trks:		**###**		**3%**		**0%**		**###**		**###**		**###**		**3%**		**0%**		**###**		**0%**		**3%**		**0%**			

Peak Hour Total Volume = 435
Peak Hour Total Cars = 424
Peak Hour Total Trucks = 11
Peak Hour Total % Trucks = 3%
*PHF = 0.92

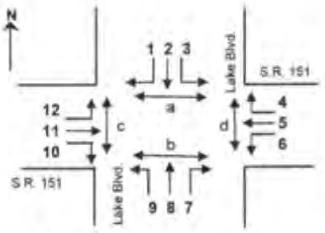


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#8 SR 151/Median Avenue**
Date 9/19/2006

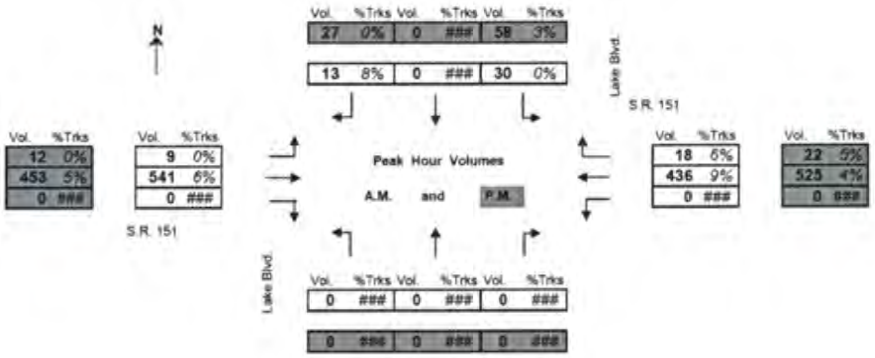


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	0	0	3	0	3	0	49	2	0	0	0	0	0	0	0	0	0	0	54	2	0	0	113		0
7:15-7:30	4	0	0	0	9	0	3	1	81	8	0	0	0	0	0	0	0	0	0	0	131	8	1	0	246		0-0/0-2
7:30-7:45	3	1	0	0	7	0	2	0	129	7	0	0	0	0	0	0	0	0	0	0	140	7	4	0	300		0-1/1-0
7:45-8:00	5	0	0	0	8	0	6	0	102	13	0	0	0	0	0	0	0	0	0	0	137	6	3	0	282	941	0-0/1-0
8:00-8:15	0	0	0	0	6	0	6	0	86	10	0	0	0	0	0	0	0	0	0	0	102	8	1	0	219	1047	0-0/1-0
8:15-8:30	1	0	0	0	3	0	3	1	51	4	0	0	0	0	0	0	0	0	0	0	51	5	1	0	120	921	0-1/0-0
8:30-8:45	4	0	0	0	6	0	2	0	61	7	0	0	0	0	0	0	0	0	0	0	80	4	0	0	164	785	0-1/0-0
8:45-9:00	1	0	0	0	6	0	3	0	62	7	0	0	0	0	0	0	0	0	0	0	75	6	1	0	161	664	0-0/0-1
***Peak Hour 7:15-8:15 am**																											
***cars / trks**	12	1	0	0	30	0	17	1	398	38	0	0	0	0	0	0	0	0	0	0	510	31	9	0			
Both:		13		0		30		18		436		0		0		0		0		0		541		9	1047	1047	0-1/2-2
% trks:		8%		###		0%		6%		9%		###		###		###		###		###		6%		0%			

Peak Hour Total Volume = 1047
Peak Hour Total Cars = 976
Peak Hour Total Trucks = 71
Peak Hour Total % Trucks = 7%
*PHF = 0.87

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	10	0	0	0	22	1	5	0	125	3	0	0	0	0	0	0	0	0	0	0	139	4	4	0	313		0
4:15-4:30	7	0	0	0	5	0	6	1	128	11	0	0	0	0	0	0	0	0	0	0	98	6	4	0	266		0
4:30-4:45	7	0	0	0	16	1	7	0	130	2	0	0	0	0	0	0	0	0	0	0	107	5	3	0	278		0
4:45-5:00	3	0	0	0	13	0	3	0	122	4	0	0	0	0	0	0	0	0	0	0	88	6	1	0	240	1097	0-1/0-0
5:00-5:15	6	0	0	0	12	0	6	0	114	3	0	0	0	0	0	0	0	0	0	0	120	5	9	0	275	1059	0-0/1-0
5:15-5:30	5	0	0	0	10	0	3	1	148	4	0	0	0	0	0	0	0	0	0	0	66	4	1	0	242	1035	0-0/1-0
5:30-5:45	8	0	0	0	11	0	7	0	134	3	0	0	0	0	0	0	0	0	0	0	108	1	2	0	274	1031	0
5:45-6:00	9	0	0	0	14	0	5	0	139	0	0	0	0	0	0	0	0	0	0	0	81	3	4	0	255	1046	0-1/0-0
***Peak Hour 4:00-5:00 pm**																											
***cars / trks**	27	0	0	0	56	2	21	1	505	20	0	0	0	0	0	0	0	0	0	0	432	21	12	0			
Both:		27		0		58		22		525		0		0		0		0		0		453		12	1097	1097	0-1/0-0
% trks:		0%		###		3%		5%		4%		###		###		###		###		###		5%		0%			

Peak Hour Total Volume = 1097
Peak Hour Total Cars = 1053
Peak Hour Total Trucks = 44
Peak Hour Total % Trucks = 4%
*PHF = 0.88

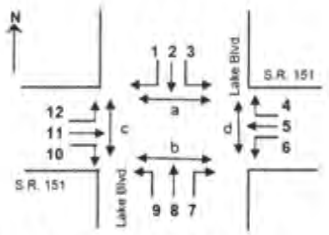


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#9 Mussel Shoals Avenue/Red Bluff Street**
Date 9/21/2008

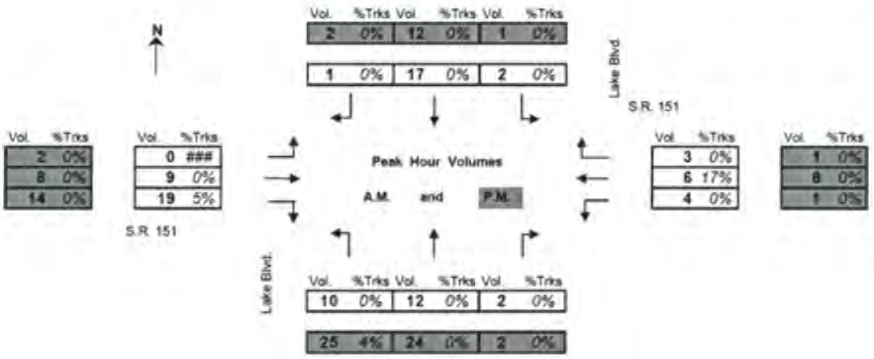


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	2	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0	0	0	0	0	6		0
7:15-7:30	1	0	5	0	0	0	0	0	1	0	2	0	1	0	5	0	0	0	5	1	1	0	0	0	22		0-0/0-2
7:30-7:45	0	0	5	0	1	0	2	0	3	0	1	0	0	0	2	0	2	0	4	0	2	0	0	0	22		0-1/1-0
7:45-8:00	0	0	4	0	1	0	0	0	0	1	1	0	1	0	4	0	3	0	3	0	4	0	0	0	22	72	0-0/1-0
8:00-8:15	0	0	3	0	0	0	1	0	1	0	0	0	0	0	1	0	5	0	6	0	2	0	0	0	19	85	0-0/1-0
8:15-8:30	0	0	5	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	4	0	1	0	0	0	13	76	0-1/0-0
8:30-8:45	0	0	4	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	1	0	1	0	0	0	10	64	0-1/0-0
8:45-9:00	0	0	8	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	1	0	1	0	14	56	0-0/0-1
***Peak Hour 7:15-8:15 am**																											
***cars / trks**	1	0	17	0	2	0	3	0	5	1	4	0	2	0	12	0	10	0	18	1	9	0	0	0			
Both:		1		17		2		3		6		4		2		12		10		19		9		0	85	85	0-1/2-2
% trks:		0%		0%		0%		0%		17%		0%		0%		0%		0%		5%		0%		###			

Peak Hour Total Volume = 85
Peak Hour Total Cars = 83
Peak Hour Total Trucks = 2
Peak Hour Total % Trucks = 2%
*PHF = 0.97

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	1	0	6	0	0	0	1	0	2	0	0	0	0	0	4	0	5	0	6	0	2	0	0	0	27		0
4:15-4:30	1	0	2	0	1	0	0	0	3	0	0	0	0	0	7	0	7	0	2	0	3	0	2	0	28		0
4:30-4:45	0	0	2	0	0	0	0	0	2	0	0	0	1	0	8	0	7	0	5	0	2	0	0	0	27		0
4:45-5:00	0	0	2	0	0	0	0	0	1	0	1	0	1	0	5	0	5	1	1	0	1	0	0	0	18	100	0-1/0-0
5:00-5:15	1	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	4	0	3	0	0	0	0	0	20	93	0-0/1-0
5:15-5:30	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0	6	0	3	0	1	0	1	0	18	83	0-0/1-0
5:30-5:45	2	0	1	0	1	0	0	0	4	0	0	0	1	0	4	0	3	1	4	0	1	0	0	0	22	78	0
5:45-6:00	1	0	5	0	0	0	0	0	1	0	0	0	0	0	2	0	3	0	3	0	1	0	0	0	16	76	0-1/0-0
***Peak Hour 4:00-5:00 pm**																											
***cars / trks**	2	0	12	0	1	0	1	0	8	0	1	0	2	0	24	0	24	1	14	0	8	0	2	0			
Both:		2		12		1		1		8		1		2		24		25		14		8		2	100	100	0-1/0-0
% trks:		0%		0%		0%		0%		0%		0%		0%		0%		4%		0%		0%		0%			

Peak Hour Total Volume = 100
Peak Hour Total Cars = 99
Peak Hour Total Trucks = 1
Peak Hour Total % Trucks = 1%
*PHF = 0.89

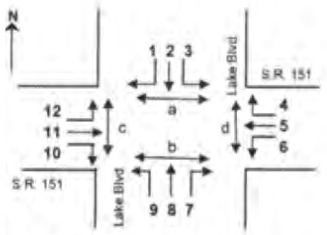


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#10 Mussel Shoals Ave/Main Street**
Date 9/20/2006

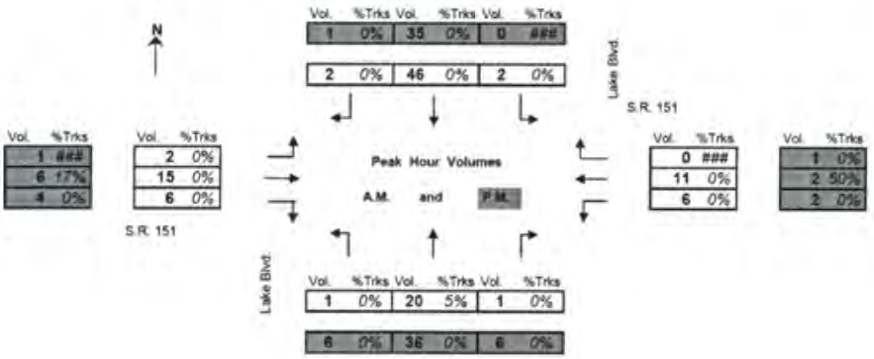


A.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	7	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	13		0
7:15-7:30	0	0	12	0	0	0	0	0	1	0	1	0	0	0	2	0	0	0	0	0	2	0	0	0	18		0-0/0-2
7:30-7:45	0	0	14	0	2	0	0	0	5	0	3	0	0	0	5	0	1	0	2	0	7	0	0	0	39		0-1/1-0
7:45-8:00	0	0	14	0	0	0	0	0	3	0	2	0	0	0	6	0	0	0	2	0	4	0	1	0	32	102	0-0/1-0
8:00-8:15	2	0	6	0	0	0	0	0	2	0	0	0	1	0	6	1	0	0	2	0	2	0	1	0	23	112	0-0/1-0
8:15-8:30	0	0	11	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	1	0	0	0	17	111	0-1/0-0
8:30-8:45	0	0	8	0	0	0	0	0	1	0	1	0	0	0	5	0	0	0	0	0	0	0	0	0	13	85	0-1/0-0
8:45-9:00	0	0	7	0	0	0	0	0	1	0	0	0	0	0	10	1	0	0	1	0	0	0	0	0	20	73	0-0/0-1
Peak Hour 7:15-8:15 am																											
*cars / trks	2	0	48	0	2	0	0	0	11	0	6	0	1	0	19	1	1	0	6	0	15	0	2	0			
Both:		2		46		2		0		11		6		1		20		1		6		15		2	112	112	0-1/2-2
% trks:		0%		0%		0%		###		0%		0%		0%		5%		0%		0%		0%		0%			

Peak Hour Total Volume = 112
Peak Hour Total Cars = 111
Peak Hour Total Trucks = 1
Peak Hour Total % Trucks = 1%
*PHF = 0.72

P.M.	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	5	0	0	0	0	0	1	0	0	0	1	0	9	0	1	0	1	0	1	0	0	0	19		0
4:15-4:30	0	0	5	0	0	0	0	0	1	0	1	0	0	0	11	0	1	0	0	1	3	0	1	0	24		0
4:30-4:45	1	0	6	0	0	0	0	0	1	0	2	0	0	0	3	0	2	0	1	0	1	0	0	0	17		0
4:45-5:00	1	0	5	0	0	0	1	0	0	0	1	0	3	0	13	0	3	0	1	0	3	0	0	0	31	91	0-1/0-0
5:00-5:15	0	0	7	0	0	0	0	0	1	0	0	0	0	0	8	0	2	0	2	0	1	0	0	0	21	93	0-0/1-0
5:15-5:30	0	0	18	0	0	0	0	0	0	1	1	0	1	0	5	0	0	0	1	0	0	0	0	0	27	96	0-0/1-0
5:30-5:45	0	0	5	0	0	0	0	0	0	0	0	0	2	0	10	0	1	0	0	0	1	1	0	1	21	100	0
5:45-6:00	0	0	8	0	0	0	0	0	1	0	1	0	0	0	10	0	3	0	1	0	0	0	1	0	25	94	0-1/0-0
Peak Hour 4:45-5:45 pm																											
*cars / trks	1	0	35	0	0	0	1	0	1	1	2	0	6	0	36	0	6	0	4	0	5	1	0	1			
Both:		1		35		0		1		2		2		6		36		6		4		6		1	100	100	0-1/0-0
% trks:		0%		0%		###		0%		50%		0%		0%		0%		0%		0%		17%		###			

Peak Hour Total Volume = 100
Peak Hour Total Cars = 97
Peak Hour Total Trucks = 3
Peak Hour Total % Trucks = 3%
*PHF = 0.81

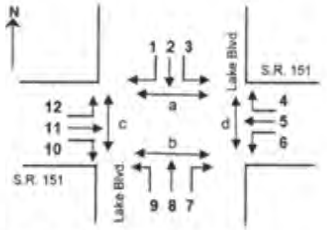


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#11 SR 151/Mussel Shoals Avenue**
Date 9/21/2006



A.M.

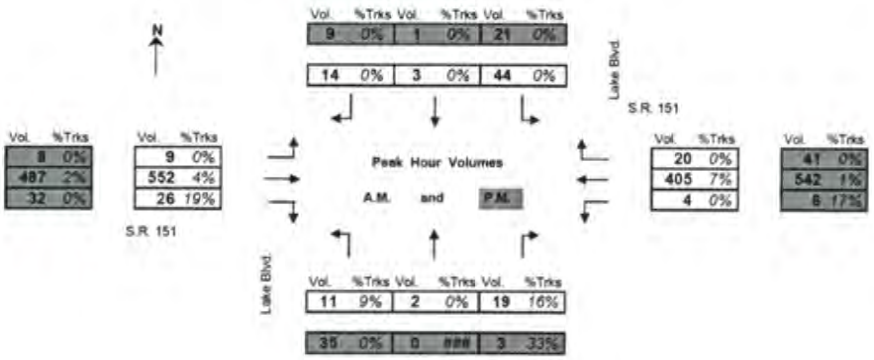
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	2	0	1	0	6	0	4	0	49	5	1	0	5	0	0	0	3	0	2	0	96	8	1	0	183		0
7:15-7:30	1	0	1	0	11	0	3	0	93	9	0	0	6	0	0	0	2	0	6	0	135	5	0	0	272		0-0/0-2
7:30-7:45	8	0	0	0	11	0	5	0	103	8	3	0	8	2	1	0	0	0	6	0	155	8	1	0	319		0-1/1-0
7:45-8:00	2	0	2	0	14	0	8	0	100	6	0	0	2	0	1	0	4	0	4	1	152	5	6	0	307	1081	0-0/1-0
8:00-8:15	3	0	0	0	8	0	4	0	80	6	1	0	0	1	0	0	4	1	5	4	86	6	2	0	211	1109	0-0/1-0
8:15-8:30	3	0	1	0	12	0	1	1	58	8	0	0	1	0	1	0	2	0	5	0	78	4	0	0	173	1010	0-1/0-0
8:30-8:45	5	0	0	0	6	0	3	0	59	7	2	0	0	5	0	0	0	0	7	0	90	7	3	0	194	885	0-1/0-0
8:45-9:00	2	0	0	0	6	0	9	0	68	7	0	0	1	0	0	0	1	0	4	0	63	4	0	1	186	764	0-0/0-1
***Peak Hour 7:15-8:15 am**																											
*cars / trks	14	0	3	0	44	0	20	0	376	29	4	0	16	3	2	0	10	1	21	5	528	24	9	0			
Both:		14		3		44		20		405		4		19		2		11		26		552		9	1109	1109	0-1/2-2
% trks:		0%		0%		0%		0%		7%		0%		16%		0%		9%		19%		4%		0%			

Peak Hour Total Volume =	1109
Peak Hour Total Cars =	1047
Peak Hour Total Trucks =	62
Peak Hour Total % Trucks =	6%
*PHF =	0.87

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	1	0	0	0	5	0	7	0	121	3	0	0	3	0	0	0	6	0	11	0	119	5	3	0	284		0
4:15-4:30	2	0	0	0	3	1	10	0	110	6	4	0	0	0	1	0	4	0	15	0	99	5	3	0	263		0
4:30-4:45	8	0	0	0	6	0	5	0	127	1	0	0	4	0	1	0	11	0	4	0	104	2	2	0	275		0
4:45-5:00	1	0	0	0	4	0	19	0	134	0	0	0	0	0	0	0	6	0	4	0	122	2	1	0	293	1115	0-1/0-0
5:00-5:15	6	0	0	0	5	0	6	0	122	0	1	0	0	0	0	0	17	0	8	0	142	0	3	0	310	1141	0-0/1-0
5:15-5:30	2	0	1	0	7	0	8	0	137	6	4	1	1	0	0	0	7	0	12	0	105	3	2	0	294	1172	0-0/1-0
5:30-5:45	0	0	0	0	5	0	10	0	143	0	0	0	1	1	0	0	5	0	8	0	109	4	2	0	288	1185	0
5:45-6:00	3	0	0	0	8	0	9	0	143	0	1	0	1	0	0	0	12	0	5	0	107	2	1	0	292	1184	0-1/0-0
***Peak Hour 4:45-5:45 pm**																											
*cars / trks	9	0	1	0	21	0	41	0	536	6	5	1	2	1	0	0	35	0	32	0	478	9	8	0			
Both:		9		1		21		41		542		6		3		0		35		32		487		8	1185	1185	0-1/0-0
% trks:		0%		0%		0%		0%		1%		17%		33%		###		0%		0%		2%		0%			

Peak Hour Total Volume =	1185
Peak Hour Total Cars =	1168
Peak Hour Total Trucks =	17
Peak Hour Total % Trucks =	1%
*PHF =	0.96

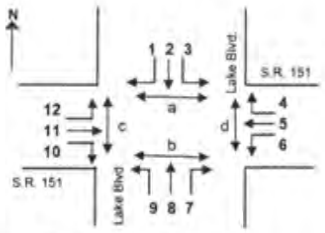


Intersection Volume Worksheet

Job Title: Mountain Gate

Job #: 45-5130-14

Location: **#12 Shasta Way/Front Street**
Date 9/26/2006



A.M.

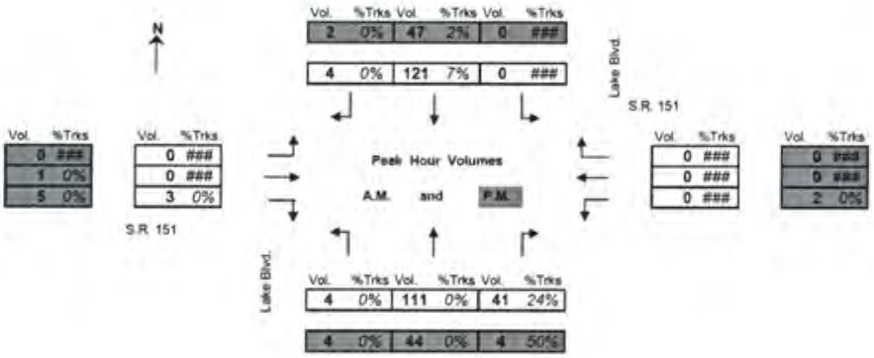
	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
7:00-7:15	0	0	5	2	0	0	0	0	0	0	1	0	2	2	8	0	0	0	0	0	0	0	0	0	20		0
7:15-7:30	1	0	19	6	0	0	0	0	0	0	0	0	7	7	21	0	2	0	0	0	0	0	0	0	63		0-0/0-2
7:30-7:45	2	0	42	3	0	0	0	0	0	0	0	0	17	3	45	0	0	0	0	0	0	0	0	0	112		0-1/1-0
7:45-8:00	1	0	31	0	0	0	0	0	0	0	0	0	5	0	28	0	1	0	1	0	0	0	0	0	67	262	0-0/1-0
8:00-8:15	0	0	20	0	0	0	0	0	0	0	0	0	2	0	17	0	1	0	2	0	0	0	0	0	42	284	0-0/1-0
8:15-8:30	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	7	228	0-1/0-0
8:30-8:45	0	0	9	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	15	131	0-1/0-0
8:45-9:00	0	0	7	0	0	0	0	0	0	0	0	0	1	1	4	0	1	0	1	0	0	0	0	0	15	79	0-0/0-1
Peak Hour 7:15-8:15 am																											
*cars / trks	4	0	112	9	0	0	0	0	0	0	0	0	31	10	111	0	4	0	3	0	0	0	0	0			
Both:		4		121		0		0		0		0		41		111		4		3		0		0	284	284	0-1/2-2
% trks:		0%		7%		###		###		###		###		24%		0%		0%		0%		###		###			

Peak Hour Total Volume =	284
Peak Hour Total Cars =	265
Peak Hour Total Trucks =	19
Peak Hour Total % Trucks =	7%
*PHF =	0.63

P.M.

	#1 cars	#1 trcks	#2 cars	#2 trcks	#3 cars	#3 trcks	#4 cars	#4 trcks	#5 cars	#5 trcks	#6 cars	#6 trcks	#7 cars	#7 trcks	#8 cars	#8 trcks	#9 cars	#9 trcks	#10 cars	#10 trcks	#11 cars	#11 trcks	#12 cars	#12 trcks	15 MIN.	60 MIN.	Peds. a-b/c-d
4:00-4:15	0	0	10	0	0	0	1	0	0	0	0	0	0	0	15	0	4	0	0	0	0	0	0	0	30		0
4:15-4:30	0	0	14	0	0	0	0	0	0	0	0	0	0	0	11	0	1	0	0	0	0	0	0	0	26		0
4:30-4:45	1	0	13	0	0	0	0	0	0	0	0	0	0	0	11	0	1	0	2	0	0	0	0	0	28		0
4:45-5:00	0	0	12	0	0	0	0	0	0	0	0	0	1	0	10	0	2	0	0	0	0	0	0	0	25	109	0-1/0-0
5:00-5:15	0	0	10	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	1	0	0	0	0	0	25	104	0-0/1-0
5:15-5:30	1	0	11	1	0	0	0	0	0	0	2	0	1	2	9	0	1	0	2	0	1	0	0	0	31	109	0-0/1-0
5:30-5:45	0	0	8	0	0	0	0	0	1	0	0	0	1	0	6	0	1	0	2	0	0	0	0	0	19	100	0
5:45-6:00	0	0	13	0	0	0	0	0	0	0	1	0	0	0	14	0	2	0	1	0	0	0	0	0	31	106	0-1/0-0
Peak Hour 4:30-5:30 pm																											
*cars / trks	2	0	46	1	0	0	0	0	0	0	2	0	2	2	44	0	4	0	5	0	1	0	0	0			
Both:		2		47		0		0		0		2		4		44		4		5		1		0	109	109	0-1/0-0
% trks:		0%		2%		###		###		###		0%		50%		0%		0%		0%		0%		###			

Peak Hour Total Volume =	109
Peak Hour Total Cars =	106
Peak Hour Total Trucks =	3
Peak Hour Total % Trucks =	3%
*PHF =	0.88



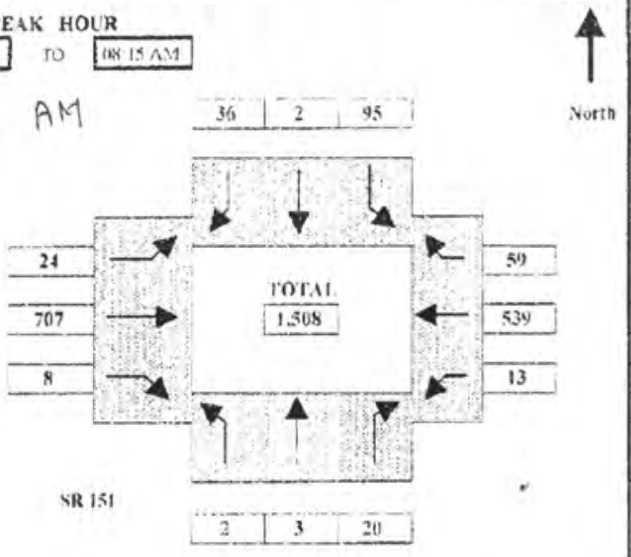
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

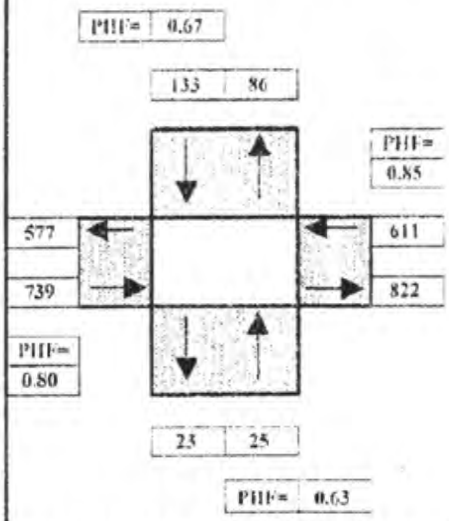
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	SHASTA	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 151STSLAM

PEAK HOUR
07:15 AM TO 08:15 AM

(13) AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	0	0	1	7	0	1	4	77	2	5	60	8	*163*
07:15 AM	—	07:30 AM	0	1	5	27	1	3	10	230	3	8	141	20	*449*
07:30 AM	—	07:45 AM	1	3	12	62	1	18	15	420	5	10	297	41	*885*
07:45 AM	—	08:00 AM	1	3	16	88	2	30	25	640	6	12	450	58	*1,331*
08:00 AM	—	08:15 AM	2	3	21	102	2	37	28	784	10	16	599	67	*1,671*
08:15 AM	—	08:30 AM	4	4	24	110	3	47	36	896	12	16	709	73	*1,934*
08:30 AM	—	08:45 AM	6	5	26	115	3	53	40	1,053	12	17	795	85	*2,210*
08:45 AM	—	09:00 AM	6	5	29	120	5	61	47	1,122	14	17	885	98	*2,414*
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	0	0	1	7	0	1	4	77	2	5	60	8	*163*
07:15 AM	—	07:30 AM	0	1	4	20	1	2	6	153	1	5	81	12	*286*
07:30 AM	—	07:45 AM	1	2	7	35	0	15	5	190	2	2	156	21	*436*
07:45 AM	—	08:00 AM	0	0	4	26	1	12	10	220	1	2	153	17	*446*
08:00 AM	—	08:15 AM	1	0	5	14	0	7	3	144	4	4	149	9	*340*
08:15 AM	—	08:30 AM	2	1	3	8	1	10	8	112	2	0	110	6	*263*
08:30 AM	—	08:45 AM	2	1	2	5	0	6	4	157	0	1	86	12	*276*
08:45 AM	—	09:00 AM	0	0	3	5	2	8	7	74	2	0	90	13	*204*
HOURLY TOTALS															
07:00 AM	—	08:00 AM	1	3	16	88	2	30	25	640	6	12	450	58	*1,331*
07:15 AM	—	08:15 AM	2	3	20	95	2	36	24	707	8	13	539	59	*1,508*
07:30 AM	—	08:30 AM	4	3	19	83	2	44	26	666	9	8	568	53	*1,485*
07:45 AM	—	08:45 AM	5	2	14	53	2	35	25	633	7	7	498	44	*1,325*
08:00 AM	—	09:00 AM	5	2	13	32	3	31	22	487	8	5	435	40	*1,083*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

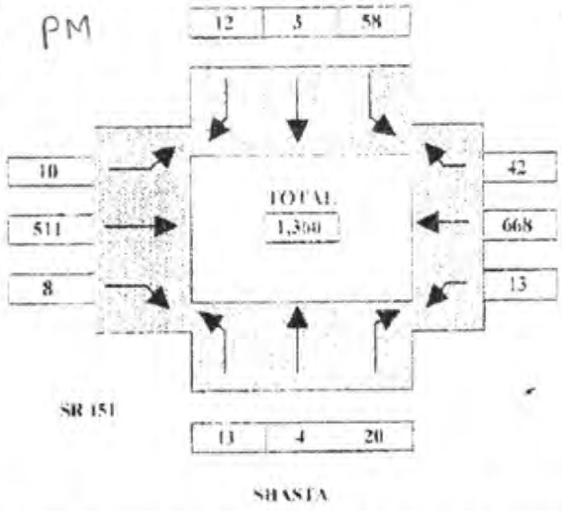
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

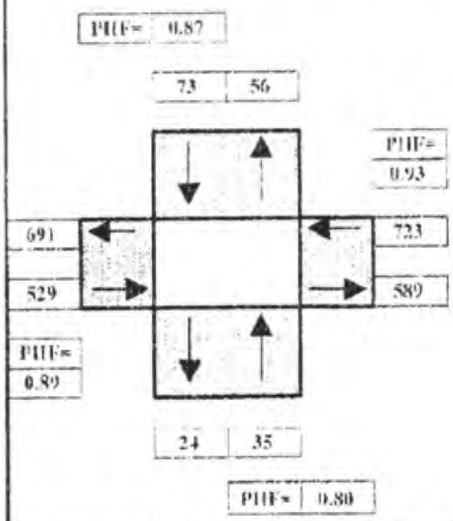
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9 / 14 / 2006	DAY: THURSADY
N-S Approach:	SHASTA	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 151STSLPM

PEAK HOUR
04:45 PM TO 05:45 PM

(13) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
04:00 PM	04:15 PM	2	3	6	9	1	2	5	102	1	2	152	9	294
04:15 PM	04:30 PM	2	4	10	23	1	2	9	208	4	4	314	20	601
04:30 PM	04:45 PM	3	6	17	31	3	4	16	328	7	9	416	27	897
04:45 PM	05:00 PM	7	6	22	45	3	7	18	472	13	10	609	41	1,250
05:00 PM	05:15 PM	10	8	27	62	4	10	20	590	12	15	775	53	1,586
05:15 PM	05:30 PM	11	10	31	74	6	15	25	721	12	16	935	59	1,915
05:30 PM	05:45 PM	14	10	37	89	6	16	26	839	15	22	1,114	69	2,257
05:45 PM	06:00 PM	15	12	40	98	8	18	26	944	16	25	1,282	77	2,561
TOTAL BY PERIOD														
04:00 PM	04:15 PM	2	3	6	9	1	2	5	102	1	2	152	9	294
04:15 PM	04:30 PM	0	1	4	14	0	0	4	106	3	2	162	11	307
04:30 PM	04:45 PM	1	2	7	8	2	2	7	120	3	5	102	7	296
04:45 PM	05:00 PM	4	0	5	14	0	3	2	144	5	1	193	14	353
05:00 PM	05:15 PM	3	2	5	17	1	3	2	118	2	5	166	12	336
05:15 PM	05:30 PM	1	2	4	12	2	5	5	131	0	1	160	6	329
05:30 PM	05:45 PM	3	0	6	15	0	1	1	118	3	6	179	10	342
05:45 PM	06:00 PM	1	2	3	9	2	2	0	105	1	3	168	8	304
HOURLY TOTALS														
04:00 PM	05:00 PM	7	6	22	45	3	7	18	472	13	10	609	41	1,250
04:15 PM	05:15 PM	8	5	21	53	3	8	15	488	11	13	623	44	1,292
04:30 PM	05:30 PM	9	6	21	51	5	13	16	513	8	12	671	39	1,314
04:45 PM	05:45 PM	11	4	20	58	3	12	10	511	8	13	668	42	1,360
05:00 PM	06:00 PM	8	6	18	53	5	11	8	472	6	15	675	36	1,311

Tel : (510) 232-1271 *Fax: (510) 232-1272*

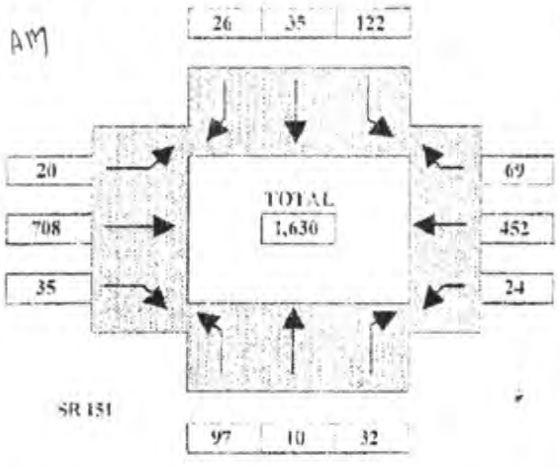
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

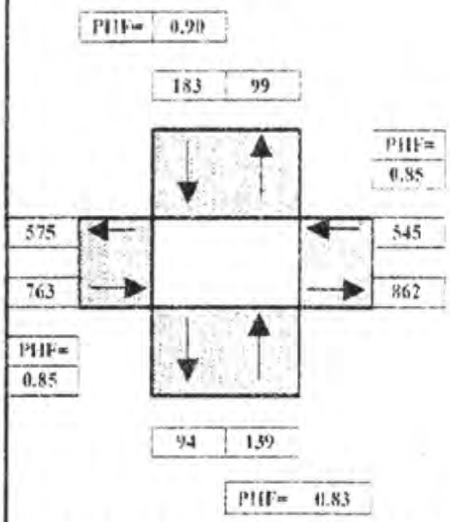
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	CASCADE	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 151CCSLAM

PEAK HOUR
07:30 AM TO 08:20 AM

14 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	10	2	12	31	3	5	3	79	4	2	41	11	*203*
07:15 AM	---	07:30 AM	25	3	25	68	10	12	10	201	11	6	118	23	*512*
07:30 AM	---	07:45 AM	55	7	33	97	22	18	14	398	16	9	239	40	*948*
07:45 AM	---	08:00 AM	81	10	40	135	30	22	22	604	26	16	381	51	*1,418*
08:00 AM	---	08:15 AM	103	13	46	164	36	31	27	785	38	20	485	73	*1,821*
08:15 AM	---	08:30 AM	122	18	57	190	45	38	30	909	46	30	570	92	*2,142*
08:30 AM	---	08:45 AM	139	16	65	212	52	45	34	1,015	58	37	642	112	*2,425*
08:45 AM	---	09:00 AM	155	17	70	229	63	53	38	1,105	66	45	705	143	*2,687*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	10	2	12	31	3	5	3	79	4	2	41	11	*203*
07:15 AM	---	07:30 AM	15	1	13	37	7	7	7	122	7	4	77	12	*309*
07:30 AM	---	07:45 AM	30	4	8	29	12	6	4	197	5	3	121	17	*436*
07:45 AM	---	08:00 AM	26	3	7	38	8	4	8	206	10	7	142	11	*470*
08:00 AM	---	08:15 AM	22	3	6	29	6	9	5	181	12	4	104	22	*403*
08:15 AM	---	08:30 AM	19	0	11	26	9	7	3	124	8	10	85	19	*321*
08:30 AM	---	08:45 AM	17	3	8	22	7	5	4	106	12	7	72	20	*283*
08:45 AM	---	09:00 AM	16	1	5	17	11	10	4	88	8	8	63	31	*262*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	81	10	40	135	30	22	22	604	26	16	381	51	*1,418*
07:15 AM	---	08:15 AM	93	11	34	133	33	26	24	706	34	18	444	62	*1,618*
07:30 AM	---	08:30 AM	97	10	32	122	35	26	20	708	35	24	452	69	*1,630*
07:45 AM	---	08:45 AM	84	9	32	115	30	25	20	617	42	28	403	72	*1,477*
08:00 AM	---	09:00 AM	74	7	30	94	33	31	16	499	40	29	324	92	*1,269*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

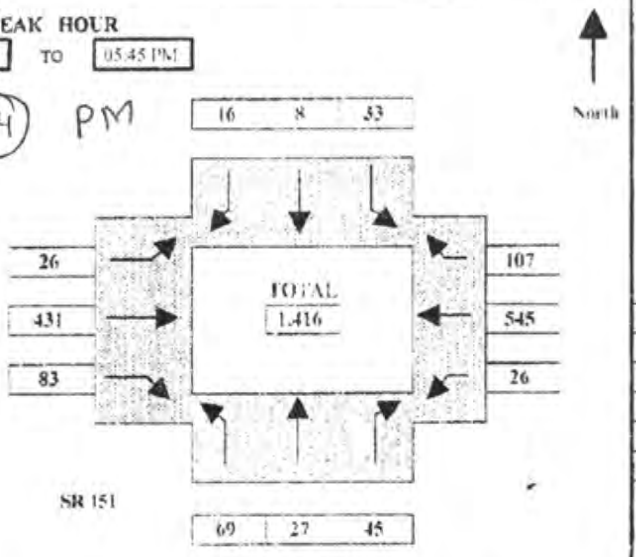
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

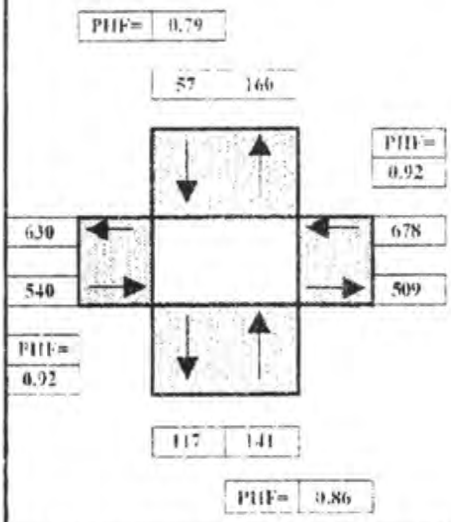
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9 / 14 / 2006	DAY: THURSADY
N-S Approach:	CASCADE	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 151CCSLPM

PEAK HOUR
04:45 PM TO 05:45 PM

(14) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
04:00 PM	04:15 PM	14	7	5	9	1	2	5	81	18	9	115	18	284
04:15 PM	04:30 PM	34	17	13	16	3	6	13	177	42	20	246	39	626
04:30 PM	04:45 PM	49	25	19	27	4	9	20	283	62	34	368	69	967
04:45 PM	05:00 PM	61	32	30	35	7	16	29	395	79	42	502	94	1,322
05:00 PM	05:15 PM	83	37	44	42	10	20	35	489	104	48	648	127	1,687
05:15 PM	05:30 PM	101	45	52	52	12	22	42	609	123	53	776	153	2,040
05:30 PM	05:45 PM	118	50	64	60	12	25	46	714	145	60	913	176	2,383
05:45 PM	06:00 PM	138	58	73	67	14	27	54	811	161	64	1,030	202	2,699
TOTAL BY PERIOD														
04:00 PM	04:15 PM	14	7	5	9	1	2	5	81	18	9	115	18	284
04:15 PM	04:30 PM	20	10	8	7	2	4	8	96	24	11	131	21	342
04:30 PM	04:45 PM	15	8	6	11	1	3	7	106	20	14	122	30	341
04:45 PM	05:00 PM	12	7	11	8	3	7	9	112	17	8	134	25	355
05:00 PM	05:15 PM	22	5	14	7	3	4	6	94	25	6	146	33	365
05:15 PM	05:30 PM	18	8	8	10	2	2	7	120	19	5	128	26	353
05:30 PM	05:45 PM	17	5	12	8	0	3	4	105	22	7	137	23	343
05:45 PM	06:00 PM	20	8	9	7	2	2	8	97	16	4	117	26	316
HOURLY TOTALS														
04:00 PM	05:00 PM	61	32	30	35	7	16	29	395	79	42	502	94	1,322
04:15 PM	05:15 PM	69	30	39	33	9	18	30	408	86	39	533	109	1,403
04:30 PM	05:30 PM	67	28	39	36	9	16	29	432	81	33	530	114	1,414
04:45 PM	05:45 PM	69	27	45	33	8	16	26	431	83	26	543	107	1,416
05:00 PM	06:00 PM	77	26	43	32	7	11	25	416	82	22	528	108	1,377

Tel : (510) 232-1271 *Fax: (510) 232-1272*

BAYMETRICS TRAFFIC RESOURCES

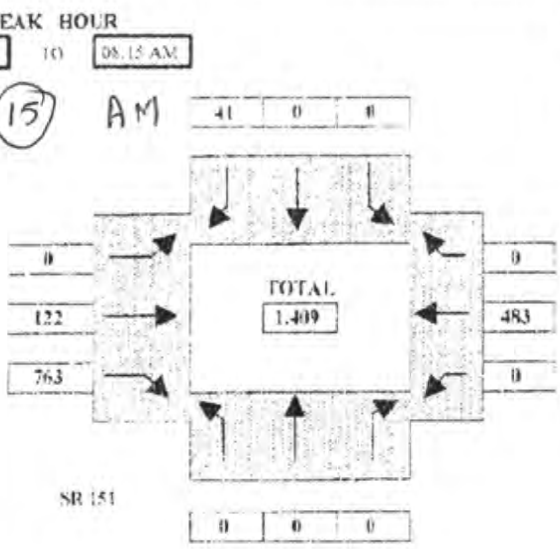
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 1515SSLAM

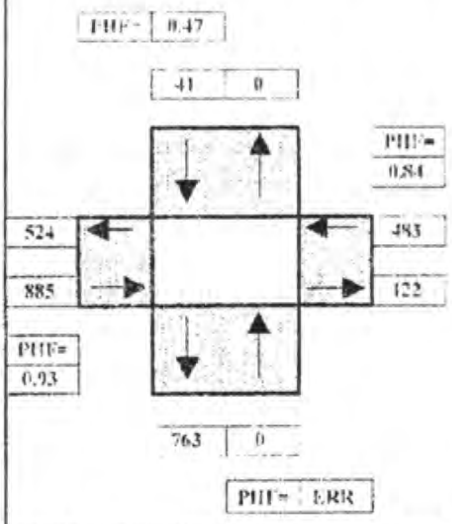
PEAK HOUR

07:15 AM to 08:15 AM

(15) AM



ARRIVAL/DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	0	0	0	0	0	3	0	13	102	0	56	0	*174*
07:15 AM	07:30 AM	0	0	0	0	0	10	0	38	262	0	153	0	*463*
07:30 AM	07:45 AM	0	0	0	0	0	19	0	72	465	0	277	0	*833*
07:45 AM	08:00 AM	0	0	0	0	0	33	0	107	660	0	421	0	*1,221*
08:00 AM	08:15 AM	0	0	0	0	0	44	0	135	865	0	539	0	*1,583*
08:15 AM	08:30 AM	0	0	0	0	0	60	0	157	992	0	640	0	*1,849*
08:30 AM	08:45 AM	0	0	0	0	0	82	0	180	1,118	0	713	0	*2,093*
08:45 AM	09:00 AM	0	0	0	0	0	99	0	200	1,193	0	799	0	*2,291*
TOTAL BY PERIOD														
07:00 AM	07:15 AM	0	0	0	0	0	3	0	13	102	0	56	0	*174*
07:15 AM	07:30 AM	0	0	0	0	0	7	0	25	160	0	97	0	*289*
07:30 AM	07:45 AM	0	0	0	0	0	9	0	34	203	0	124	0	*370*
07:45 AM	08:00 AM	0	0	0	0	0	14	0	35	195	0	144	0	*388*
08:00 AM	08:15 AM	0	0	0	0	0	11	0	28	205	0	118	0	*362*
08:15 AM	08:30 AM	0	0	0	0	0	16	0	22	127	0	101	0	*266*
08:30 AM	08:45 AM	0	0	0	0	0	22	0	23	126	0	73	0	*244*
08:45 AM	09:00 AM	0	0	0	0	0	17	0	20	75	0	86	0	*198*
HOURLY TOTALS														
07:00 AM	08:00 AM	0	0	0	0	0	33	0	107	660	0	421	0	*1,221*
07:15 AM	08:15 AM	0	0	0	0	0	41	0	122	763	0	483	0	*1,409*
07:30 AM	08:30 AM	0	0	0	0	0	50	0	119	730	0	487	0	*1,386*
07:45 AM	08:45 AM	0	0	0	0	0	63	0	108	653	0	436	0	*1,260*
08:00 AM	09:00 AM	0	0	0	0	0	65	0	93	533	0	378	0	*1,070*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

Sep 20 06 03:26p Baymetrics 5102321272 p.14

BAYMETRICS TRAFFIC RESOURCES

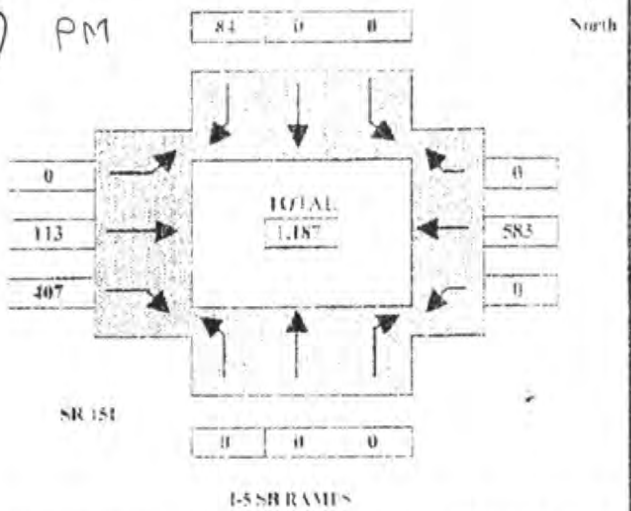
INTERSECTION TURNING MOVEMENT SUMMARY

PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	SR 151	CITY: SHASTA LAKE	FILE: 1515SSLAM

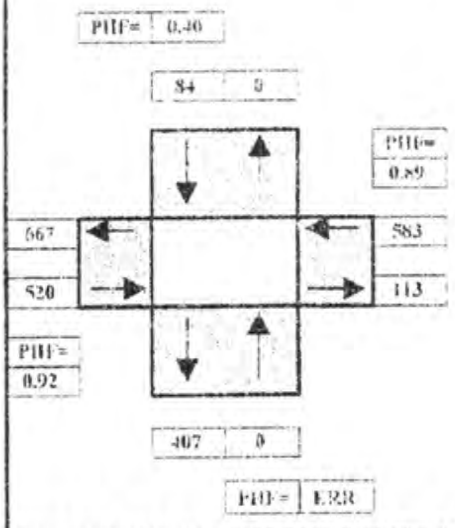
PEAK HOUR

07:45 AM TO 08:45 AM

15 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	0	0	0	0	0	19	0	30	70	0	116	0	235
07:15 AM	07:30 AM	0	0	0	0	0	45	0	59	138	0	265	0	507
07:30 AM	07:45 AM	0	0	0	0	0	67	0	96	224	0	408	0	795
07:45 AM	08:00 AM	0	0	0	0	0	84	0	126	375	0	501	0	1,086
08:00 AM	08:15 AM	0	0	0	0	0	110	0	150	434	0	705	0	1,399
08:15 AM	08:30 AM	0	0	0	0	0	133	0	182	521	0	857	0	1,693
08:30 AM	08:45 AM	0	0	0	0	0	151	0	209	631	0	991	0	1,982
08:45 AM	09:00 AM	0	0	0	0	0	171	0	229	718	0	1,129	0	2,247
TOTAL BY PERIOD														
07:00 AM	07:15 AM	0	0	0	0	0	19	0	30	70	0	116	0	235
07:15 AM	07:30 AM	0	0	0	0	0	29	0	29	68	0	149	0	272
07:30 AM	07:45 AM	0	0	0	0	0	22	0	37	86	0	143	0	288
07:45 AM	08:00 AM	0	0	0	0	0	17	0	30	151	0	93	0	291
08:00 AM	08:15 AM	0	0	0	0	0	26	0	26	99	0	164	0	315
08:15 AM	08:30 AM	0	0	0	0	0	23	0	32	87	0	152	0	294
08:30 AM	08:45 AM	0	0	0	0	0	18	0	27	110	0	134	0	289
08:45 AM	09:00 AM	0	0	0	0	0	20	0	20	87	0	138	0	265
HOURLY TOTALS														
07:00 AM	08:00 AM	0	0	0	0	0	84	0	126	375	0	501	0	1,086
07:15 AM	08:15 AM	0	0	0	0	0	91	0	120	364	0	589	0	1,164
07:30 AM	08:30 AM	0	0	0	0	0	88	0	123	385	0	592	0	1,186
07:45 AM	08:45 AM	0	0	0	0	0	84	0	112	407	0	583	0	1,187
08:00 AM	09:00 AM	0	0	0	0	0	87	0	105	383	0	588	0	1,161

Tel : (510) 232-1271 *Fax: (510) 232-1272*

2

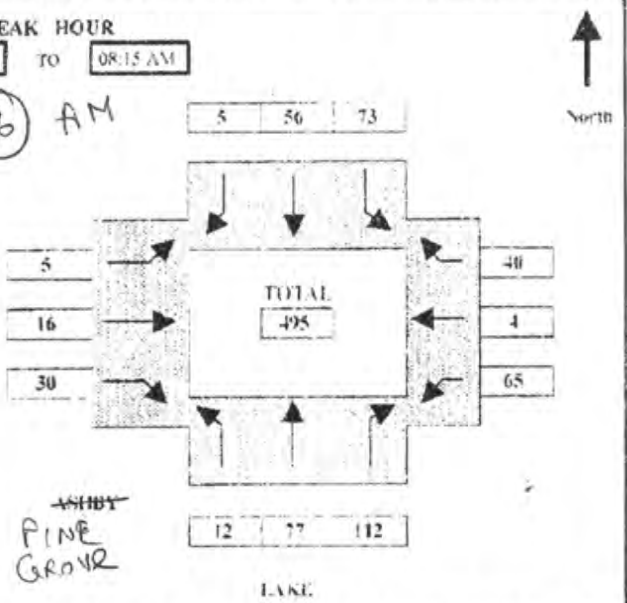
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

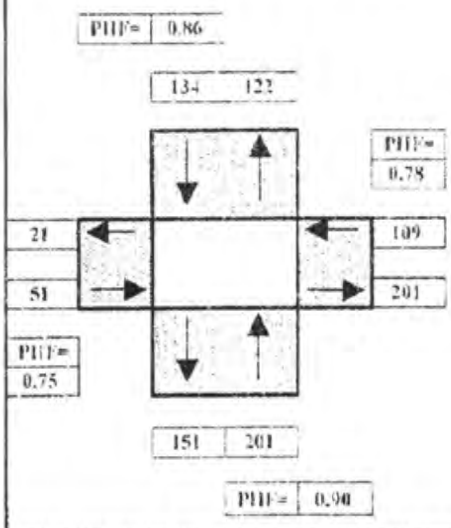
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	LAKE	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	~~ASHBY~~ PINE GROVE	CITY: SHASTA LAKE	FILE: ABLASLAM

PEAK HOUR
07:15 AM TO 08:15 AM

(16) AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	0	10	26	26	5	2	2	2	6	8	2	18	*107*
07:15 AM	07:30 AM	1	24	55	50	13	3	3	5	16	27	3	33	*231*
07:30 AM	07:45 AM	3	42	84	69	26	3	3	8	28	39	3	45	*353*
07:45 AM	08:00 AM	5	68	112	84	40	4	4	12	33	53	4	52	*471*
08:00 AM	08:15 AM	12	87	138	99	61	7	7	18	36	73	6	58	*602*
08:15 AM	08:30 AM	16	112	159	113	76	10	10	22	40	89	8	66	*721*
08:30 AM	08:45 AM	19	134	178	127	94	12	10	25	45	104	10	70	*828*
08:45 AM	09:00 AM	21	160	196	138	116	13	11	29	52	116	10	75	*940*
TOTAL BY PERIOD														
07:00 AM	07:15 AM	0	10	26	26	5	2	2	2	6	8	2	18	*107*
07:15 AM	07:30 AM	1	14	29	24	8	1	1	3	10	19	1	15	*124*
07:30 AM	07:45 AM	2	18	29	19	13	0	0	3	12	12	0	12	*122*
07:45 AM	08:00 AM	2	26	28	15	14	1	1	4	5	14	1	7	*118*
08:00 AM	08:15 AM	7	19	26	15	21	3	3	6	3	20	2	6	*131*
08:15 AM	08:30 AM	4	25	21	14	15	3	3	4	4	16	2	8	*119*
08:30 AM	08:45 AM	3	22	19	14	18	2	0	3	5	15	2	4	*107*
08:45 AM	09:00 AM	2	26	21	11	22	1	1	4	7	12	0	5	*112*
HOURLY TOTALS														
07:00 AM	08:00 AM	5	68	112	84	40	4	4	12	33	53	4	52	*471*
07:15 AM	08:15 AM	12	77	112	77	56	5	5	16	36	65	1	40	*495*
07:30 AM	08:30 AM	15	88	103	63	63	7	7	19	24	62	5	33	*490*
07:45 AM	08:45 AM	16	92	94	58	68	9	7	17	17	63	7	25	*475*
08:00 AM	09:00 AM	16	93	87	54	76	9	7	17	19	63	6	22	*469*

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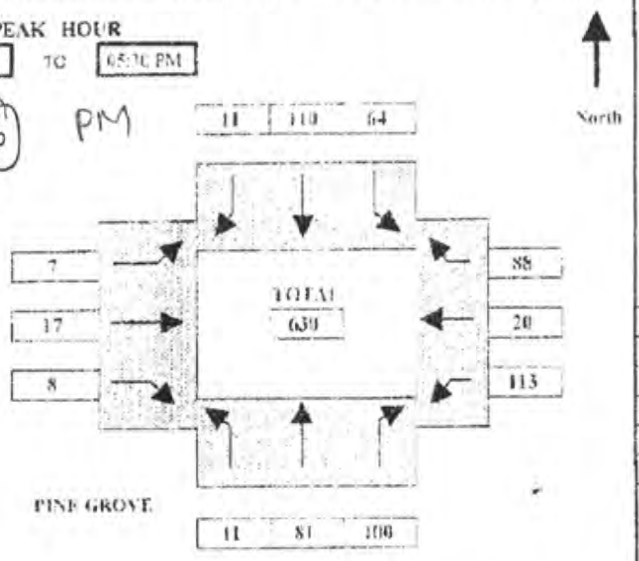
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

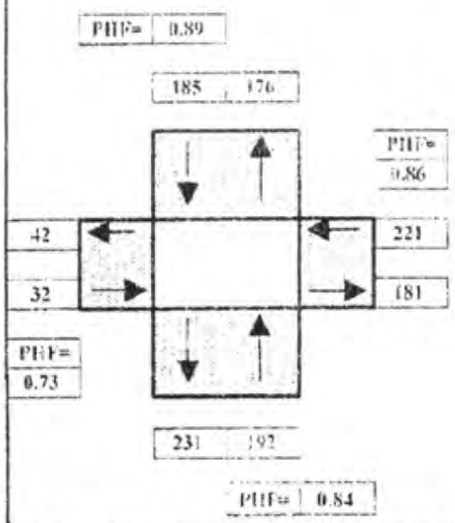
PROJECT: SHASTA LAKE TS
SURVEY DATE: 9/19/2006 DAY: TUESDAY
N-S Approach: LAKE
SURVEY TIME: 4:00 PM TO 6:00 PM
E-W Approach: PINE GROVE
CITY: SHASTA LAKE FILE: LAPGSLPM

PEAK HOUR
04:30 PM TO 05:30 PM

16 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	0	28	21	13	19	4	0	2	1	15	0	12	*116*
04:15 PM	—	04:30 PM	1	34	51	31	45	6	1	3	1	35	2	27	*258*
04:30 PM	—	04:45 PM	4	50	77	51	76	7	3	10	3	62	4	49	*424*
04:45 PM	—	05:00 PM	5	99	99	65	104	12	3	15	4	94	11	64	*576*
05:00 PM	—	05:15 PM	11	115	127	81	126	15	6	16	6	120	10	80	*723*
05:15 PM	—	05:30 PM	12	135	151	95	155	17	8	20	9	149	22	115	*886*
05:30 PM	—	05:45 PM	14	153	183	107	180	24	10	22	9	175	25	136	*1,038*
05:45 PM	—	06:00 PM	16	172	208	120	202	25	10	24	13	193	32	161	*1,175*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	0	28	21	13	19	4	0	2	1	16	0	12	*116*
04:15 PM	—	04:30 PM	1	36	30	18	26	2	1	1	0	20	2	15	*142*
04:30 PM	—	04:45 PM	3	36	26	20	31	1	2	7	2	27	2	22	*166*
04:45 PM	—	05:00 PM	2	49	22	14	28	5	0	5	1	32	7	15	*152*
05:00 PM	—	05:15 PM	5	14	28	16	22	3	3	1	2	26	5	22	*147*
05:15 PM	—	05:30 PM	1	32	24	13	29	2	2	4	3	29	6	29	*165*
05:30 PM	—	05:45 PM	2	18	32	12	25	7	2	2	0	26	3	21	*150*
05:45 PM	—	06:00 PM	2	19	25	13	22	1	0	2	2	18	8	25	*137*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	6	99	99	65	104	12	3	15	4	94	11	64	*576*
04:15 PM	—	05:15 PM	11	85	106	68	107	11	6	14	5	109	16	74	*607*
04:30 PM	—	05:30 PM	13	81	103	64	110	11	7	12	8	115	20	88	*630*
04:45 PM	—	05:45 PM	10	73	106	56	104	17	7	12	6	115	21	87	*614*
05:00 PM	—	06:00 PM	10	73	109	55	98	13	7	9	7	99	22	97	*599*

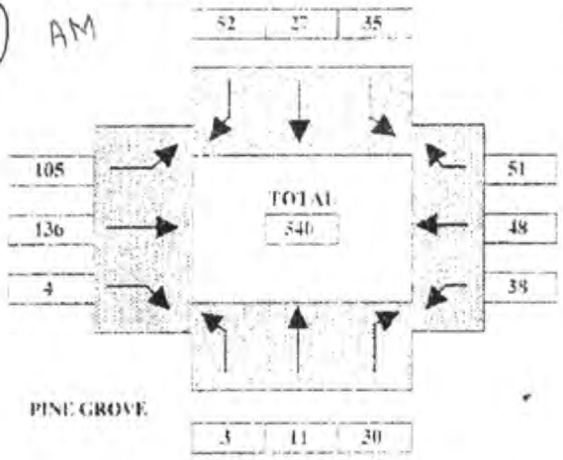
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

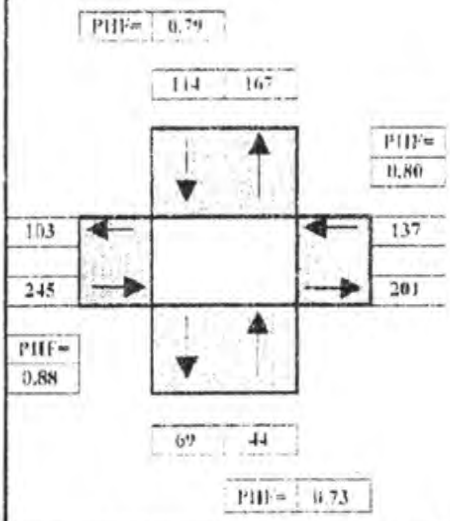
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	ASHBY	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PGABSLAM

PEAK HOUR
07:15 AM TO 08:15 AM

17 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	0	5	3	11	2	7	18	23	0	7	9	8	*93*
07:15 AM	07:30 AM	0	13	10	26	4	18	46	52	1	18	23	25	*236*
07:30 AM	07:45 AM	1	15	20	35	10	36	81	87	1	32	35	42	*395*
07:45 AM	08:00 AM	1	15	25	42	24	51	106	126	3	37	49	52	*531*
08:00 AM	08:15 AM	3	16	33	46	29	59	123	159	4	45	57	59	*633*
08:15 AM	08:30 AM	3	18	37	51	32	69	134	189	7	54	63	67	*724*
08:30 AM	08:45 AM	4	18	40	54	34	76	142	213	10	59	71	75	*796*
08:45 AM	09:00 AM	4	19	45	62	40	88	154	239	12	65	78	79	*884*
TOTAL BY PERIOD														
07:00 AM	07:15 AM	0	5	3	11	2	7	18	23	0	7	9	8	*93*
07:15 AM	07:30 AM	0	8	7	15	2	11	28	29	1	11	14	17	*143*
07:30 AM	07:45 AM	1	2	10	9	6	18	35	35	0	14	12	17	*159*
07:45 AM	08:00 AM	0	0	5	7	14	15	25	39	2	5	14	10	*136*
08:00 AM	08:15 AM	2	1	8	4	5	8	17	33	1	8	8	7	*102*
08:15 AM	08:30 AM	0	2	4	5	3	10	11	30	3	9	6	8	*91*
08:30 AM	08:45 AM	1	0	3	3	2	7	8	24	3	5	8	8	*72*
08:45 AM	09:00 AM	0	1	5	8	6	12	12	26	2	6	7	4	*88*
HOURLY TOTALS														
07:00 AM	08:00 AM	1	15	25	42	24	51	106	126	3	37	49	52	*531*
07:15 AM	08:15 AM	3	11	30	35	27	52	105	136	4	38	48	51	*540*
07:30 AM	08:30 AM	3	5	27	25	28	51	88	137	6	36	40	42	*488*
07:45 AM	08:45 AM	3	3	20	19	24	40	61	126	9	27	36	33	*401*
08:00 AM	09:00 AM	3	4	20	20	16	37	48	113	9	27	29	27	*353*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

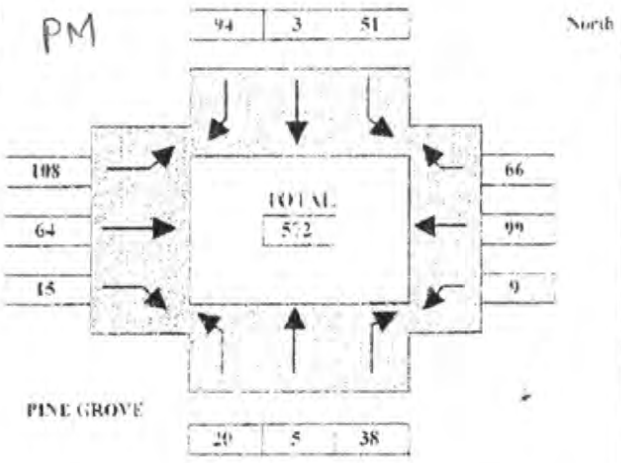
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

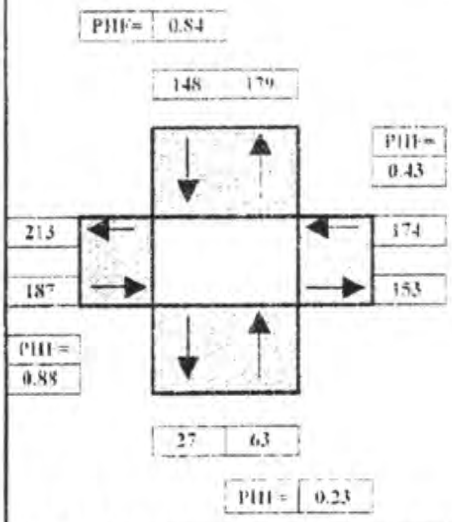
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	ASHBY	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PGABSLPM

PEAK HOUR
04:15 PM TO 05:15 PM

(17) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	--	04:15 PM	6	3	8	15	1	16	18	15	3	1	15	14	*115*
04:15 PM	--	04:30 PM	17	4	15	27	1	42	29	31	10	1	35	35	*255*
04:30 PM	--	04:45 PM	20	4	27	47	3	64	64	50	15	3	57	50	*404*
04:45 PM	--	05:00 PM	23	6	35	58	3	89	98	67	12	7	87	67	*556*
05:00 PM	--	05:15 PM	26	8	46	66	4	110	126	79	18	10	114	80	*687*
05:15 PM	--	05:30 PM	27	10	55	78	7	127	148	90	18	14	115	96	*815*
05:30 PM	--	05:45 PM	28	11	62	88	10	151	173	100	19	15	173	115	*945*
05:45 PM	--	06:00 PM	30	12	66	91	10	167	195	115	21	16	204	129	*1,057*
TOTAL BY PERIOD															
04:00 PM	--	04:15 PM	6	2	8	15	1	16	18	15	3	1	15	14	*115*
04:15 PM	--	04:30 PM	9	1	7	12	0	26	21	16	7	0	20	21	*140*
04:30 PM	--	04:45 PM	5	0	12	20	2	22	25	19	5	2	22	15	*149*
04:45 PM	--	05:00 PM	2	2	8	11	0	25	34	17	2	4	30	17	*152*
05:00 PM	--	05:15 PM	3	2	11	8	1	21	28	12	1	3	27	13	*131*
05:15 PM	--	05:30 PM	1	2	9	12	3	17	22	11	0	4	31	16	*128*
05:30 PM	--	05:45 PM	1	1	7	10	3	24	25	10	1	1	28	19	*130*
05:45 PM	--	06:00 PM	2	1	4	6	0	16	20	15	2	1	31	14	*112*
HOURLY TOTALS															
04:00 PM	--	05:00 PM	22	6	35	58	3	89	98	67	12	7	87	67	*556*
04:15 PM	--	05:15 PM	20	5	38	51	3	94	108	64	15	9	99	66	*572*
04:30 PM	--	05:30 PM	12	6	40	51	6	85	109	59	8	13	113	61	*569*
04:45 PM	--	05:45 PM	8	7	35	40	7	87	109	50	4	12	116	65	*541*
05:00 PM	--	06:00 PM	8	6	31	36	7	78	95	48	4	9	117	62	*501*

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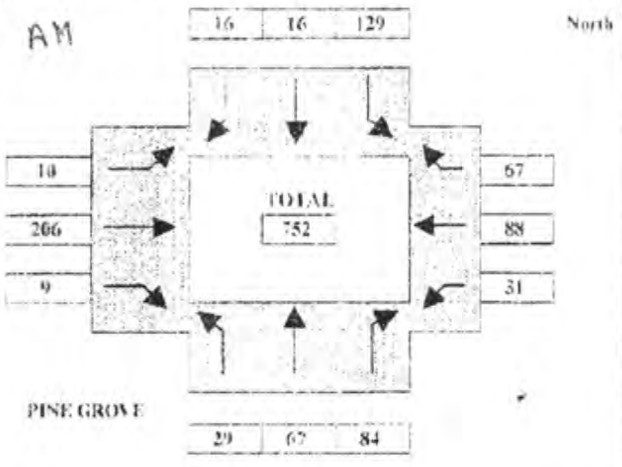
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

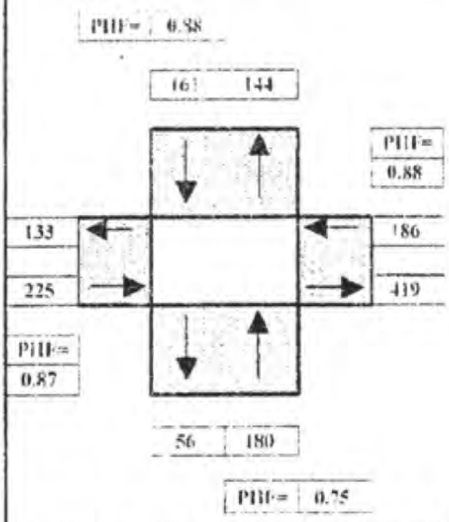
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	CASCADE	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PGCCSLAM

PEAK HOUR
07:15 AM TO 08:15 AM

(18) AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	3	3	15	17	2	1	0	54	0	4	12	5	*120*
07:15 AM	---	07:30 AM	12	20	34	41	5	8	1	117	1	6	34	13	*292*
07:30 AM	---	07:45 AM	22	44	60	71	9	13	3	176	3	13	59	34	*507*
07:45 AM	---	08:00 AM	26	61	82	113	12	14	7	227	5	25	81	50	*703*
08:00 AM	---	08:15 AM	32	74	99	146	18	17	10	260	9	35	100	72	*872*
08:15 AM	---	08:30 AM	35	92	113	168	28	20	13	287	13	44	120	86	*1,019*
08:30 AM	---	08:45 AM	37	112	125	185	35	27	13	313	19	58	137	95	*1,152*
08:45 AM	---	09:00 AM	40	129	136	197	46	27	16	340	27	68	152	103	*1,281*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	3	3	15	17	2	1	0	54	0	4	12	5	*120*
07:15 AM	---	07:30 AM	9	13	19	24	3	7	1	63	1	2	22	8	*172*
07:30 AM	---	07:45 AM	10	24	26	30	4	5	2	59	2	7	25	21	*215*
07:45 AM	---	08:00 AM	4	17	22	42	3	1	4	51	2	12	22	16	*196*
08:00 AM	---	08:15 AM	6	13	17	33	6	3	3	33	4	10	19	22	*169*
08:15 AM	---	08:30 AM	3	18	14	22	10	3	3	27	4	9	20	14	*147*
08:30 AM	---	08:45 AM	2	20	12	17	7	7	0	26	6	14	17	9	*133*
08:45 AM	---	09:00 AM	3	17	11	12	11	4	3	27	8	10	15	8	*129*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	26	61	82	113	12	14	7	227	5	25	81	50	*703*
07:15 AM	---	08:15 AM	29	67	84	129	16	16	10	296	9	31	88	67	*752*
07:30 AM	---	08:30 AM	23	72	79	127	23	12	12	270	12	38	86	73	*727*
07:45 AM	---	08:45 AM	15	68	65	114	26	10	10	257	16	45	78	61	*645*
08:00 AM	---	09:00 AM	14	68	54	84	34	13	9	213	22	42	74	53	*578*

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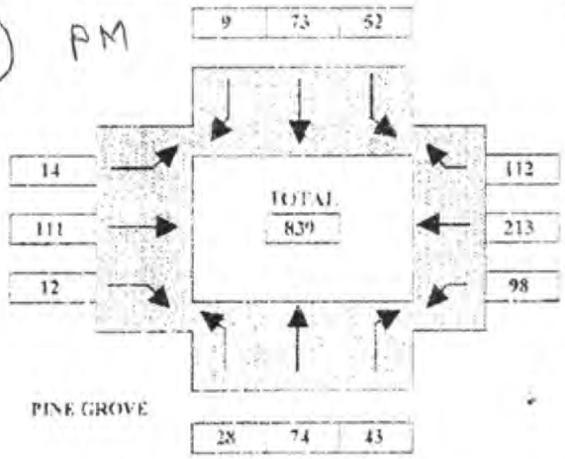
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

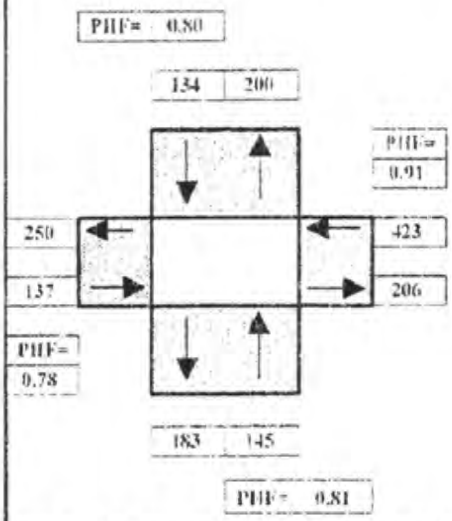
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	CASCADE	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PGCCSLPM

PEAK HOUR 04:45 PM TO 05:45 PM

(18) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	8	16	10	15	12	0	1	34	3	17	45	17	*178*
04:15 PM	—	04:30 PM	15	31	17	27	29	3	3	75	4	38	95	39	*376*
04:30 PM	—	04:45 PM	26	53	28	47	51	2	3	107	9	57	131	60	*585*
04:45 PM	—	05:00 PM	32	78	42	61	68	4	10	133	11	81	193	89	*802*
05:00 PM	—	05:15 PM	37	97	51	77	88	7	12	163	15	107	235	122	*1,011*
05:15 PM	—	05:30 PM	47	111	63	86	107	10	16	188	16	125	296	144	*1,209*
05:30 PM	—	05:45 PM	54	127	71	99	124	12	17	218	21	155	354	172	*1,424*
05:45 PM	—	06:00 PM	59	135	76	111	140	14	19	243	25	177	401	188	*1,598*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	8	16	10	15	12	0	1	34	3	17	45	17	*178*
04:15 PM	—	04:30 PM	7	15	7	12	17	3	2	41	1	21	50	22	*198*
04:30 PM	—	04:45 PM	11	22	11	20	22	0	0	32	5	19	36	21	*209*
04:45 PM	—	05:00 PM	6	25	14	14	17	1	7	26	2	24	62	29	*217*
05:00 PM	—	05:15 PM	5	19	9	16	20	3	2	30	4	26	42	33	*209*
05:15 PM	—	05:30 PM	10	14	12	9	19	3	4	25	1	18	61	22	*198*
05:30 PM	—	05:45 PM	7	16	8	13	17	2	1	30	5	30	58	28	*215*
05:45 PM	—	06:00 PM	5	18	5	12	16	2	2	25	4	22	47	16	*174*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	32	78	42	61	68	4	10	133	11	81	193	89	*802*
04:15 PM	—	05:15 PM	29	81	41	62	76	7	11	129	12	90	190	105	*835*
04:30 PM	—	05:30 PM	32	80	46	59	78	7	13	115	12	87	201	105	*833*
04:45 PM	—	05:45 PM	28	74	43	52	73	9	14	111	12	98	213	112	*859*
05:00 PM	—	06:00 PM	27	67	34	50	72	10	9	110	14	96	208	99	*796*

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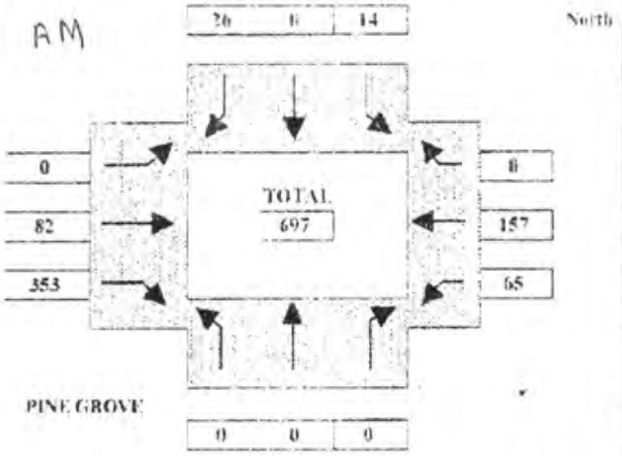
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

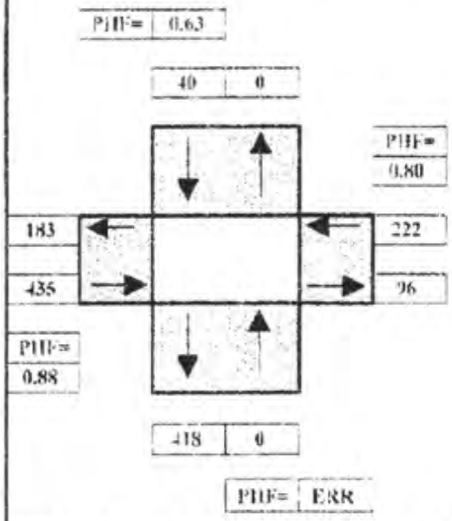
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PG5SSLAM

PEAK HOUR
07:15 AM TO 08:15 AM

19 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	0	0	0	0	0	4	0	13	76	5	22	0	*129*
07:15 AM	—	07:30 AM	0	0	0	1	0	12	0	31	162	14	59	0	*279*
07:30 AM	—	07:45 AM	0	0	0	5	0	18	0	56	260	28	97	0	*464*
07:45 AM	—	08:00 AM	0	0	0	7	0	21	0	78	356	53	141	0	*656*
08:00 AM	—	08:15 AM	0	0	0	14	0	30	0	95	429	70	179	0	*817*
08:15 AM	—	08:30 AM	0	0	0	17	0	37	0	106	493	82	211	0	*946*
08:30 AM	—	08:45 AM	0	0	0	20	0	49	0	114	541	90	245	0	*1,059*
08:45 AM	—	09:00 AM	0	0	0	25	0	57	0	121	590	97	272	0	*1,162*
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	0	0	0	0	0	4	0	13	76	5	22	0	*120*
07:15 AM	—	07:30 AM	0	0	0	1	0	8	0	18	86	9	37	0	*159*
07:30 AM	—	07:45 AM	0	0	0	4	0	6	0	25	98	14	38	0	*185*
07:45 AM	—	08:00 AM	0	0	0	2	0	3	0	22	96	25	44	0	*192*
08:00 AM	—	08:15 AM	0	0	0	7	0	9	0	17	73	17	38	0	*161*
08:15 AM	—	08:30 AM	0	0	0	3	0	7	0	11	64	12	32	0	*129*
08:30 AM	—	08:45 AM	0	0	0	3	0	12	0	8	48	8	34	0	*113*
08:45 AM	—	09:00 AM	0	0	0	5	0	8	0	7	49	7	27	0	*103*
HOURLY TOTALS															
07:00 AM	—	08:00 AM	0	0	0	7	0	21	0	78	356	53	141	0	*656*
07:15 AM	—	08:15 AM	0	0	0	14	0	26	0	82	353	65	157	0	*697*
07:30 AM	—	08:30 AM	0	0	0	16	0	25	0	75	331	68	152	0	*667*
07:45 AM	—	08:45 AM	0	0	0	15	0	31	0	58	281	62	148	0	*595*
08:00 AM	—	09:00 AM	0	0	0	18	0	36	0	43	224	44	131	0	*506*

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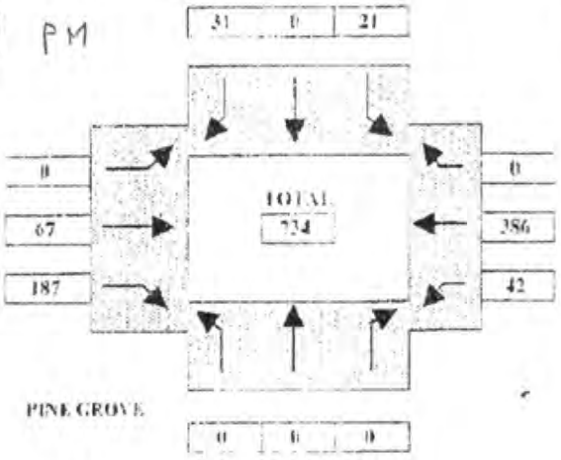
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

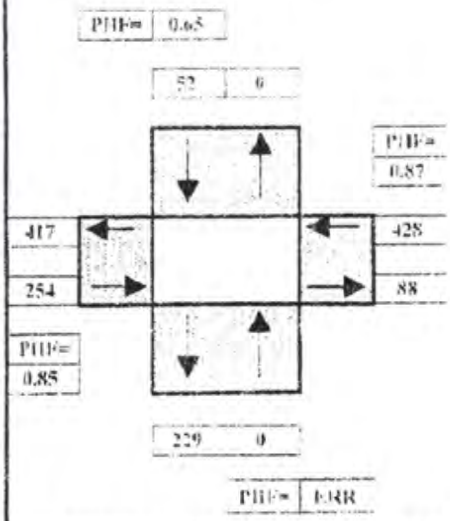
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PG5SSLPM

PEAK HOUR
05:00 PM TO 06:00 PM

(19) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
04:00 PM	04:15 PM	0	0	0	4	0	7	0	11	46	7	78	0	153
04:15 PM	04:30 PM	0	0	0	6	0	17	0	26	100	11	160	0	320
04:30 PM	04:45 PM	0	0	0	12	0	31	0	35	138	18	240	0	474
04:45 PM	05:00 PM	0	0	0	17	0	40	0	54	167	30	333	0	641
05:00 PM	05:15 PM	0	0	0	20	0	46	0	67	208	42	430	0	813
05:15 PM	05:30 PM	0	0	0	28	0	53	0	79	254	50	521	0	986
05:30 PM	05:45 PM	0	0	0	35	0	64	0	99	301	62	632	0	1,193
05:45 PM	06:00 PM	0	0	0	38	0	71	0	121	364	72	719	0	1,375
TOTAL BY PERIOD														
04:00 PM	04:15 PM	0	0	0	4	0	7	0	11	46	7	78	0	153
04:15 PM	04:30 PM	0	0	0	2	0	10	0	15	54	4	82	0	167
04:30 PM	04:45 PM	0	0	0	6	0	14	0	9	38	7	80	0	154
04:45 PM	05:00 PM	0	0	0	5	0	9	0	19	29	12	93	0	167
05:00 PM	05:15 PM	0	0	0	3	0	6	0	13	41	12	97	0	172
05:15 PM	05:30 PM	0	0	0	8	0	8	0	12	46	8	91	0	173
05:30 PM	05:45 PM	0	0	0	7	0	10	0	20	47	12	111	0	207
05:45 PM	06:00 PM	0	0	0	3	0	7	0	22	53	10	87	0	182
HOURLY TOTALS														
04:00 PM	05:00 PM	0	0	0	17	0	40	0	54	167	30	333	0	641
04:15 PM	05:15 PM	0	0	0	16	0	39	0	56	162	35	352	0	660
04:30 PM	05:30 PM	0	0	0	22	0	37	0	53	154	39	361	0	666
04:45 PM	05:45 PM	0	0	0	23	0	38	0	64	163	44	392	0	719
05:00 PM	06:00 PM	0	0	0	21	0	31	0	67	187	42	386	0	734

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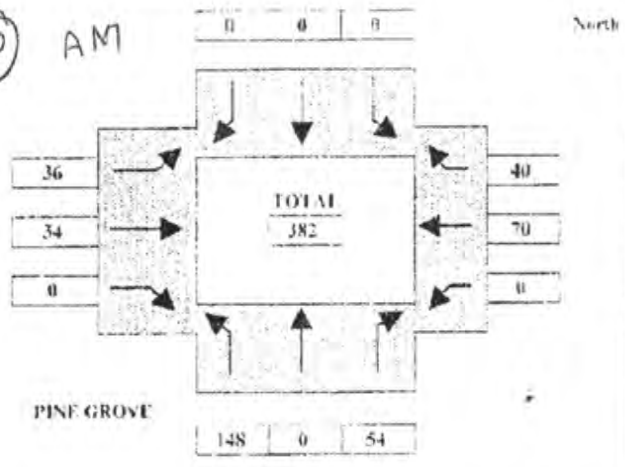
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

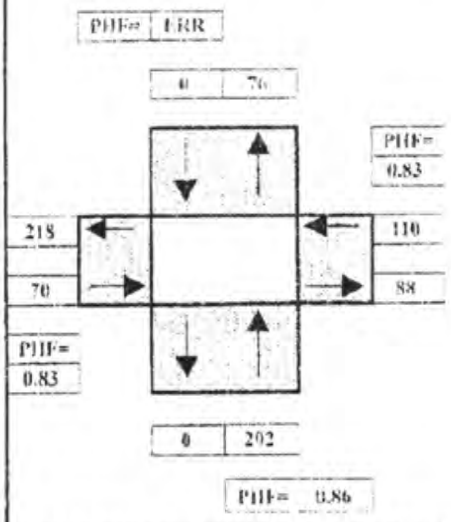
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 NB RAMPS	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PG5NSLAM

PEAK HOUR
07:30 AM TO 08:30 AM

20 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	22	0	7	0	0	0	5	14	0	0	9	5	62
07:15 AM	—	07:30 AM	53	0	18	0	0	0	12	17	6	0	22	10	132
07:30 AM	—	07:45 AM	92	0	36	0	0	0	22	26	0	0	41	17	234
07:45 AM	—	08:00 AM	139	0	48	0	0	0	3	34	0	0	62	29	347
08:00 AM	—	08:15 AM	176	0	63	0	0	0	38	45	0	0	76	42	442
08:15 AM	—	08:30 AM	201	0	72	0	0	0	48	51	0	0	92	50	514
08:30 AM	—	08:45 AM	229	0	89	0	0	0	54	55	0	0	102	61	590
08:45 AM	—	09:00 AM	261	0	103	0	0	0	61	58	0	0	110	75	668
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	22	0	7	0	0	0	5	14	0	0	9	5	62
07:15 AM	—	07:30 AM	31	0	11	0	0	0	7	3	6	0	13	5	70
07:30 AM	—	07:45 AM	39	0	18	0	0	0	10	9	0	0	19	7	102
07:45 AM	—	08:00 AM	47	0	12	0	0	0	9	12	0	0	21	12	113
08:00 AM	—	08:15 AM	37	0	15	0	0	0	7	7	0	0	16	13	95
08:15 AM	—	08:30 AM	25	0	9	0	0	0	10	6	0	0	14	8	72
08:30 AM	—	08:45 AM	28	0	17	0	0	0	6	4	0	0	10	11	76
08:45 AM	—	09:00 AM	32	0	14	0	0	0	7	3	0	0	8	14	78
HOURLY TOTALS															
07:00 AM	—	08:00 AM	139	0	48	0	0	0	31	38	3	0	62	29	347
07:15 AM	—	08:15 AM	154	0	56	0	0	0	33	31	0	0	69	37	380
07:30 AM	—	08:30 AM	148	0	54	0	0	0	36	34	3	0	76	40	382
07:45 AM	—	08:45 AM	137	0	53	0	0	0	32	29	0	0	61	44	356
08:00 AM	—	09:00 AM	122	0	55	0	0	0	30	20	0	0	46	40	321

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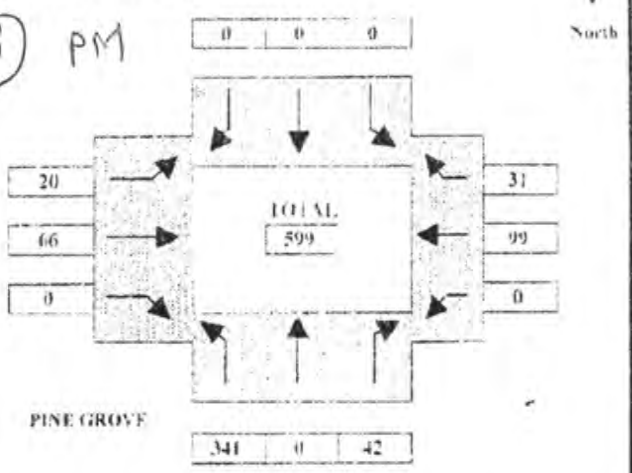
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

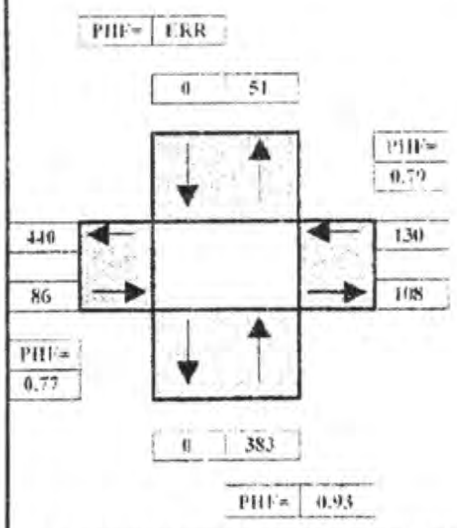
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	I-5 NB RAMPS	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PG5NSLPM

PEAK HOUR
05:00 PM TO 06:00 PM

(20) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	57	0	15	0	0	0	3	14	0	0	25	14	*128*
04:15 PM	—	04:30 PM	129	0	22	0	0	0	10	26	0	0	47	26	*260*
04:30 PM	—	04:45 PM	196	0	33	0	0	0	14	39	0	0	66	35	*383*
04:45 PM	—	05:00 PM	274	0	48	0	0	0	18	58	0	0	82	48	*529*
05:00 PM	—	05:15 PM	369	0	57	0	0	0	22	68	0	0	108	55	*679*
05:15 PM	—	05:30 PM	459	0	64	0	0	0	29	81	0	0	134	68	*828*
05:30 PM	—	05:45 PM	534	0	82	0	0	0	34	100	0	0	157	71	*978*
05:45 PM	—	06:00 PM	615	0	91	0	0	0	38	124	0	0	181	79	*1128*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	57	0	15	0	0	0	3	14	0	0	25	14	*128*
04:15 PM	—	04:30 PM	72	0	7	0	0	0	7	12	0	0	22	12	*132*
04:30 PM	—	04:45 PM	67	0	11	0	0	0	4	13	0	0	19	9	*123*
04:45 PM	—	05:00 PM	78	0	16	0	0	0	4	19	0	0	16	13	*146*
05:00 PM	—	05:15 PM	95	0	8	0	0	0	4	10	0	0	26	7	*150*
05:15 PM	—	05:30 PM	81	0	7	0	0	0	7	13	0	0	31	10	*149*
05:30 PM	—	05:45 PM	84	0	18	0	0	0	5	19	0	0	18	6	*150*
05:45 PM	—	06:00 PM	81	0	9	0	0	0	4	24	0	0	23	8	*150*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	274	0	48	0	0	0	18	58	0	0	82	48	*529*
04:15 PM	—	05:15 PM	312	0	42	0	0	0	18	54	0	0	83	41	*551*
04:30 PM	—	05:30 PM	321	0	42	0	0	0	19	55	0	0	92	39	*568*
04:45 PM	—	05:45 PM	378	0	49	0	0	0	20	61	0	0	91	36	*595*
05:00 PM	—	06:00 PM	341	0	42	0	0	0	20	66	0	0	98	31	*599*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

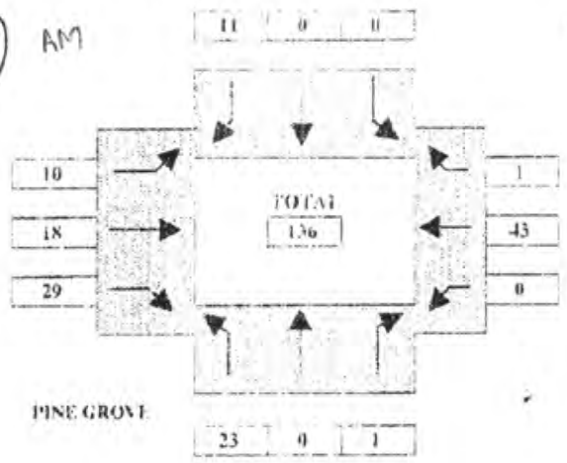
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

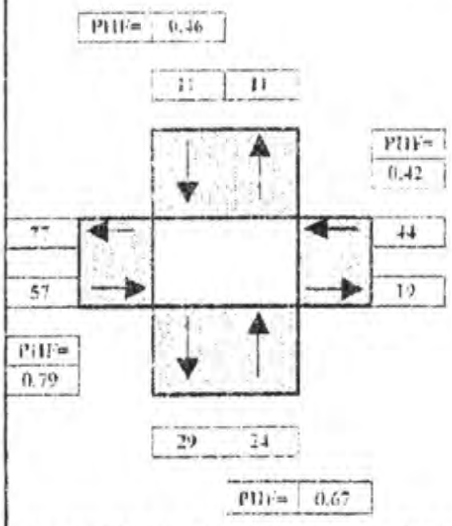
PROJECT: SHASTA LAKE TS
SURVEY DATE: 9/14/2006 DAY: THURSADY
N-S Approach: TWIN VIEW
SURVEY TIME: 7:00 AM TO 9:00 AM
E-W Approach: PINE GROVE
CITY: SHASTA LAKE FILE: PGTVSLAM

PEAK HOUR
07:15 AM TO 08:15 AM

21 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	5	0	0	0	0	0	0	2	11	0	8	0	26
07:15 AM	07:30 AM	11	0	0	0	0	2	1	5	22	0	15	0	59
07:30 AM	07:45 AM	20	0	0	0	0	4	3	11	23	0	27	1	89
07:45 AM	08:00 AM	23	0	1	0	0	10	7	17	31	0	38	1	128
08:00 AM	08:15 AM	28	0	1	0	0	11	10	20	40	0	51	1	162
08:15 AM	08:30 AM	30	0	1	0	0	15	14	24	45	2	60	1	190
08:30 AM	08:45 AM	34	0	1	0	0	16	15	28	47	2	64	1	208
08:45 AM	09:00 AM	35	0	1	0	0	18	16	30	49	2	67	1	219
TOTAL BY PERIOD														
07:00 AM	07:15 AM	5	0	0	0	0	0	0	2	11	0	8	0	26
07:15 AM	07:30 AM	9	0	0	0	0	2	1	3	11	0	7	0	33
07:30 AM	07:45 AM	6	0	0	0	0	2	2	6	1	0	12	1	30
07:45 AM	08:00 AM	3	0	1	0	0	6	4	6	8	0	11	0	39
08:00 AM	08:15 AM	5	0	0	0	0	1	3	3	9	0	13	0	34
08:15 AM	08:30 AM	2	0	0	0	0	4	4	4	5	2	9	0	28
08:30 AM	08:45 AM	4	0	0	0	0	1	1	4	4	0	4	0	18
08:45 AM	09:00 AM	1	0	0	0	0	2	1	2	2	0	3	0	11
HOURLY TOTALS														
07:00 AM	08:00 AM	23	0	1	0	0	10	7	17	31	0	38	1	128
07:15 AM	08:15 AM	23	0	1	0	0	11	10	18	29	0	43	1	136
07:30 AM	08:30 AM	16	0	1	0	0	13	13	19	21	2	45	1	131
07:45 AM	08:45 AM	11	0	1	0	0	12	12	17	21	2	37	0	119
08:00 AM	09:00 AM	12	0	0	0	0	8	9	15	18	2	29	0	91

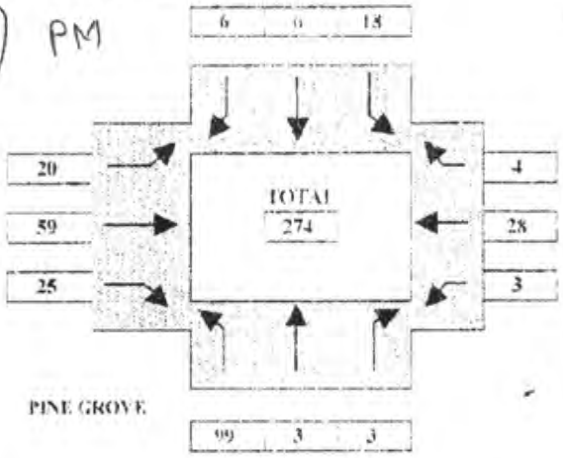
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

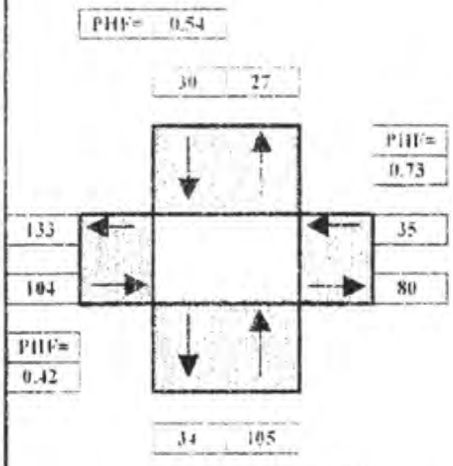
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/14/2006	DAY: THURSADY
N-S Approach:	TWIN VIEW	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	PINE GROVE	CITY: SHASTA LAKE	FILE: PGTVSLPM

PEAK HOUR
04:30 PM TO 05:30 PM

21 PM



ARRIVAL / DEPARTURE VOLUMES

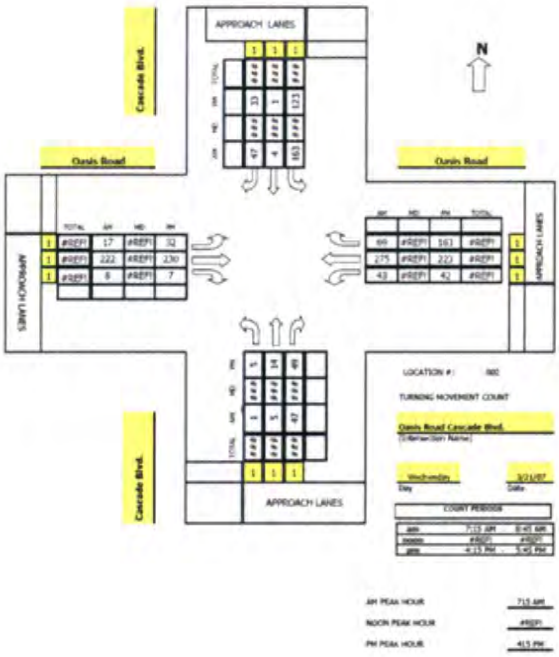


TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	27	0	1	2	0	6	1	7	12	0	6	1	63
04:15 PM	—	04:30 PM	41	2	1	4	2	10	3	17	30	2	10	1	132
04:30 PM	—	04:45 PM	68	2	1	7	3	17	10	32	39	2	20	3	204
04:45 PM	—	05:00 PM	93	2	3	10	3	18	12	46	42	4	27	3	264
05:00 PM	—	05:15 PM	121	3	3	15	7	19	18	57	56	5	33	4	336
05:15 PM	—	05:30 PM	143	3	4	22	8	22	23	76	65	5	38	5	406
05:30 PM	—	05:45 PM	163	5	5	26	8	25	26	97	61	5	46	5	472
05:45 PM	—	06:00 PM	179	6	5	30	10	29	29	121	65	6	52	5	537
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	27	0	1	2	0	6	1	7	12	0	6	1	63
04:15 PM	—	04:30 PM	14	2	0	2	2	10	2	10	18	2	4	0	69
04:30 PM	—	04:45 PM	27	0	0	3	1	7	7	15	9	0	10	2	72
04:45 PM	—	05:00 PM	25	0	2	3	0	1	2	14	4	2	7	0	60
05:00 PM	—	05:15 PM	28	2	0	5	4	1	6	11	7	1	6	1	72
05:15 PM	—	05:30 PM	22	1	1	7	1	3	5	19	5	0	5	1	70
05:30 PM	—	05:45 PM	20	0	1	4	0	3	3	21	6	0	8	0	66
05:45 PM	—	06:00 PM	16	1	0	4	2	4	3	24	4	1	6	0	65
HOURLY TOTALS															
04:00 PM	—	05:00 PM	93	2	2	10	3	18	12	46	43	4	27	3	264
04:15 PM	—	05:15 PM	94	4	2	13	7	13	17	50	38	1	27	3	273
04:30 PM	—	05:30 PM	96	3	3	18	6	6	20	59	25	3	28	1	274
04:45 PM	—	05:45 PM	94	3	4	19	5	8	16	65	22	1	26	2	268
05:00 PM	—	06:00 PM	86	3	2	20	7	11	17	75	22	2	25	2	275

Tel : (510) 232-1271 Fax: (510) 232-1272

TMC SUMMARY OF Oasis Road Cascade Blvd.

Project #: 45-2170-01



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Cascade Blvd. DATE: 3/21/07 LOCATION: City of Redding

E-W STREET: Oasis Road DAY: Wednesday PROJECT# 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM	0	0	11	30	1	13	3	43	1	10	48	13	173
7:30 AM	0	1	14	46	0	10	3	57	3	5	74	16	229
7:45 AM	0	1	11	44	3	15	3	61	0	15	85	17	255
8:00 AM	1	3	11	43	0	9	8	61	4	13	68	23	244
8:15 AM	0	3	3	20	0	5	5	49	1	6	35	15	142
8:30 AM	2	1	4	27	1	7	4	46	1	13	27	17	150
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 3	NT 9	NR 54	SL 210	ST 5	SR 59	EL 26	ET 317	ER 10	WL 62	WT 337	WR 101	TOTAL 1193
AM Peak Hr Begins at: 715 AM													
PEAK VOLUMES =	1	5	47	163	4	47	17	222	8	43	275	69	901
PEAK HR. FACTOR:		0.883			0.863			0.846			0.827		0.883

CONTROL: Stop Sign

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Cascade Blvd. DATE: 3/21/07 LOCATION: City of Redding

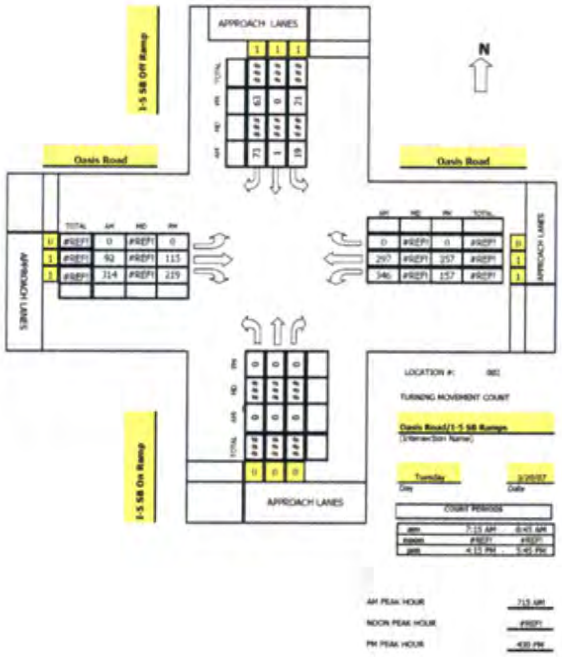
E-W STREET: Oasis Road DAY: Wednesday PROJECT# 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM	1	1	13	28	0	9	13	45	1	17	60	44	232
4:30 PM	2	2	16	37	0	7	4	67	0	7	57	39	238
4:45 PM	0	8	11	29	0	6	8	54	1	9	56	45	227
5:00 PM	2	3	9	29	1	11	7	64	5	9	50	35	225
5:15 PM	0	1	6	28	2	9	4	58	0	6	63	54	231
5:30 PM	0	1	7	29	2	7	7	43	1	4	60	43	204
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 5	NT 16	NR 62	SL 180	ST 5	SR 49	EL 43	ET 331	ER 0	WL 52	WT 346	WR 260	TOTAL 1357
PM Peak Hr Begins at: 415 PM													
PEAK VOLUMES =	5	14	49	123	1	33	32	230	7	42	223	163	922
PEAK HR. FACTOR:		0.850			0.892			0.885			0.884		0.968

CONTROL: Stop Sign

TMC SUMMARY OF Oasis Road/I-5 SB Ramps

Project #: 45-2170-01



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-5 SB Off Ramp / I-5 SB On Ramp
E-W STREET: Oasis Road
DATE: 3/20/07
DAY: Tuesday
LOCATION: City of Redding
PROJECT#: 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	1	1	0	1	1	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM	0	0	0	3	1	22	0	15	73	86	68	0	268
7:30 AM	0	0	0	1	0	12	0	19	92	98	76	0	298
7:45 AM	0	0	0	8	0	28	0	38	91	92	72	0	329
8:00 AM	0	0	0	7	0	11	0	20	58	70	61	0	247
8:15 AM	0	0	0	1	0	9	0	15	62	55	70	0	212
8:30 AM	0	0	0	2	0	13	0	17	60	43	45	0	180
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	0	0	0	22	1	95	0	124	436	444	412	0	1534

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	0	0	0	19	1	73	0	92	314	346	297	0	1142
PEAK HR. FACTOR:		0.000			0.646			0.797			0.924		0.868

CONTROL: Stop Sign

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-5 SB Off Ramp / I-5 SB On Ramp
E-W STREET: Oasis Road
DATE: 3/20/07
DAY: Tuesday
LOCATION: City of Redding
PROJECT#: 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1	1	1	0	1	1	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM	0	0	0	2	0	7	0	26	54	31	66	0	186
4:30 PM	0	0	0	6	0	17	0	34	51	39	77	0	224
4:45 PM	0	0	0	6	0	14	0	22	63	38	84	0	227
5:00 PM	0	0	0	6	0	23	0	40	63	40	109	0	281
5:15 PM	0	0	0	3	0	9	0	19	42	40	87	0	200
5:30 PM	0	0	0	7	0	8	0	24	54	28	81	0	202
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	0	0	0	30	0	78	0	165	327	216	504	0	1320

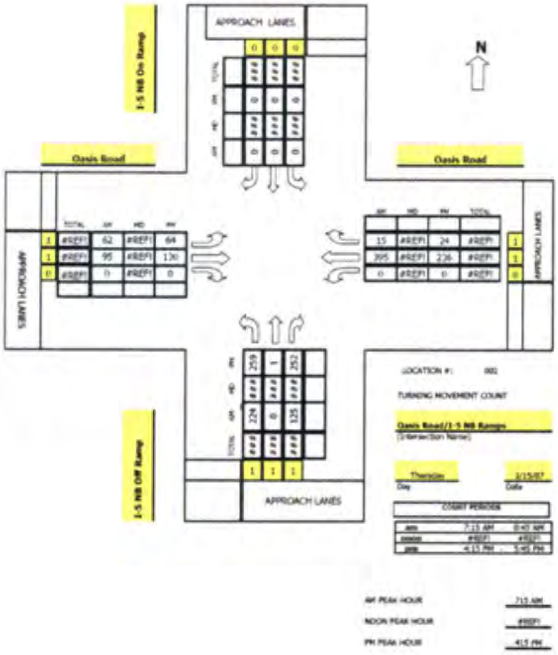
PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	0	0	0	21	0	63	0	115	219	157	357	0	932
PEAK HR. FACTOR:		0.000			0.724			0.811			0.862		0.829

CONTROL: Stop Sign

TMC SUMMARY OF Oasis Road/I-5 NB Ramps

Project #: 45-2170-01



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-5 NB On Ramp / I-5 NB Off Ramp
E-W STREET: Oasis Road
DATE: 3/15/07
DAY: Thursday
LOCATION: City of Redding
PROJECT#: 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	0	0	0	1	1	0	0	1	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM	53	0	23	0	0	0	11	17	0	0	69	4	177
7:30 AM	47	0	19	0	0	0	18	28	0	0	123	3	238
7:45 AM	68	0	37	0	0	0	20	28	0	0	97	3	253
8:00 AM	56	0	46	0	0	0	13	22	0	0	106	5	248
8:15 AM	41	0	33	0	0	0	9	9	0	0	50	1	143
8:30 AM	35	0	29	0	0	0	10	12	0	0	67	3	156
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	300	0	187	0	0	0	81	116	0	0	512	19	1215

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	224	0	125	0	0	0	62	95	0	0	395	15	916
PEAK HR. FACTOR:	0.831			0.000			0.810			0.813			0.905

CONTROL: Stop Sign

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: I-5 NB On Ramp / I-5 NB Off Ramp
E-W STREET: Oasis Road
DATE: 3/15/07
DAY: Thursday
LOCATION: City of Redding
PROJECT#: 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	1	1	0	0	0	1	1	0	0	1	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM	66	1	49	0	0	0	15	31	0	0	60	1	223
4:30 PM	59	0	58	0	0	0	23	28	0	0	65	8	241
4:45 PM	63	0	68	0	0	0	12	34	0	0	60	3	240
5:00 PM	71	0	77	0	0	0	14	37	0	0	51	12	262
5:15 PM	69	0	61	0	0	0	11	21	0	0	53	4	219
5:30 PM	73	0	59	0	0	0	11	27	0	0	59	13	242
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	401	1	372	0	0	0	86	178	0	0	348	41	1427

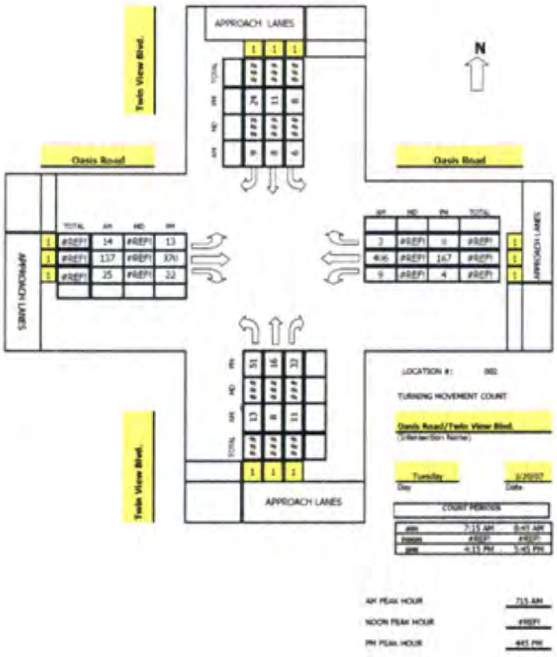
PM Peak Hr Begins at: 415 PM

PEAK VOLUMES =	259	1	252	0	0	0	64	130	0	0	236	24	966
PEAK HR. FACTOR:	0.865			0.000			0.951			0.890			0.922

CONTROL: Stop Sign

TMC SUMMARY OF Oasis Road/Twin View Blvd.

Project #: 45-2170-01



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Twin View Blvd. DATE: 3/20/07 LOCATION: City of Redding

E-W STREET: Oasis Road DAY: Tuesday PROJECT# 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM	3	1	2	1	2	2	2	23	2	1	98	2	140
7:30 AM	5	1	1	1	2	2	4	30	2	4	123	1	176
7:45 AM	2	2	4	1	2	3	3	44	11	3	108	0	185
8:00 AM	3	4	4	0	2	2	5	40	10	1	77	0	148
8:15 AM	2	0	1	1	2	3	11	34	4	2	64	0	124
8:30 AM	0	2	2	1	1	2	2	38	5	2	63	0	118
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL 15	NT 10	NR 14	SL 8	ST 11	SR 14	EL 27	ET 209	ER 34	WL 13	WT 533	WR 3	TOTAL 891

AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	13	8	11	6	8	9	14	137	25	9	406	3	649
PEAK HR. FACTOR:		0.727			0.719			0.759			0.816		0.877

CONTROL: Stop Sign

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Twin View Blvd. DATE: 3/20/07 LOCATION: City of Redding

E-W STREET: Oasis Road DAY: Tuesday PROJECT# 45-2170-01

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 1	NR 1	SL 1	ST 1	SR 1	EL 1	ET 1	ER 1	WL 1	WT 1	WR 1	TOTAL
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM	6	1	11	1	1	2	5	55	2	2	38	1	125
4:30 PM	6	4	3	1	1	5	6	65	10	3	47	0	151
4:45 PM	9	6	5	3	2	4	5	73	6	4	38	0	155
5:00 PM	18	1	9	1	3	7	4	98	6	0	52	0	199
5:15 PM	13	3	10	2	2	7	3	91	2	0	36	0	169
5:30 PM	11	6	6	2	4	6	1	108	8	0	41	0	195
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	NL 63	NT 21	NR 46	SL 10	ST 13	SR 31	EL 24	ET 490	ER 34	WL 9	WT 252	WR 1	TOTAL 994

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	51	16	32	8	11	24	13	370	22	4	167	0	718
PEAK HR. FACTOR:		0.884			0.896			0.865			0.822		0.902

CONTROL: Stop Sign

BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

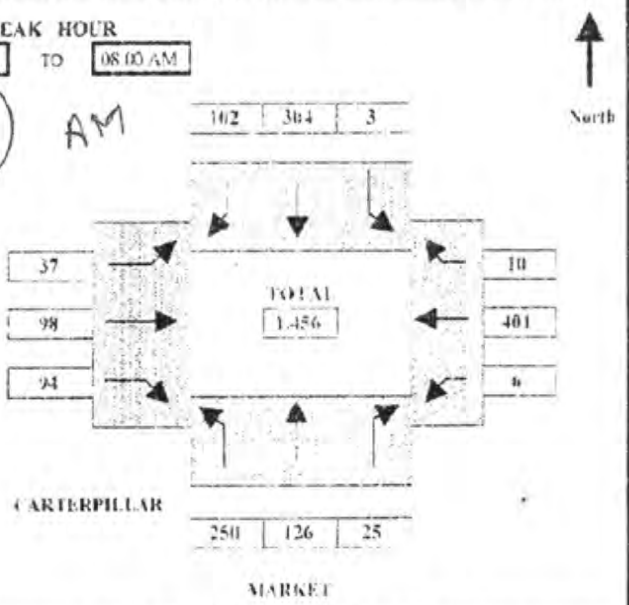
PROJECT: SHASTA LAKE TS — SURVEY DATE: 9/19/2006 — DAY: TUESDAY

N-S Approach: MARKET — SURVEY TIME: 7:00 AM TO 9:00 AM

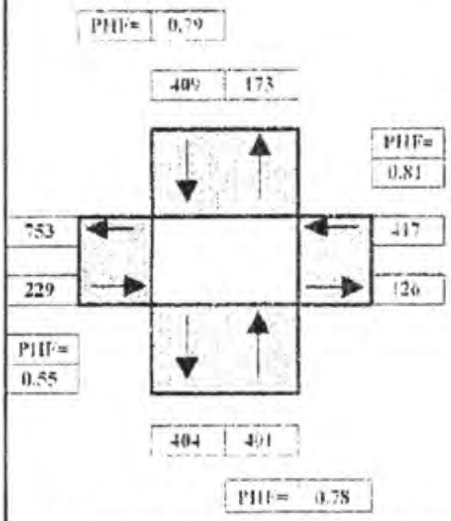
E-W Approach: CARTERPILLAR — CITY: SHASTA LAKE — FILE: MKCTSLAM

PEAK HOUR 07:00 AM TO 08:00 AM

(26) AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	57	34	10	0	34	25	7	32	23	2	125	2	*351*
07:15 AM	---	07:30 AM	129	40	15	1	132	56	17	60	47	3	242	3	*745*
07:30 AM	---	07:45 AM	184	85	21	1	227	82	29	78	72	5	326	7	*1,111*
07:45 AM	---	08:00 AM	250	126	25	3	304	102	37	98	94	6	401	10	*1,456*
08:00 AM	---	08:15 AM	325	166	38	4	374	117	51	120	128	10	455	13	*1,801*
08:15 AM	---	08:30 AM	391	203	46	10	436	128	62	151	158	11	503	19	*2,118*
08:30 AM	---	08:45 AM	440	235	53	12	497	136	71	199	199	15	541	22	*2,420*
08:45 AM	---	09:00 AM	483	272	58	14	551	150	86	251	237	16	575	25	*2,718*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	57	34	10	0	34	25	7	32	23	2	125	2	*351*
07:15 AM	---	07:30 AM	72	6	5	1	98	31	10	28	24	1	117	1	*394*
07:30 AM	---	07:45 AM	55	45	6	0	95	26	12	18	25	2	84	4	*366*
07:45 AM	---	08:00 AM	66	41	4	2	81	20	8	20	22	3	75	3	*345*
08:00 AM	---	08:15 AM	75	40	13	1	70	15	14	22	34	4	54	3	*345*
08:15 AM	---	08:30 AM	66	37	8	6	62	11	11	31	30	1	48	6	*317*
08:30 AM	---	08:45 AM	49	32	7	2	61	8	9	48	41	4	38	3	*302*
08:45 AM	---	09:00 AM	43	37	5	2	54	14	15	52	38	1	34	3	*298*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	250	126	25	3	304	102	37	98	94	6	401	10	*1,456*
07:15 AM	---	08:15 AM	268	132	28	4	340	92	44	88	105	8	330	11	*1,450*
07:30 AM	---	08:30 AM	262	163	33	9	304	72	45	91	111	8	261	16	*1,573*
07:45 AM	---	08:45 AM	256	150	32	11	274	54	42	121	127	12	215	15	*1,309*
08:00 AM	---	09:00 AM	233	146	33	11	247	48	49	153	142	10	174	15	*1,262*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

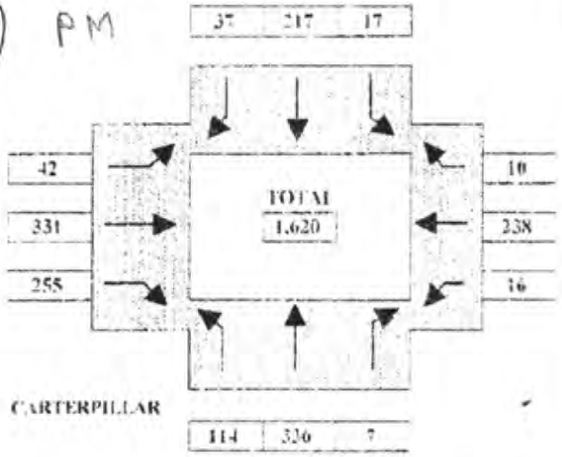
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

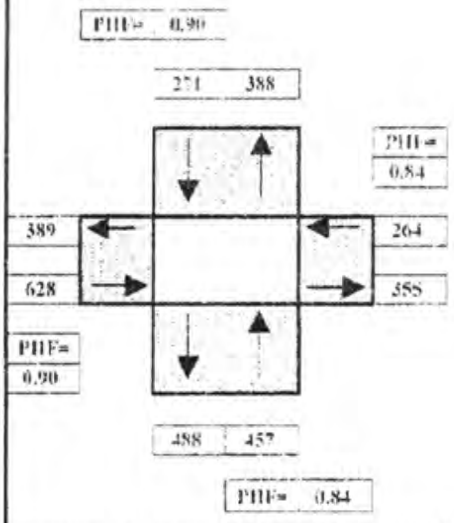
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	MARKET	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	CARTERPILLAR	CITY: SHASTA LAKE	FILE: MKCTSLPM

PEAK HOUR
04:00 PM TO 05:00 PM

(26) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	41	95	0	3	52	7	14	70	56	3	55	2	*398*
04:15 PM	—	04:30 PM	74	182	1	10	105	17	25	154	124	10	123	6	*831*
04:30 PM	—	04:45 PM	98	252	3	15	152	29	32	249	197	12	184	7	*1,230*
04:45 PM	—	05:00 PM	114	326	7	17	217	37	42	331	255	16	238	10	*1,620*
05:00 PM	—	05:15 PM	129	411	10	21	268	43	57	407	299	18	287	13	*1,993*
05:15 PM	—	05:30 PM	136	534	14	23	310	48	66	469	323	21	329	20	*2,303*
05:30 PM	—	05:45 PM	144	648	18	26	359	50	77	526	359	25	361	27	*2,623*
05:45 PM	—	06:00 PM	149	753	21	30	403	55	87	581	386	30	391	33	*2,922*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	41	95	0	3	52	7	14	70	56	3	55	2	*398*
04:15 PM	—	04:30 PM	33	87	1	7	53	10	11	84	68	7	68	4	*433*
04:30 PM	—	04:45 PM	24	70	2	5	47	12	7	95	73	2	61	1	*399*
04:45 PM	—	05:00 PM	16	74	4	2	65	8	10	82	58	4	54	3	*390*
05:00 PM	—	05:15 PM	15	105	3	1	51	6	15	76	44	2	49	5	*375*
05:15 PM	—	05:30 PM	7	93	4	2	42	5	9	62	33	3	42	7	*310*
05:30 PM	—	05:45 PM	8	114	4	3	49	2	11	57	36	4	35	7	*320*
05:45 PM	—	06:00 PM	5	105	3	4	44	5	10	55	27	5	30	6	*299*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	114	326	7	17	217	37	42	331	255	16	238	10	*1,620*
04:15 PM	—	05:15 PM	88	346	10	18	216	36	43	337	243	15	232	11	*1,595*
04:30 PM	—	05:30 PM	63	352	13	13	205	31	41	315	209	11	206	14	*1,472*
04:45 PM	—	05:45 PM	46	396	15	11	207	21	45	277	162	13	180	20	*1,393*
05:00 PM	—	06:00 PM	35	417	14	13	186	18	45	250	131	14	156	23	*1,302*

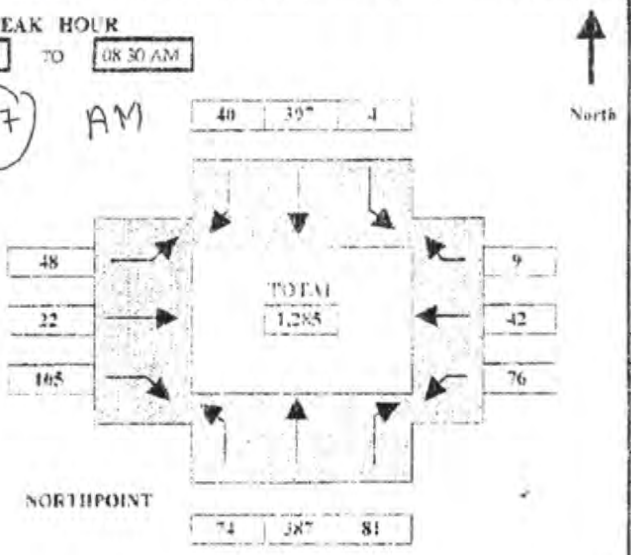
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

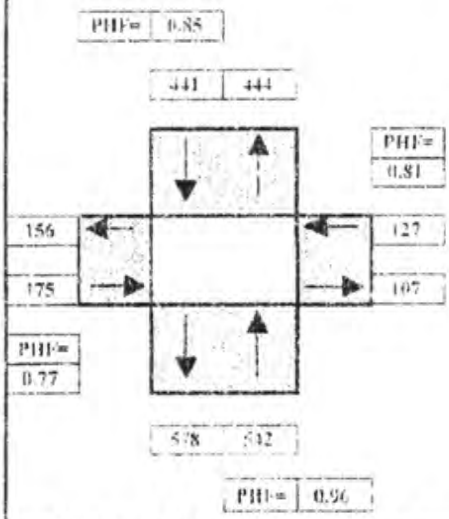
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	MARKET	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	NORTHPOINT	CITY: SHASTA LAKE	FILE: MKNPSLAM

PEAK HOUR
07:30 AM TO 08:30 AM

27 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	6	84	7	0	71	5	6	3	16	5	2	0	*265*
07:15 AM	—	07:30 AM	17	151	18	2	159	15	16	8	42	16	10	1	*465*
07:30 AM	—	07:45 AM	37	265	35	2	274	30	31	16	76	33	24	3	*825*
07:45 AM	—	08:00 AM	55	350	60	4	380	42	42	20	104	57	38	5	*1,155*
08:00 AM	—	08:15 AM	75	442	67	6	474	69	55	23	128	70	47	7	*1,463*
08:15 AM	—	08:30 AM	91	548	99	6	556	55	64	30	147	92	52	10	*1,759*
08:30 AM	—	08:45 AM	110	629	113	7	649	59	71	35	162	112	56	14	*2,017*
08:45 AM	—	09:00 AM	131	707	133	7	727	65	85	46	179	150	62	16	*2,288*
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	6	84	7	0	71	5	6	3	16	5	2	0	*265*
07:15 AM	—	07:30 AM	11	77	11	2	88	10	10	5	26	11	8	1	*260*
07:30 AM	—	07:45 AM	20	104	17	0	115	15	15	8	34	17	13	2	*360*
07:45 AM	—	08:00 AM	18	85	25	2	106	12	11	4	28	24	15	6	*330*
08:00 AM	—	08:15 AM	20	92	21	2	94	7	13	3	24	13	9	1	*308*
08:15 AM	—	08:30 AM	16	106	18	0	82	6	9	7	19	22	5	3	*287*
08:30 AM	—	08:45 AM	19	81	14	1	93	4	7	5	15	20	4	4	*267*
08:45 AM	—	09:00 AM	21	78	20	0	78	6	14	11	17	38	6	2	*271*
HOURLY TOTALS															
07:00 AM	—	08:00 AM	55	350	60	4	380	42	42	20	104	57	38	5	*1,155*
07:15 AM	—	08:15 AM	69	358	74	6	403	44	49	20	113	71	45	7	*1,258*
07:30 AM	—	08:30 AM	72	387	81	4	397	40	48	22	105	76	42	9	*1,285*
07:45 AM	—	08:45 AM	73	364	78	5	375	29	40	19	86	79	33	11	*1,192*
08:00 AM	—	09:00 AM	76	357	73	3	347	23	43	26	75	73	24	13	*1,133*

Tel: (510) 232-1271 *Fax: (510) 232-1272*

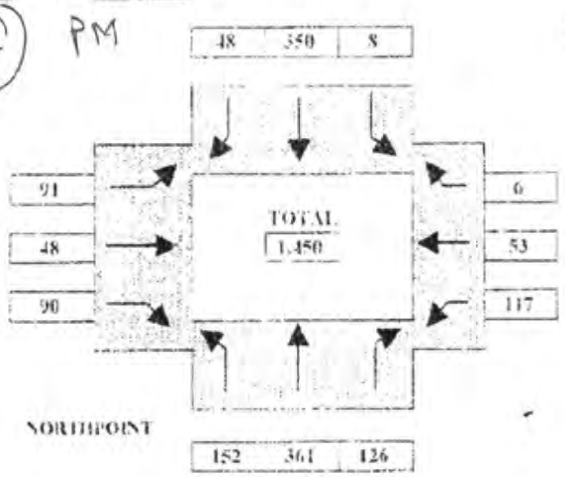
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

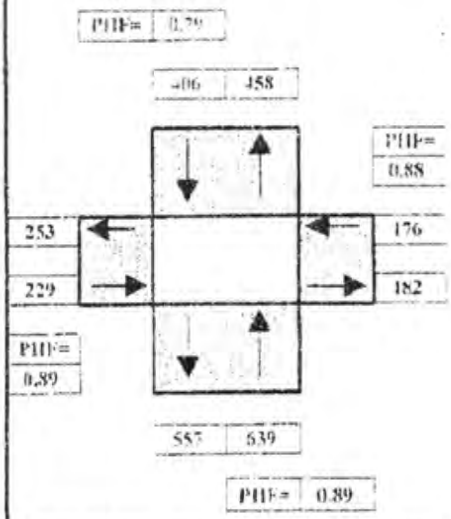
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	MARKET	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	NORTHPOINT	CITY: SHASTA LAKE	FILE: MKNPSLPM

PEAK HOUR
04:45 PM TO 05:45 PM

(27) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	18	122	22	2	107	8	15	13	19	21	10	2	359
04:15 PM	—	04:30 PM	41	207	39	3	224	18	36	21	42	38	22	3	695
04:30 PM	—	04:45 PM	69	297	65	4	311	32	58	31	60	67	29	3	1,026
04:45 PM	—	05:00 PM	103	386	90	7	429	40	76	38	86	88	43	4	1,390
05:00 PM	—	05:15 PM	138	458	121	10	506	51	104	52	108	118	58	6	1,743
05:15 PM	—	05:30 PM	187	542	162	10	576	65	124	67	133	155	68	9	2,098
05:30 PM	—	05:45 PM	221	658	191	12	661	80	149	79	150	184	82	9	2,476
05:45 PM	—	06:00 PM	249	748	222	15	728	89	168	89	170	215	90	11	2,795
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	18	122	22	2	107	8	15	13	19	21	10	2	359
04:15 PM	—	04:30 PM	23	85	17	1	117	10	21	8	23	18	12	1	336
04:30 PM	—	04:45 PM	28	90	26	1	87	14	22	10	18	28	7	0	331
04:45 PM	—	05:00 PM	34	89	25	3	118	8	18	7	26	21	14	1	364
05:00 PM	—	05:15 PM	45	72	34	3	77	11	28	14	22	30	15	2	353
05:15 PM	—	05:30 PM	39	84	38	0	70	14	20	15	25	37	10	3	355
05:30 PM	—	05:45 PM	34	116	29	2	85	15	25	12	17	29	14	0	378
05:45 PM	—	06:00 PM	28	90	31	3	67	9	19	10	20	32	8	2	319
HOURLY TOTALS															
04:00 PM	—	05:00 PM	103	386	90	7	429	40	76	38	86	88	43	4	1,390
04:15 PM	—	05:15 PM	136	536	102	8	399	43	89	39	89	97	48	1	1,384
04:30 PM	—	05:30 PM	146	535	123	7	352	47	88	46	91	110	46	5	1,403
04:45 PM	—	05:45 PM	152	361	126	8	350	28	91	48	90	117	53	6	1,450
05:00 PM	—	06:00 PM	146	362	132	8	299	49	92	51	84	128	47	7	1,405

Tel : (510) 232-1271 Fax: (510) 232-1272

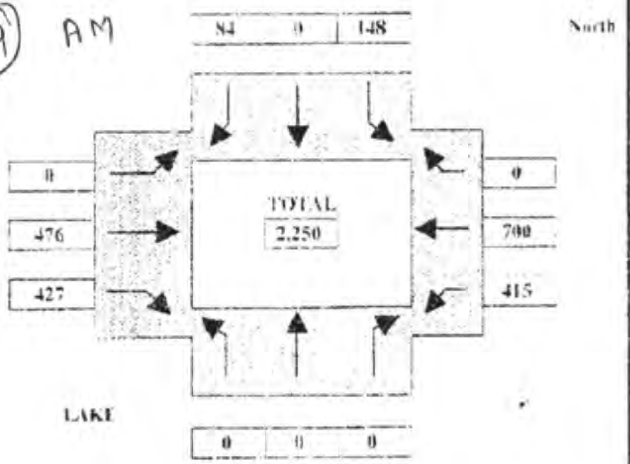
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

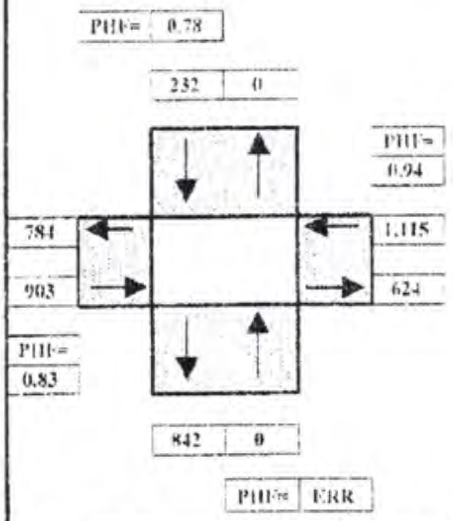
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	I-5 SB OFF-RAMP	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	LAKE	CITY: SHASTA LAKE	FILE: LA5SSLAM

PEAK HOUR
07:30 AM TO 08:30 AM

29 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	0	0	0	19	0	20	0	75	76	72	84	0	346
07:15 AM	—	07:30 AM	0	0	0	47	0	45	0	151	177	156	191	0	777
07:30 AM	—	07:45 AM	0	0	0	102	0	64	0	223	304	288	350	0	1,331
07:45 AM	—	08:00 AM	0	0	0	138	0	82	0	393	407	383	552	0	1,955
08:00 AM	—	08:15 AM	0	0	0	171	0	110	0	504	496	469	725	0	2,475
08:15 AM	—	08:30 AM	0	0	0	195	0	129	0	627	694	581	891	0	3,027
08:30 AM	—	08:45 AM	0	0	0	211	0	137	0	727	698	672	1,007	0	3,452
08:45 AM	—	09:00 AM	0	0	0	246	0	152	0	810	786	755	1,125	0	3,874
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	0	0	0	19	0	20	0	75	76	72	84	0	346
07:15 AM	—	07:30 AM	0	0	0	28	0	25	0	76	101	84	107	0	431
07:30 AM	—	07:45 AM	0	0	0	55	0	19	0	72	127	132	159	0	554
07:45 AM	—	08:00 AM	0	0	0	36	0	18	0	170	103	95	202	0	624
08:00 AM	—	08:15 AM	0	0	0	33	0	28	0	111	89	86	173	0	520
08:15 AM	—	08:30 AM	0	0	0	24	0	19	0	123	198	112	166	0	552
08:30 AM	—	08:45 AM	0	0	0	16	0	8	0	100	94	91	116	0	425
08:45 AM	—	09:00 AM	0	0	0	35	0	15	0	83	88	83	118	0	422
HOURLY TOTALS															
07:00 AM	—	08:00 AM	0	0	0	138	0	82	0	393	407	383	552	0	1,955
07:15 AM	—	08:15 AM	0	0	0	152	0	96	0	429	420	397	641	0	2,129
07:30 AM	—	08:30 AM	0	0	0	148	0	84	0	476	427	415	700	0	2,250
07:45 AM	—	08:45 AM	0	0	0	109	0	73	0	504	394	384	657	0	2,121
08:00 AM	—	09:00 AM	0	0	0	108	0	70	0	417	369	372	573	0	1,909

Tel : (510) 232-1271 Fax: (510) 232-1272

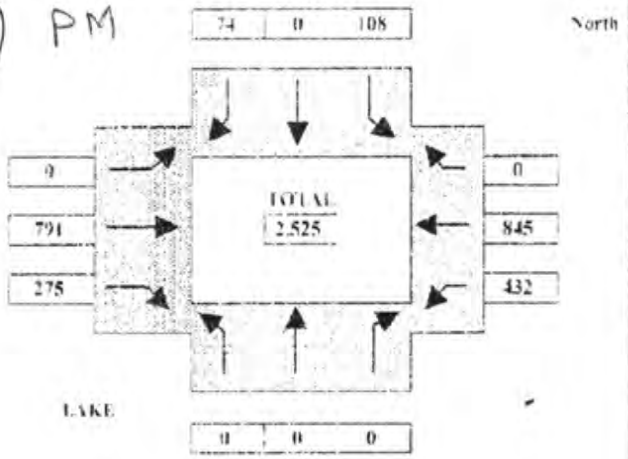
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

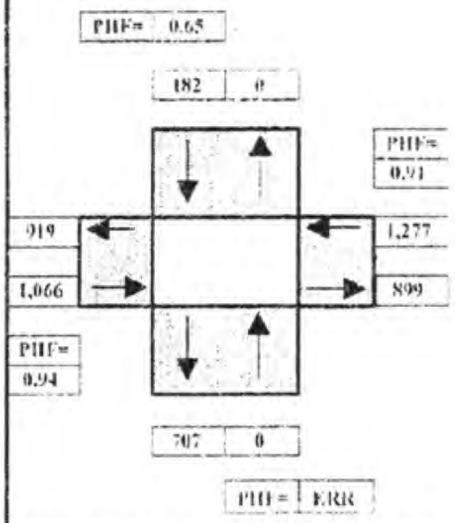
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	I-5 SB OFF-RAMP	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	LAKE	CITY: SHASTA LAKE	FILE: LA5SSLPM

PEAK HOUR
05:00 PM TO 06:00 PM

29 PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	0	0	0	34	0	26	0	114	55	77	211	0	*517*
04:15 PM	—	04:30 PM	0	0	0	62	0	45	0	294	116	162	444	0	*1,123*
04:30 PM	—	04:45 PM	0	0	0	97	0	59	0	470	179	256	649	0	*1,710*
04:45 PM	—	05:00 PM	0	0	0	122	0	81	0	616	251	348	908	0	*2,326*
05:00 PM	—	05:15 PM	0	0	0	141	0	98	0	802	303	458	1,119	0	*2,921*
05:15 PM	—	05:30 PM	0	0	0	163	0	112	0	987	389	579	1,297	0	*3,527*
05:30 PM	—	05:45 PM	0	0	0	205	0	140	0	1,201	460	677	1,542	0	*4,225*
05:45 PM	—	06:00 PM	0	0	0	230	0	155	0	1,407	526	780	1,753	0	*4,851*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	0	0	0	34	0	26	0	114	55	77	211	0	*517*
04:15 PM	—	04:30 PM	0	0	0	28	0	19	0	180	61	85	233	0	*606*
04:30 PM	—	04:45 PM	0	0	0	35	0	14	0	176	63	94	205	0	*587*
04:45 PM	—	05:00 PM	0	0	0	25	0	22	0	146	72	92	259	0	*616*
05:00 PM	—	05:15 PM	0	0	0	19	0	17	0	186	52	110	211	0	*595*
05:15 PM	—	05:30 PM	0	0	0	22	0	14	0	185	86	121	178	0	*606*
05:30 PM	—	05:45 PM	0	0	0	42	0	28	0	214	71	98	245	0	*698*
05:45 PM	—	06:00 PM	0	0	0	25	0	15	0	206	66	103	211	0	*626*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	0	0	0	122	0	81	0	616	251	348	908	0	*2,326*
04:15 PM	—	05:15 PM	0	0	0	107	0	72	0	688	248	381	948	0	*2,444*
04:30 PM	—	05:30 PM	0	0	0	101	0	67	0	693	273	417	853	0	*2,404*
04:45 PM	—	05:45 PM	0	0	0	108	0	81	0	731	281	431	893	0	*2,515*
05:00 PM	—	06:00 PM	0	0	0	108	0	74	0	791	275	432	845	0	*2,525*

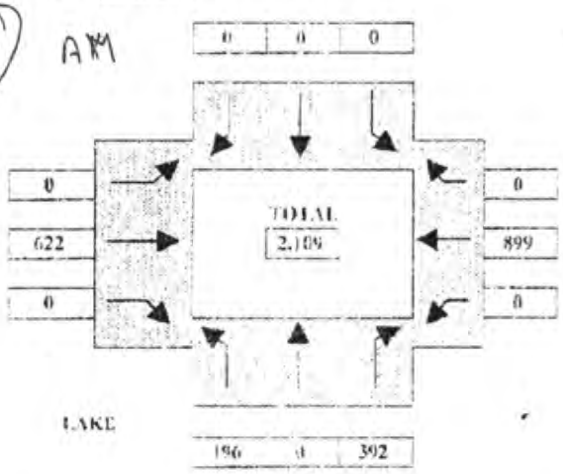
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

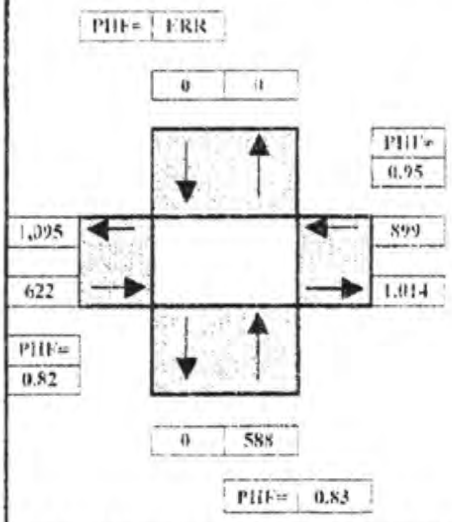
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	I-5 NB OFF-RAMP	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	LAKE	CITY: SHASTA LAKE	FILE: LA5NSLAM

PEAK HOUR
07:30 AM TO 08:30 AM

30 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	31	0	41	0	0	0	0	89	0	0	122	0	283
07:15 AM	---	07:30 AM	87	0	96	0	0	0	0	195	0	0	278	0	656
07:30 AM	---	07:45 AM	129	0	208	0	0	0	0	337	0	0	502	0	1,176
07:45 AM	---	08:00 AM	191	0	323	0	0	0	0	526	0	0	738	0	1,778
08:00 AM	---	08:15 AM	240	0	405	0	0	0	0	689	0	0	962	0	2,295
08:15 AM	---	08:30 AM	283	0	488	0	0	0	0	847	0	0	1,177	0	2,795
08:30 AM	---	08:45 AM	325	0	592	0	0	0	0	947	0	0	1,363	0	3,227
08:45 AM	---	09:00 AM	358	0	661	0	0	0	0	1,062	0	0	1,527	0	3,608
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	31	0	41	0	0	0	0	89	0	0	122	0	283
07:15 AM	---	07:30 AM	56	0	55	0	0	0	0	106	0	0	156	0	373
07:30 AM	---	07:45 AM	42	0	112	0	0	0	0	142	0	0	224	0	520
07:45 AM	---	08:00 AM	62	0	115	0	0	0	0	189	0	0	236	0	602
08:00 AM	---	08:15 AM	49	0	82	0	0	0	0	163	0	0	224	0	518
08:15 AM	---	08:30 AM	43	0	83	0	0	0	0	128	0	0	215	0	469
08:30 AM	---	08:45 AM	42	0	104	0	0	0	0	130	0	0	186	0	462
08:45 AM	---	09:00 AM	33	0	69	0	0	0	0	115	0	0	164	0	381
HOURLY TOTALS															
07:00 AM	---	08:00 AM	191	0	323	0	0	0	0	526	0	0	738	0	1,778
07:15 AM	---	08:15 AM	209	0	364	0	0	0	0	600	0	0	840	0	2,013
07:30 AM	---	08:30 AM	196	0	392	0	0	0	0	622	0	0	899	0	2,109
07:45 AM	---	08:45 AM	196	0	384	0	0	0	0	619	0	0	861	0	2,051
08:00 AM	---	09:00 AM	167	0	338	0	0	0	0	536	0	0	789	0	1,830

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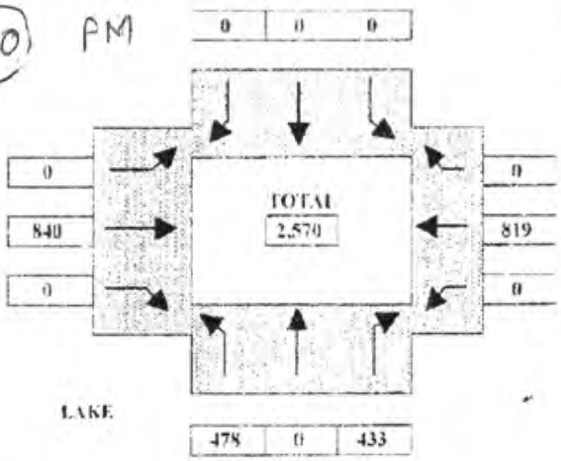
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

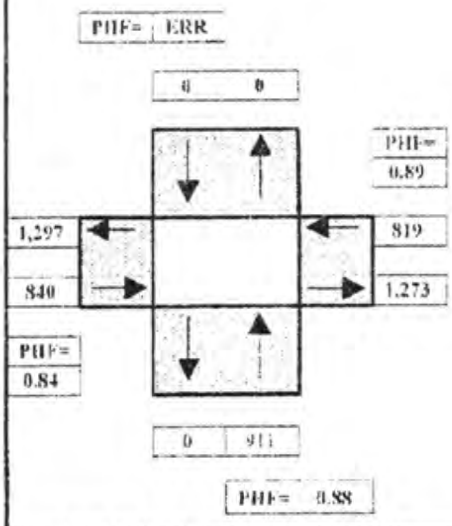
PROJECT:	SHASTA LAKE TS	SURVEY DATE: 9/19/2006	DAY: TUESDAY
N-S Approach:	I-5 NB OFF-RAMP	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	LAKE	CITY: SHASTA LAKE	FILE: LA5NSLPM

PEAK HOUR
04:45 PM TO 05:45 PM

(30) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
04:00 PM	04:15 PM	112	0	114	0	0	0	0	163	0	0	170	0	559
04:15 PM	04:30 PM	242	0	243	0	0	0	0	347	0	0	354	0	1,187
04:30 PM	04:45 PM	349	0	348	0	0	0	0	561	0	0	567	0	1,825
04:45 PM	05:00 PM	474	0	447	0	0	0	0	751	0	0	796	0	2,468
05:00 PM	05:15 PM	587	0	560	0	0	0	0	938	0	0	985	0	3,070
05:15 PM	05:30 PM	721	0	645	0	0	0	0	1,151	0	0	1,162	0	3,679
05:30 PM	05:45 PM	827	0	781	0	0	0	0	1,401	0	0	1,386	0	4,395
05:45 PM	06:00 PM	951	0	865	0	0	0	0	1,633	0	0	1,587	0	5,036
TOTAL BY PERIOD														
04:00 PM	04:15 PM	112	0	114	0	0	0	0	163	0	0	170	0	559
04:15 PM	04:30 PM	131	0	129	0	0	0	0	184	0	0	184	0	628
04:30 PM	04:45 PM	106	0	105	0	0	0	0	214	0	0	213	0	638
04:45 PM	05:00 PM	125	0	99	0	0	0	0	190	0	0	229	0	643
05:00 PM	05:15 PM	113	0	113	0	0	0	0	187	0	0	189	0	602
05:15 PM	05:30 PM	134	0	85	0	0	0	0	213	0	0	177	0	609
05:30 PM	05:45 PM	106	0	136	0	0	0	0	250	0	0	224	0	716
05:45 PM	06:00 PM	124	0	84	0	0	0	0	232	0	0	201	0	641
HOURLY TOTALS														
04:00 PM	05:00 PM	474	0	447	0	0	0	0	751	0	0	796	0	2,468
04:15 PM	05:15 PM	475	0	446	0	0	0	0	775	0	0	815	0	2,511
04:30 PM	05:30 PM	478	0	402	0	0	0	0	804	0	0	808	0	2,492
04:45 PM	05:45 PM	478	0	433	0	0	0	0	840	0	0	819	0	2,570
05:00 PM	06:00 PM	477	0	418	0	0	0	0	882	0	0	791	0	2,568

Tel : (510) 232-1271 *Fax: (510) 232-1272*

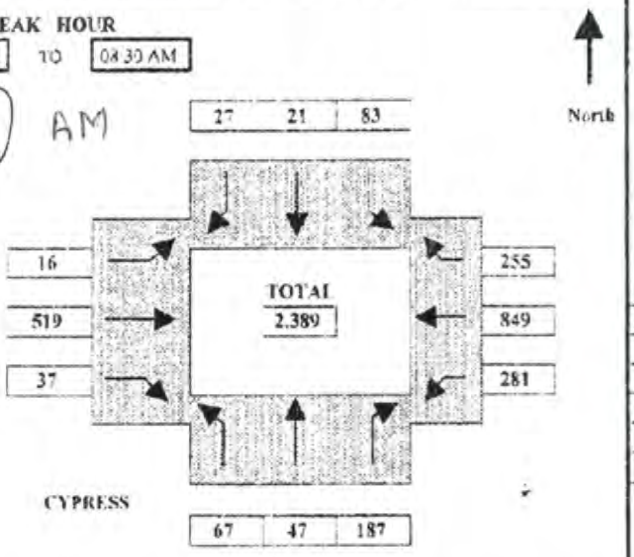
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

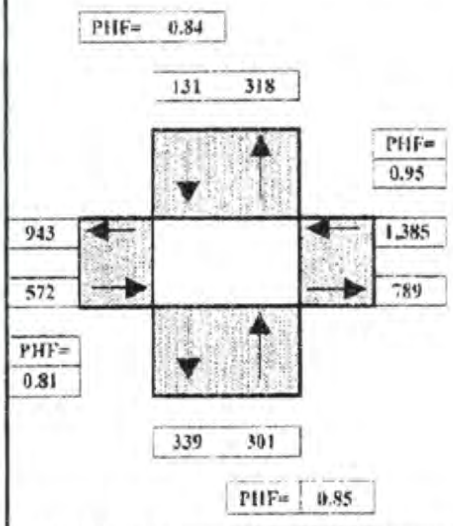
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	BERCHELLI	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CPBCRDAM

PEAK HOUR
07:30 AM TO 08:30 AM

31 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	---	07:15 AM	12	7	38	15	4	4	2	80	7	46	105	35	*355*
07:15 AM	---	07:30 AM	27	17	84	36	6	11	6	182	19	103	271	83	*845*
07:30 AM	---	07:45 AM	43	32	142	55	11	21	9	306	27	169	507	135	*1,457*
07:45 AM	---	08:00 AM	56	46	191	80	20	26	14	451	33	243	735	194	*2,089*
08:00 AM	---	08:15 AM	76	54	234	102	24	34	16	570	46	317	946	272	*2,691*
08:15 AM	---	08:30 AM	94	64	271	119	27	38	22	701	56	384	1,120	338	*3,234*
08:30 AM	---	08:45 AM	116	71	317	139	34	43	25	826	73	449	1,323	397	*3,813*
08:45 AM	---	09:00 AM	144	81	359	165	39	46	30	976	94	517	1,545	446	*4,442*
TOTAL BY PERIOD															
07:00 AM	---	07:15 AM	12	7	38	15	4	4	2	80	7	46	105	35	*355*
07:15 AM	---	07:30 AM	15	10	46	21	2	7	4	102	12	57	166	48	*490*
07:30 AM	---	07:45 AM	16	15	58	19	5	10	3	124	8	66	236	52	*612*
07:45 AM	---	08:00 AM	13	14	49	25	9	5	5	145	6	74	228	59	*632*
08:00 AM	---	08:15 AM	20	8	43	22	4	8	2	119	13	74	211	78	*602*
08:15 AM	---	08:30 AM	18	10	37	17	3	4	6	131	10	67	174	66	*543*
08:30 AM	---	08:45 AM	22	7	46	20	7	5	3	125	17	65	203	59	*579*
08:45 AM	---	09:00 AM	28	10	42	26	5	3	5	150	21	68	222	49	*629*
HOURLY TOTALS															
07:00 AM	---	08:00 AM	56	46	191	80	20	26	14	451	33	243	735	194	*2,089*
07:15 AM	---	08:15 AM	64	47	196	87	20	30	14	490	39	271	841	237	*2,336*
07:30 AM	---	08:30 AM	67	47	187	83	21	27	16	519	37	281	849	255	*2,389*
07:45 AM	---	08:45 AM	73	39	175	84	23	22	16	520	46	280	816	262	*2,356*
08:00 AM	---	09:00 AM	88	35	168	85	19	20	16	525	61	274	810	252	*2,353*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

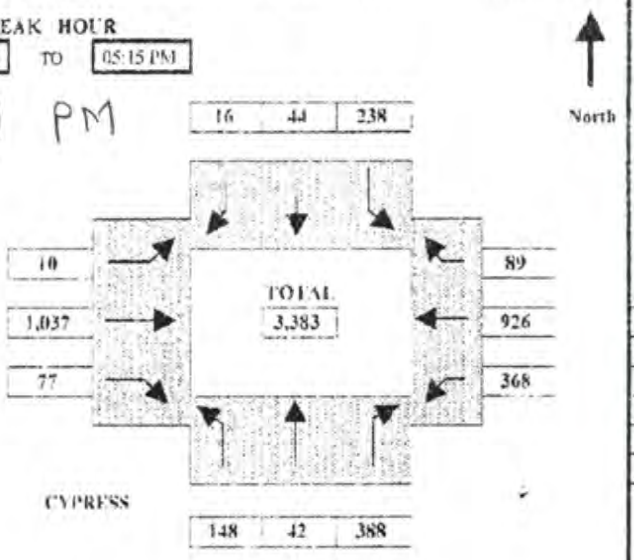
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

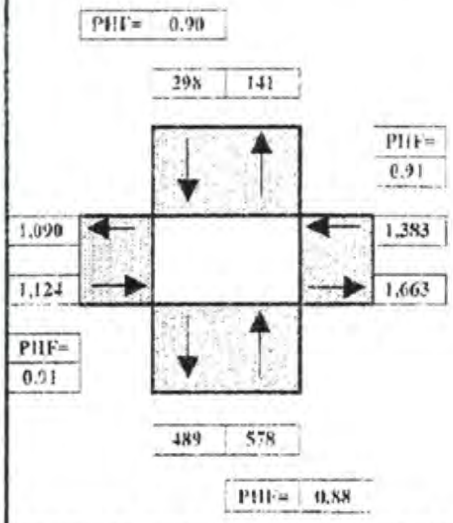
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	BERCHELLI	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CPBCRDPM

PEAK HOUR
04:15 PM TO 05:15 PM

(31) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	26	10	82	41	10	5	0	250	22	82	219	22	769
04:15 PM	—	04:30 PM	59	25	176	96	18	8	2	478	47	173	466	52	1,609
04:30 PM	—	04:45 PM	99	34	291	160	33	12	3	720	65	265	728	78	2,488
04:45 PM	—	05:00 PM	136	45	382	217	45	18	7	1,010	80	363	945	96	3,344
05:00 PM	—	05:15 PM	174	52	470	279	54	21	10	1,287	99	450	1,145	111	4,152
05:15 PM	—	05:30 PM	203	57	575	331	68	23	12	1,526	114	556	1,338	131	4,934
05:30 PM	—	05:45 PM	230	65	667	376	78	27	13	1,769	131	655	1,520	148	5,679
05:45 PM	—	06:00 PM	250	69	751	406	85	29	15	1,956	145	749	1,698	162	6,315
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	26	10	82	41	10	5	0	250	22	82	219	22	769
04:15 PM	—	04:30 PM	33	15	94	55	8	3	2	228	25	91	247	30	831
04:30 PM	—	04:45 PM	40	9	115	64	15	4	1	242	18	92	262	26	888
04:45 PM	—	05:00 PM	37	11	91	57	12	6	4	290	15	98	217	18	856
05:00 PM	—	05:15 PM	38	7	88	62	9	3	3	277	19	87	200	15	808
05:15 PM	—	05:30 PM	29	5	105	52	14	2	2	239	15	106	193	20	782
05:30 PM	—	05:45 PM	27	8	92	45	10	4	1	243	17	99	182	17	745
05:45 PM	—	06:00 PM	20	4	84	30	7	2	2	187	14	94	178	14	636
HOURLY TOTALS															
04:00 PM	—	05:00 PM	136	45	382	217	45	18	7	1,010	80	363	945	96	3,344
04:15 PM	—	05:15 PM	148	42	388	238	44	16	10	1,037	77	368	926	89	3,385
04:30 PM	—	05:30 PM	144	32	399	235	50	15	10	1,048	67	383	872	79	3,334
04:45 PM	—	05:45 PM	131	31	376	216	45	15	10	1,049	66	390	792	70	3,191
05:00 PM	—	06:00 PM	114	24	369	189	40	11	8	946	65	386	753	66	2,971

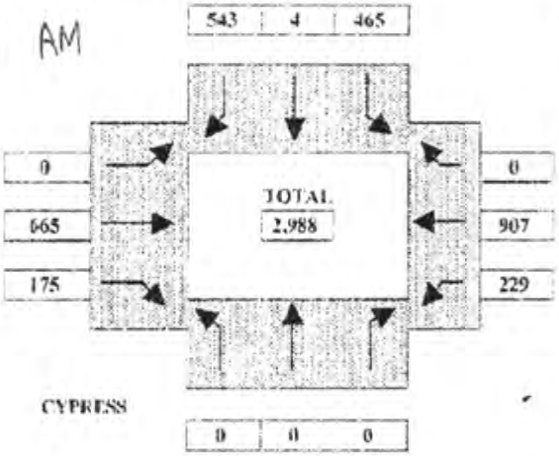
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

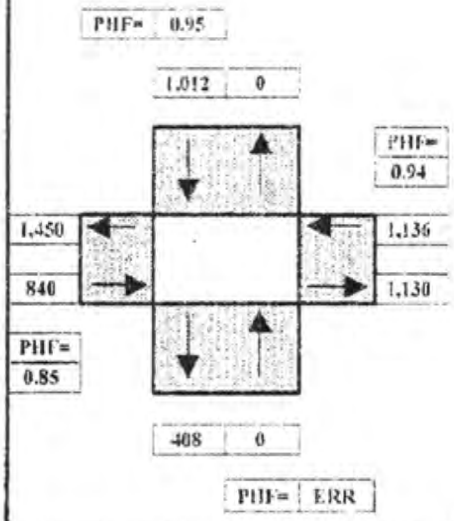
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 7:00 AM TO	9:00 AM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CP5SRDAM

PEAK HOUR
07:45 AM TO 08:45 AM

32 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
07:00 AM	—	07:15 AM	0	0	0	60	0	59	0	114	11	58	115	0	*417*
07:15 AM	—	07:30 AM	0	0	0	136	6	129	0	246	30	110	257	0	*908*
07:30 AM	—	07:45 AM	0	0	0	252	0	233	0	400	55	171	436	0	*1,547*
07:45 AM	—	08:00 AM	0	0	0	360	1	378	0	577	88	243	650	0	*2,297*
08:00 AM	—	08:15 AM	0	0	0	484	2	513	0	776	136	302	892	0	*3,105*
08:15 AM	—	08:30 AM	0	0	0	589	2	639	0	921	188	354	1,123	0	*3,816*
08:30 AM	—	08:45 AM	0	0	0	717	4	776	0	1,065	230	400	1,343	0	*4,535*
08:45 AM	—	09:00 AM	0	0	0	827	4	915	0	1,201	280	443	1,589	0	*5,259*
TOTAL BY PERIOD															
07:00 AM	—	07:15 AM	0	0	0	60	0	59	0	114	11	58	115	0	*417*
07:15 AM	—	07:30 AM	0	0	0	76	0	70	0	132	19	52	142	0	*491*
07:30 AM	—	07:45 AM	0	0	0	116	0	104	0	154	25	61	179	0	*639*
07:45 AM	—	08:00 AM	0	0	0	108	1	145	0	177	33	72	214	0	*750*
08:00 AM	—	08:15 AM	0	0	0	124	1	135	0	199	48	59	242	0	*808*
08:15 AM	—	08:30 AM	0	0	0	105	0	126	0	145	52	52	231	0	*711*
08:30 AM	—	08:45 AM	0	0	0	128	2	137	0	144	42	46	229	0	*719*
08:45 AM	—	09:00 AM	0	0	0	110	0	139	0	136	50	43	246	0	*724*
HOURLY TOTALS															
07:00 AM	—	08:00 AM	0	0	0	360	1	378	0	577	88	243	650	0	*2,297*
07:15 AM	—	08:15 AM	0	0	0	424	2	454	0	662	125	244	777	0	*2,688*
07:30 AM	—	08:30 AM	0	0	0	453	2	510	0	675	158	244	866	0	*2,908*
07:45 AM	—	08:45 AM	0	0	0	465	4	543	0	665	175	229	907	0	*2,988*
08:00 AM	—	09:00 AM	0	0	0	467	3	527	0	624	192	200	939	0	*2,962*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

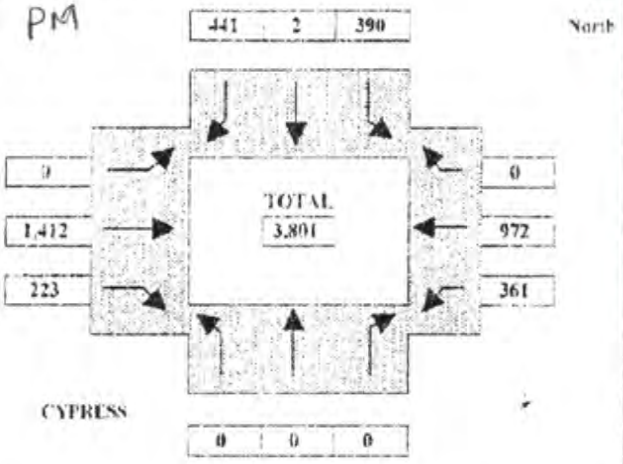
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

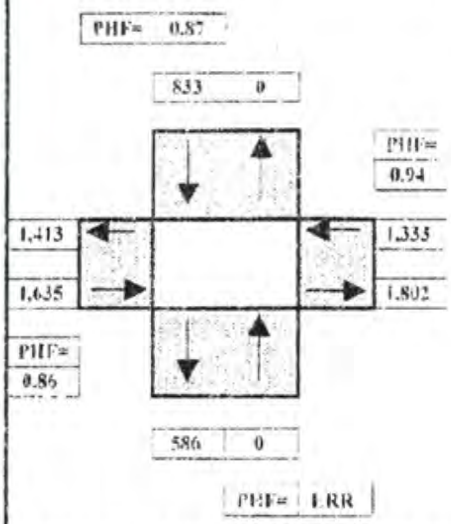
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	I-5 SB RAMPS	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CP5SRDPM

PEAK HOUR
04:15 PM TO 05:15 PM

(37) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	—	04:15 PM	0	0	0	72	0	104	0	375	42	100	204	0	*897*
04:15 PM	—	04:30 PM	0	0	0	156	0	225	0	722	98	219	438	0	*1,858*
04:30 PM	—	04:45 PM	0	0	0	265	0	309	0	1,088	150	298	715	0	*2,825*
04:45 PM	—	05:00 PM	0	0	0	378	1	435	0	1,385	194	389	966	0	*3,748*
05:00 PM	—	05:15 PM	0	0	0	462	2	545	0	1,787	365	461	1,176	0	*4,698*
05:15 PM	—	05:30 PM	0	0	0	553	2	621	0	2,077	328	541	1,385	0	*5,517*
05:30 PM	—	05:45 PM	0	0	0	632	4	726	0	2,412	382	633	1,627	0	*6,416*
05:45 PM	—	06:00 PM	0	0	0	720	4	831	0	2,684	445	708	1,844	0	*7,236*
TOTAL BY PERIOD															
04:00 PM	—	04:15 PM	0	0	0	72	0	104	0	375	42	100	204	0	*897*
04:15 PM	—	04:30 PM	0	0	0	84	0	121	0	347	56	119	234	0	*961*
04:30 PM	—	04:45 PM	0	0	0	109	0	84	0	366	52	79	277	0	*967*
04:45 PM	—	05:00 PM	0	0	0	113	1	126	0	297	44	91	25	0	*923*
05:00 PM	—	05:15 PM	0	0	0	84	1	110	0	402	71	72	210	0	*950*
05:15 PM	—	05:30 PM	0	0	0	91	0	86	0	290	63	80	209	0	*819*
05:30 PM	—	05:45 PM	0	0	0	79	2	95	0	335	54	92	242	0	*899*
05:45 PM	—	06:00 PM	0	0	0	88	0	105	0	272	63	75	217	0	*820*
HOURLY TOTALS															
04:00 PM	—	05:00 PM	0	0	0	378	1	435	0	1,385	194	389	966	0	*3,748*
04:15 PM	—	05:15 PM	0	0	0	390	2	441	0	1,412	223	361	972	0	*3,891*
04:30 PM	—	05:30 PM	0	0	0	397	2	406	0	1,355	230	322	947	0	*3,659*
04:45 PM	—	05:45 PM	0	0	0	367	4	417	0	1,324	232	335	912	0	*3,591*
05:00 PM	—	06:00 PM	0	0	0	342	3	366	0	1,299	251	319	878	0	*3,488*

Tel : (510) 232-1271 *Fax: (510) 232-1272*

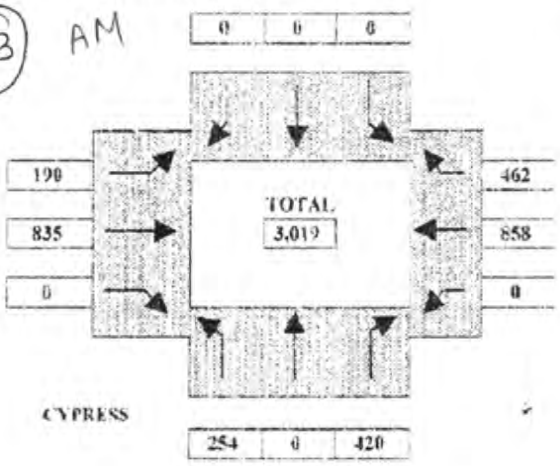
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

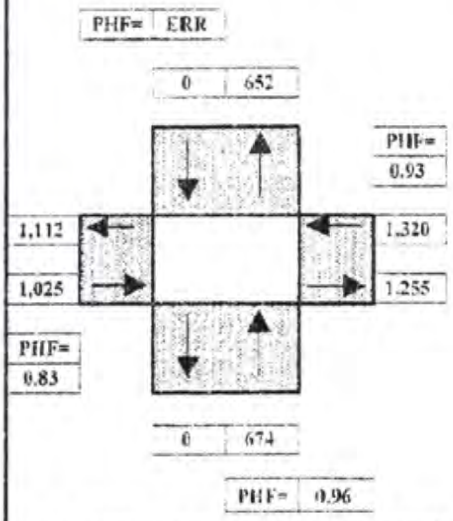
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	I-5 NB RAMPS	SURVEY TIME: 7:00 AM	TO 9:00 AM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CP5NRDAM

PEAK HOUR
08:00 AM TO 09:00 AM

33 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	52	0	40	0	0	0	22	148	0	0	129	62	453
07:15 AM	07:30 AM	131	0	91	0	0	0	64	329	0	0	282	146	1,043
07:30 AM	07:45 AM	226	0	155	0	0	0	113	589	0	0	485	239	1,807
07:45 AM	08:00 AM	324	0	230	0	0	0	166	798	0	0	646	351	2,515
08:00 AM	08:15 AM	395	0	324	0	0	0	208	1,016	0	0	820	474	3,237
08:15 AM	08:30 AM	462	0	430	0	0	0	256	1,230	0	0	1,032	591	4,001
08:30 AM	08:45 AM	522	0	545	0	0	0	309	1,419	0	0	1,259	718	4,772
08:45 AM	09:00 AM	578	0	650	0	0	0	356	1,633	0	0	1,504	813	5,534
TOTAL BY PERIOD														
07:00 AM	07:15 AM	52	0	40	0	0	0	22	148	0	0	129	62	453
07:15 AM	07:30 AM	79	0	51	0	0	0	42	181	0	0	153	84	590
07:30 AM	07:45 AM	95	0	64	0	0	0	49	260	0	0	203	93	764
07:45 AM	08:00 AM	98	0	75	0	0	0	53	209	0	0	161	112	708
08:00 AM	08:15 AM	71	0	94	0	0	0	42	218	0	0	174	123	722
08:15 AM	08:30 AM	67	0	106	0	0	0	48	214	0	0	212	117	764
08:30 AM	08:45 AM	60	0	115	0	0	0	53	189	0	0	227	127	771
08:45 AM	09:00 AM	56	0	105	0	0	0	47	214	0	0	245	95	762
HOURLY TOTALS														
07:00 AM	08:00 AM	324	0	230	0	0	0	166	798	0	0	646	351	2,515
07:15 AM	08:15 AM	343	0	284	0	0	0	186	868	0	0	691	412	2,784
07:30 AM	08:30 AM	331	0	339	0	0	0	192	901	0	0	750	445	2,958
07:45 AM	08:45 AM	296	0	390	0	0	0	196	830	0	0	774	479	2,965
08:00 AM	09:00 AM	254	0	420	0	0	0	190	835	0	0	858	462	3,019

Tel : (510) 232-1271 *Fax: (510) 232-1272*

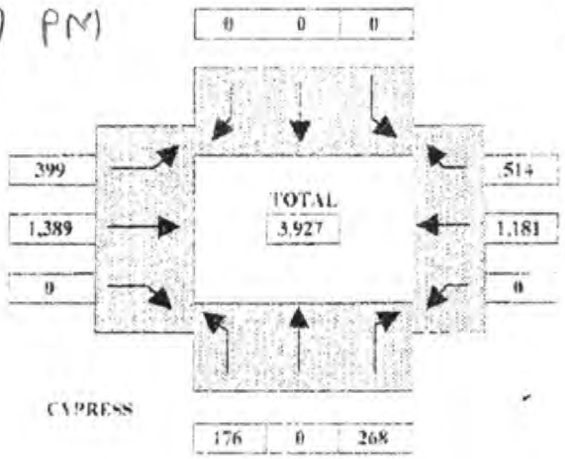
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

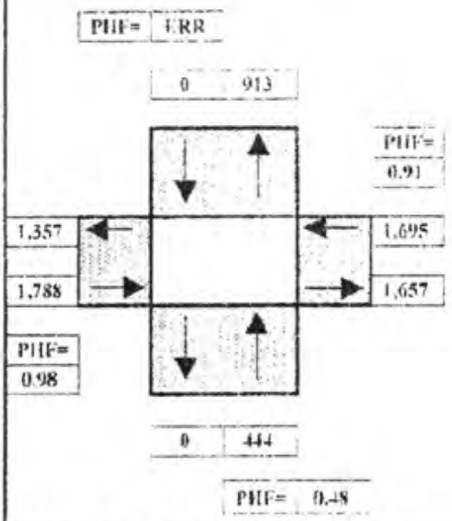
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	I-5 NB RAMPS	SURVEY TIME: 4:00 PM TO	6:00 PM
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CP5NRDPM

PEAK HOUR
04:00 PM TO 05:00 PM

(33) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	46	0	63	0	0	0	105	329	0	0	267	115	*925*
04:15 PM	---	04:30 PM	87	0	138	0	0	0	199	688	0	0	557	239	*1,908*
04:30 PM	---	04:45 PM	124	0	206	0	0	0	311	1,022	0	0	879	384	*2,926*
04:45 PM	---	05:00 PM	176	0	268	0	0	0	399	1,389	0	0	1,181	514	*3,927*
05:00 PM	---	05:15 PM	207	0	326	0	0	0	523	1,709	0	0	1,448	636	*4,849*
05:15 PM	---	05:30 PM	246	0	403	0	0	0	629	2,021	0	0	1,704	777	*5,780*
05:30 PM	---	05:45 PM	278	0	463	0	0	0	720	2,311	0	0	2,006	903	*6,681*
05:45 PM	---	06:00 PM	309	0	524	0	0	0	808	2,585	0	0	2,276	997	*7,499*
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	46	0	63	0	0	0	105	329	0	0	267	115	*925*
04:15 PM	---	04:30 PM	41	0	75	0	0	0	94	359	0	0	290	124	*983*
04:30 PM	---	04:45 PM	37	0	68	0	0	0	112	334	0	0	322	145	*1,018*
04:45 PM	---	05:00 PM	52	0	62	0	0	0	88	367	0	0	302	130	*1,001*
05:00 PM	---	05:15 PM	31	0	58	0	0	0	124	320	0	0	267	122	*922*
05:15 PM	---	05:30 PM	39	0	77	0	0	0	106	312	0	0	256	141	*931*
05:30 PM	---	05:45 PM	32	0	60	0	0	0	91	290	0	0	302	126	*901*
05:45 PM	---	06:00 PM	31	0	61	0	0	0	88	274	0	0	270	94	*818*
HOURLY TOTALS															
04:00 PM	---	05:00 PM	176	0	268	0	0	0	399	1,389	0	0	1,181	514	*3,927*
04:15 PM	---	05:15 PM	161	0	263	0	0	0	418	1,380	0	0	1,181	521	*3,924*
04:30 PM	---	05:30 PM	159	0	265	0	0	0	430	1,333	0	0	1,147	538	*3,872*
04:45 PM	---	05:45 PM	154	0	257	0	0	0	409	1,289	0	0	1,127	519	*3,755*
05:00 PM	---	06:00 PM	133	0	256	0	0	0	409	1,196	0	0	1,095	483	*3,572*

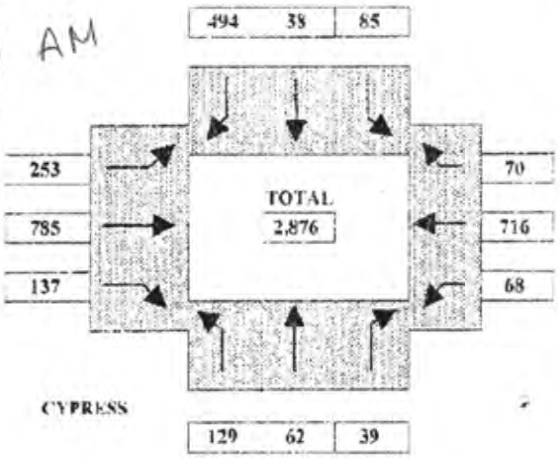
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

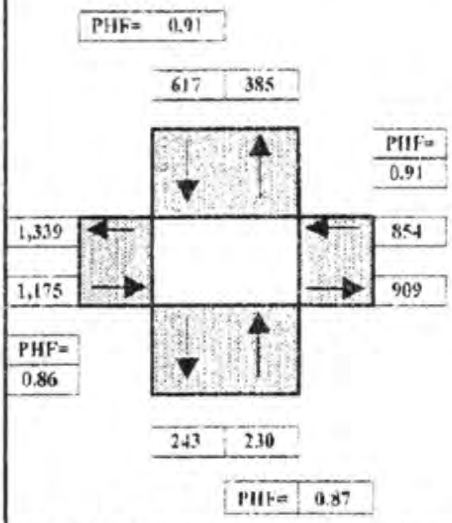
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	HILLTOP	SURVEY TIME: 7:00 AM TO 9:00 AM	
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CPHTRDAM

PEAK HOUR
08:00 AM TO 09:00 AM

34 AM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From	To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA														
07:00 AM	07:15 AM	18	8	6	15	2	72	37	166	19	4	110	10	*467*
07:15 AM	07:30 AM	41	19	16	35	6	157	83	368	47	15	241	27	*1,055*
07:30 AM	07:45 AM	62	31	31	51	11	251	135	580	80	22	394	49	*1,697*
07:45 AM	08:00 AM	86	48	39	64	21	366	196	813	126	34	568	65	*2,426*
08:00 AM	08:15 AM	106	61	51	82	28	472	266	1,017	168	52	725	85	*3,113*
08:15 AM	08:30 AM	134	81	58	104	36	605	324	1,228	203	65	894	100	*3,832*
08:30 AM	08:45 AM	173	96	70	130	50	734	387	1,402	231	85	1,083	119	*4,560*
08:45 AM	09:00 AM	215	110	78	149	59	860	449	1,598	263	102	1,284	135	*5,302*
TOTAL BY PERIOD														
07:00 AM	07:15 AM	18	8	6	15	2	72	37	166	19	4	110	10	*467*
07:15 AM	07:30 AM	23	11	10	20	4	85	46	202	28	11	131	17	*588*
07:30 AM	07:45 AM	21	12	15	16	5	94	52	212	33	7	153	22	*642*
07:45 AM	08:00 AM	24	17	8	13	10	115	61	233	46	12	174	16	*729*
08:00 AM	08:15 AM	20	13	12	18	7	106	70	204	42	18	157	20	*687*
08:15 AM	08:30 AM	28	20	7	22	8	133	58	211	35	13	169	15	*719*
08:30 AM	08:45 AM	39	15	12	26	14	129	63	174	28	20	189	19	*728*
08:45 AM	09:00 AM	42	14	8	19	9	126	62	196	32	17	201	16	*742*
HOURLY TOTALS														
07:00 AM	08:00 AM	86	48	39	64	21	366	196	813	126	34	568	65	*2,426*
07:15 AM	08:15 AM	88	53	45	67	26	400	229	851	149	48	615	75	*2,646*
07:30 AM	08:30 AM	93	62	42	69	30	448	241	860	156	50	653	73	*2,777*
07:45 AM	08:45 AM	111	65	39	79	39	483	252	822	151	63	689	70	*2,863*
08:00 AM	09:00 AM	129	62	29	85	38	494	253	785	137	68	716	70	*2,876*

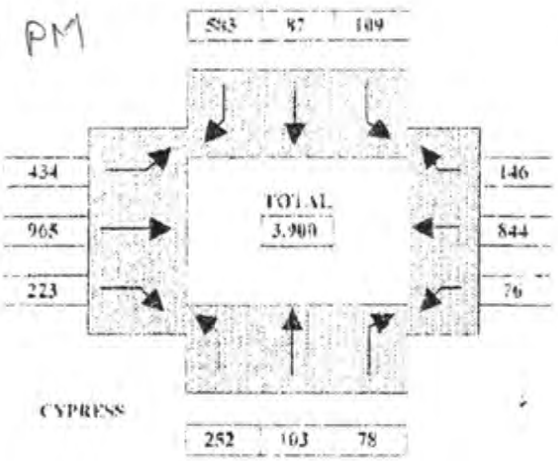
BAYMETRICS TRAFFIC RESOURCES

INTERSECTION TURNING MOVEMENT SUMMARY

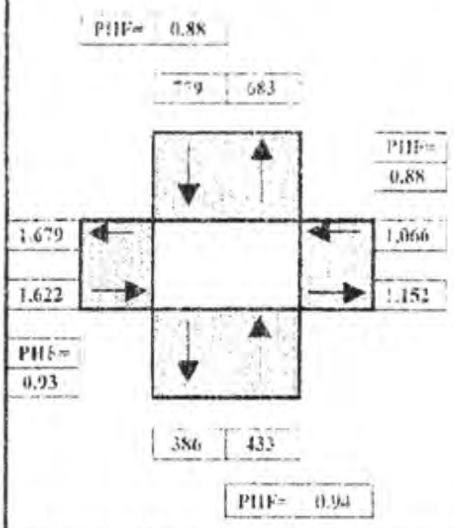
PROJECT:	REDDING TS	SURVEY DATE: 9/12/2006	DAY: TUESDAY
N-S Approach:	HILLTOP	SURVEY TIME: 4:00 PM TO 6:00 PM	
E-W Approach:	CYPRESS	CITY: REDDING	FILE: CPHTRDPM

PEAK HOUR
04:15 PM TO 05:15 PM

(34) PM



ARRIVAL / DEPARTURE VOLUMES



TIME PERIOD From		To	NORTHBOUND Left	Thru	Right	SOUTHBOUND Left	Thru	Right	EASTBOUND Left	Thru	Right	WESTBOUND Left	Thru	Right	TOTAL
SURVEY DATA															
04:00 PM	---	04:15 PM	56	19	17	25	18	123	105	242	42	13	206	34	*900*
04:15 PM	---	04:30 PM	120	44	41	56	40	278	218	513	94	30	425	74	*1,933*
04:30 PM	---	04:45 PM	183	65	61	90	61	445	313	715	155	51	661	119	*2,949*
04:45 PM	---	05:00 PM	238	95	77	116	87	581	419	966	203	67	871	152	*3,872*
05:00 PM	---	05:15 PM	308	122	95	134	105	706	539	1,207	265	89	1,050	180	*4,800*
05:15 PM	---	05:30 PM	373	144	120	158	128	843	627	1,423	322	107	1,220	204	*5,671*
05:30 PM	---	05:45 PM	446	162	139	180	150	988	731	1,622	380	13	1,422	226	*6,577*
05:45 PM	---	06:00 PM	508	185	161	205	170	1,122	813	1,806	430	148	1,602	244	*7,394*
TOTAL BY PERIOD															
04:00 PM	---	04:15 PM	56	19	17	25	18	23	105	242	42	13	206	34	*900*
04:15 PM	---	04:30 PM	64	25	24	31	22	155	113	271	52	17	219	40	*1,933*
04:30 PM	---	04:45 PM	63	21	20	34	21	167	95	252	61	21	236	45	*1,016*
04:45 PM	---	05:00 PM	55	30	16	26	26	136	106	221	48	16	210	33	*923*
05:00 PM	---	05:15 PM	70	27	18	18	18	125	120	241	62	22	179	28	*928*
05:15 PM	---	05:30 PM	65	22	25	24	23	139	88	216	57	18	170	24	*871*
05:30 PM	---	05:45 PM	73	18	19	22	22	145	104	199	58	24	202	22	*906*
05:45 PM	---	06:00 PM	62	23	22	25	20	134	82	184	50	17	180	18	*817*
HOURLY TOTALS															
04:00 PM	---	05:00 PM	238	95	77	116	87	581	419	966	203	67	871	152	*3,872*
04:15 PM	---	05:15 PM	252	103	78	109	87	583	434	965	223	76	844	146	*3,900*
04:30 PM	---	05:30 PM	253	100	79	102	88	567	409	910	228	77	795	130	*3,738*
04:45 PM	---	05:45 PM	263	97	78	90	89	543	418	877	225	80	761	107	*3,628*
05:00 PM	---	06:00 PM	270	90	84	89	85	541	544	840	227	81	731	92	*3,522*

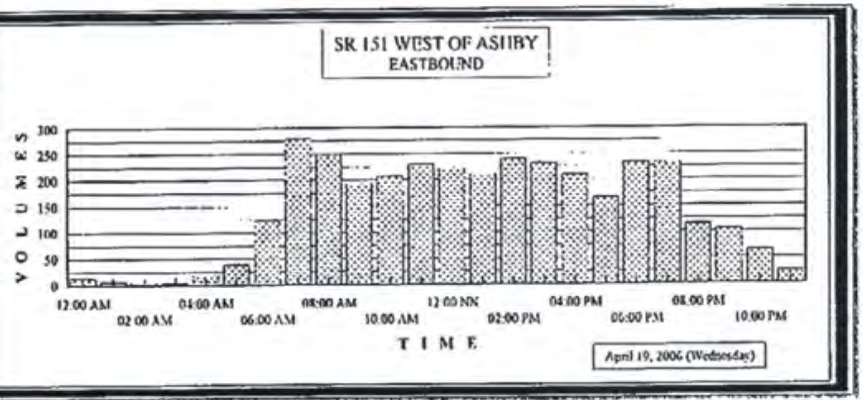
B . A . Y . M . E . T . R . I . C . S

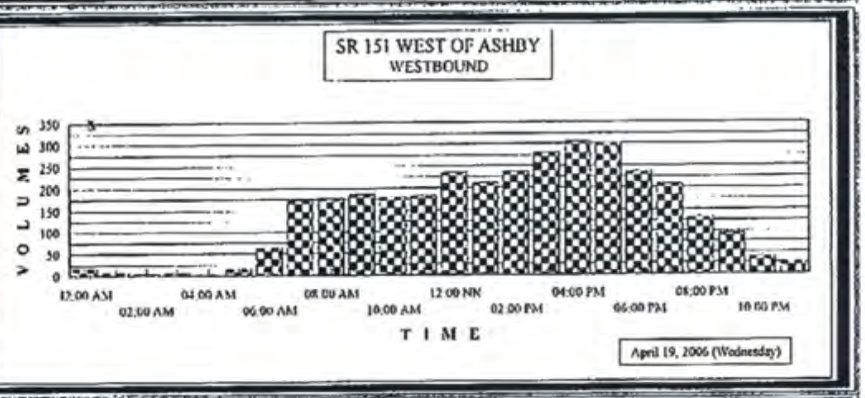
DAILY TUBE COUNT SUMMARY

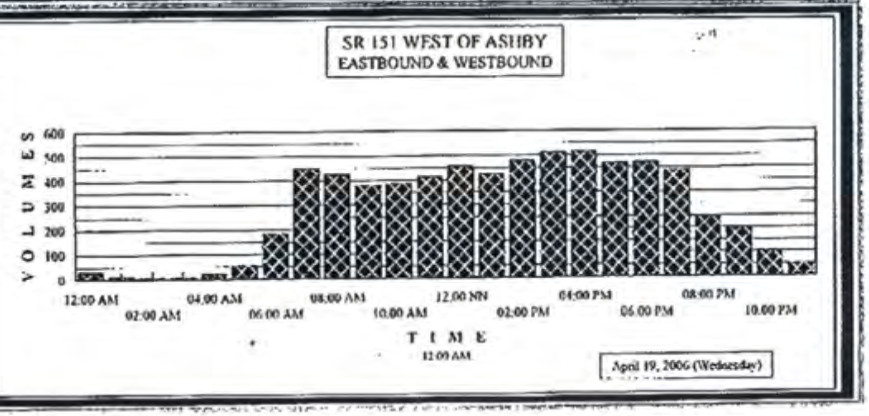
PROJECT:	SHASTA LAKE ADT	RECORDER SET:	04 / 18 / 2006
LOCATION:	SR 151 WEST OF ASHBY	RECORDER START:	04 / 19 / 2006
DIRECTION:	EASTBOUND & WESTBOUND	RECORDER END:	04 / 20 / 2006
CITY:	SHASTA LAKE	MACHINE ID:	M-3140

TIME	EASTBOUND 00:00	00:15	00:30	00:45	TOT	WESTBOUND 00:00	00:15	00:30	00:45	TOT	EB & WB 00:00	00:15	00:30	00:45	TOT
April 19, 2006 (Wednesday)															
12:00 AM	2	4	6	1	13	4	5	4	5	18	6	9	10	6	31
01:00 AM	5	1	0	0	6	4	1	3	0	8	9	2	3	0	14
02:00 AM	1	0	2	2	5	3	1	1	0	5	4	1	3	2	10
03:00 AM	0	2	0	1	3	3	0	2	1	6	3	2	2	2	9
04:00 AM	2	4	6	7	19	1	1	1	1	4	3	5	7	8	23
05:00 AM	4	4	10	21	39	3	2	3	9	17	7	6	13	30	56
06:00 AM	11	31	45	36	123	9	16	18	21	64	20	47	63	57	187
07:00 AM	51	66	90	73	280	26	41	48	58	173	77	107	138	131	453
08:00 AM	67	71	52	58	248	48	44	43	43	178	115	115	95	101	426
09:00 AM	48	44	43	58	193	46	40	58	43	187	94	84	101	101	380
10:00 AM	48	56	48	55	207	45	47	39	50	181	93	103	87	105	388
11:00 AM	63	50	63	53	229	47	53	53	32	185	110	103	116	85	414
12:00 NN	52	44	60	66	222	74	57	57	48	236	126	101	117	114	458
01:00 PM	44	61	57	49	211	46	49	64	53	212	90	110	121	102	423
02:00 PM	70	58	47	64	239	52	64	52	70	238	122	122	99	134	477
03:00 PM	50	57	64	60	231	81	51	85	64	281	131	108	149	124	512
04:00 PM	53	47	51	59	210	82	69	72	82	305	135	116	123	141	515
05:00 PM	37	44	44	41	166	80	77	76	69	302	117	121	120	110	468
06:00 PM	43	64	65	60	232	64	69	55	49	237	107	133	120	109	469
07:00 PM	47	64	78	43	232	52	62	52	42	208	99	126	130	85	440
08:00 PM	34	31	26	23	114	37	33	33	29	132	71	64	59	52	246
09:00 PM	25	27	32	21	105	29	18	27	21	95	54	45	59	42	200
10:00 PM	10	24	20	9	63	15	11	7	7	40	25	35	27	16	103
11:00 PM	8	6	8	2	24	7	9	6	5	27	15	15	14	7	51
TOTAL:					3,414					3,339					6,753
AM PEAK HR. (6 AM - 11 AM):					280					187					453
NOON PEAK HR. (11 AM - 4 PM):					239					281					512
PM PEAK HR. (4 PM - 7 PM):					232					305					515

Contra Costa County: (510) 232-1271 SF/Peninsula: (415) 750-1317 Alameda County: (510) 233-2292







May 01 06 11:38a Baymetrics 5102321272 p.4
CASATA 45-7335-01 T1037 TC 002.pdf

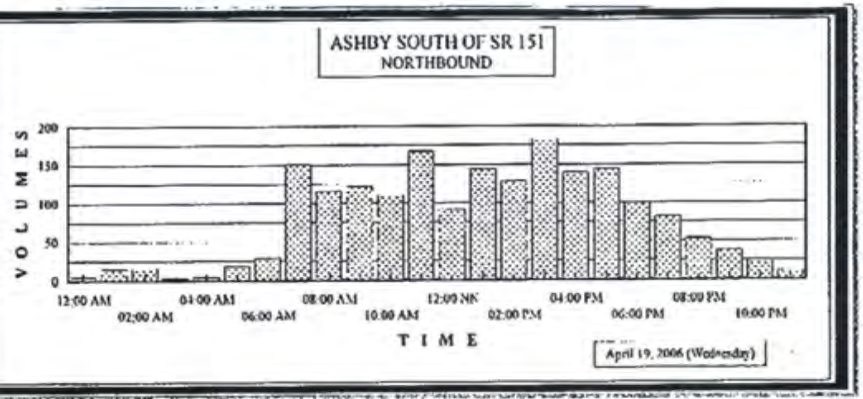
B . A . Y . M . E . T . R . I . C . S

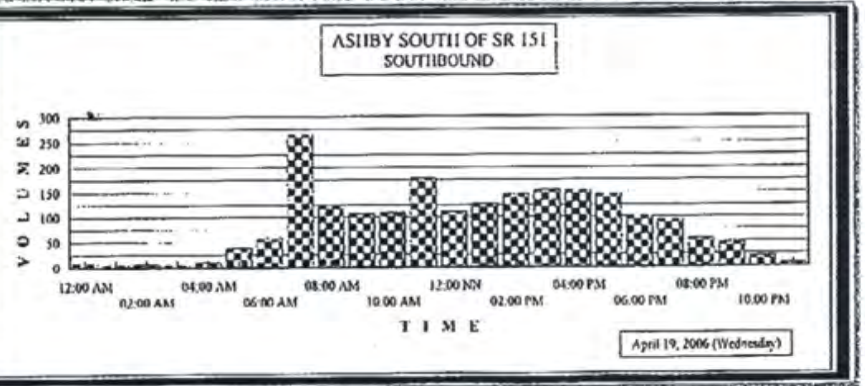
DAILY TUBE COUNT SUMMARY

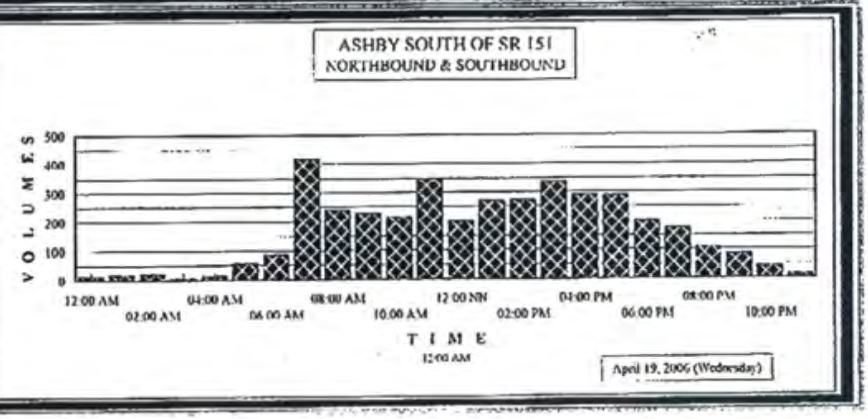
PROJECT:	SHASTA LAKE ADT	RECORDER SET:	04 / 18 / 2006
LOCATION:	ASHBY SOUTH OF SR 151	RECORDER START:	04 / 19 / 2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	04 / 20 / 2006
CITY:	SHASTA LAKE	MACHINE ID:	M-2741

	NORTHBOUND					SOUTHBOUND					NB & SB				
TIME	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
April 19, 2006 (Wednesday)															
12:00 AM	1	4	0	0	5	1	2	5	1	9	2	6	5	1	14
01:00 AM	3	2	8	2	15	0	0	4	1	5	3	2	12	3	20
02:00 AM	12	3	1	0	16	1	3	3	0	7	13	6	4	0	23
03:00 AM	0	1	1	1	3	2	1	0	2	5	2	2	1	3	8
04:00 AM	0	1	2	2	5	0	4	3	3	10	0	5	5	5	15
05:00 AM	0	0	10	9	19	4	8	13	12	37	4	8	23	21	56
06:00 AM	4	7	8	10	29	14	10	17	17	58	18	17	25	27	87
07:00 AM	19	35	54	43	131	33	58	124	51	266	52	93	178	94	417
08:00 AM	25	32	29	30	116	26	36	30	32	124	51	68	59	62	240
09:00 AM	37	26	31	28	122	31	25	24	27	107	68	51	55	55	229
10:00 AM	26	28	32	24	110	27	28	19	34	108	53	56	51	58	218
11:00 AM	50	36	48	33	167	51	38	50	40	179	101	74	98	73	346
12:00 NN	27	19	20	25	91	33	30	26	22	111	60	49	46	47	202
01:00 PM	27	44	39	34	144	30	32	38	28	128	57	76	77	62	272
02:00 PM	23	39	34	32	128	35	40	31	40	146	58	79	65	72	274
03:00 PM	78	46	28	31	183	45	39	39	32	155	123	85	67	63	338
04:00 PM	28	44	34	33	139	37	42	43	31	153	65	86	77	64	292
05:00 PM	40	46	32	26	144	54	30	30	32	146	94	76	62	58	290
06:00 PM	29	21	21	29	100	30	19	26	26	101	59	40	47	55	201
07:00 PM	28	21	19	14	82	28	26	25	15	94	56	47	44	29	176
08:00 PM	16	10	13	14	53	16	12	17	11	56	32	22	30	25	109
09:00 PM	11	7	13	7	38	13	15	10	10	48	24	22	23	17	86
10:00 PM	11	5	2	5	23	7	5	4	5	21	18	10	6	10	44
11:00 PM	5	1	1	4	11	4	1	0	1	6	9	2	1	5	17
TOTAL:					1,894					2,080					3,974
AM PEAK HR. (6 AM - 11 AM):					167					266					417
NOON PEAK HR. (11 AM - 4 PM):					183					155					338
PM PEAK HR. (4 PM - 7 PM):					144					153					292

Contra Costa County: (510) 232-1271 SF/Peninsula: (415) 750-1317 Alameda County: (510) 233-2292







May 01 06 11:37a Baymetrics 5102321272 p.3
LASATA 45-7335-01 T103TC003.pdf

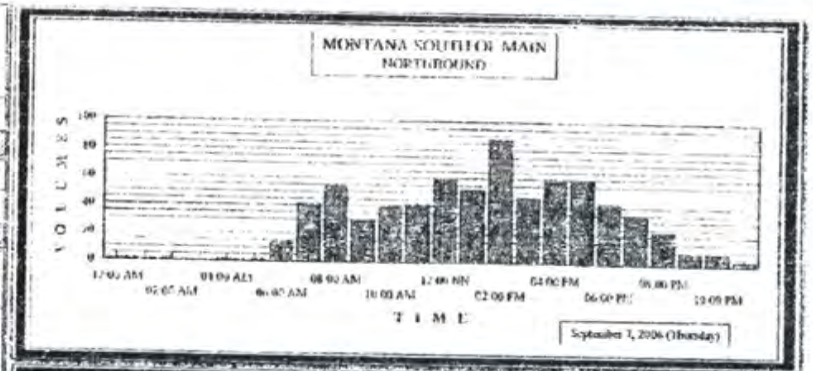
B . A . Y . M . E . T . R . I . C . S

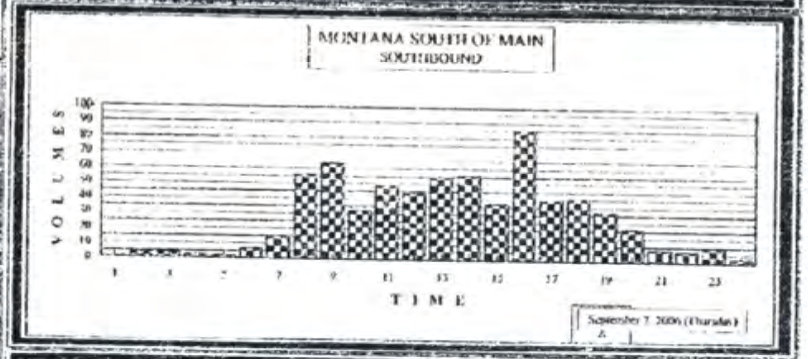
DAILY TUBE COUNT SUMMARY

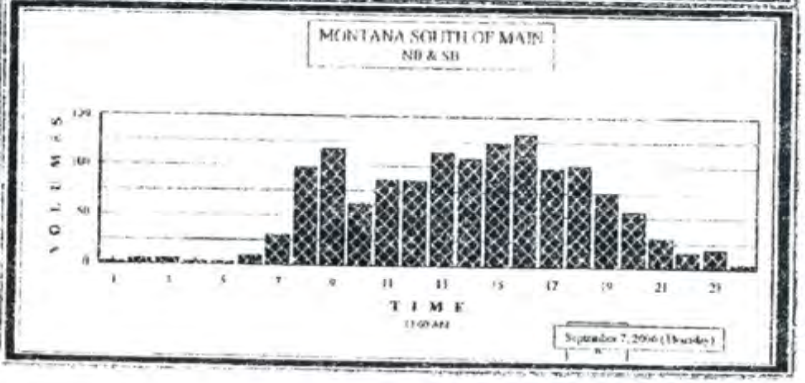
(1)

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	MONTANA SOUTH OF MAIN	RECORDER START:	9/7/2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-2229

	NORTHBOUND					SOUTHBOUND					NB & SB				
TIME	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	0	1	0	0	1	0	0	0	1	1	0	1	0	1	2
01:00 AM	0	1	0	0	1	1	2	0	0	3	2	3	0	0	5
02:00 AM	0	0	1	1	2	1	3	0	0	4	1	3	1	1	6
03:00 AM	0	0	0	0	0	0	1	1	1	3	0	1	1	1	3
04:00 AM	0	0	1	0	1	0	0	2	0	2	0	0	3	0	3
05:00 AM	0	2	0	0	2	4	1	0	2	7	4	3	0	2	9
06:00 AM	1	2	6	6	15	3	2	6	4	15	4	4	12	10	30
07:00 AM	4	7	11	20	42	9	11	15	21	56	13	18	26	41	98
08:00 AM	18	15	9	12	54	25	17	9	12	63	43	32	18	24	117
09:00 AM	7	11	6	6	30	5	8	14	5	32	12	19	20	11	62
10:00 AM	8	14	7	10	39	10	10	16	13	49	18	24	23	23	88
11:00 AM	13	5	9	15	42	5	8	18	13	44	18	13	27	28	86
12:00 NN	17	20	9	14	60	18	16	9	12	55	35	36	18	26	115
01:00 PM	12	8	11	21	52	25	12	9	10	56	37	20	20	31	108
02:00 PM	22	16	31	19	88	8	8	7	14	37	30	24	38	33	125
03:00 PM	14	8	13	12	47	25	31	12	18	86	39	39	25	30	133
04:00 PM	7	15	16	20	58	5	10	10	15	40	12	25	26	35	98
05:00 PM	14	13	18	16	69	9	6	14	12	41	23	19	32	28	101
06:00 PM	15	9	14	7	45	5	8	7	12	32	18	17	21	19	73
07:00 PM	12	8	8	7	35	5	6	6	4	21	17	14	14	11	56
08:00 PM	11	5	4	3	23	3	0	2	4	8	13	5	6	7	31
09:00 PM	6	2	0	1	9	2	3	2	0	7	8	5	2	1	16
10:00 PM	4	2	0	3	9	5	2	1	2	10	9	4	1	5	19
11:00 PM	2	1	0	1	4	0	1	2	0	3	2	1	3	0	6
TOTAL:					716					676					1,392
AM PEAK HR (6 AM - 11 AM):					54					63					117
NOON PEAK HR (11 AM - 4 PM):					88					86					133
PM PEAK HR (4 PM - 7 PM):					60					41					101







East Bay: (510) 232-1271 SF Peninsula: (415) 750-1317

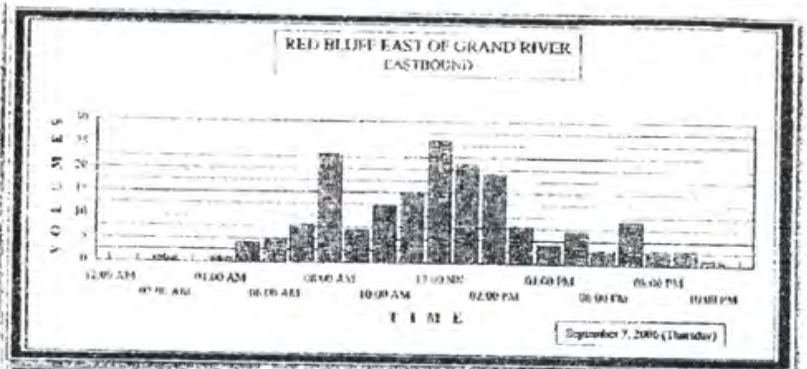
B . A . Y . M . E . T . R . I . C . S

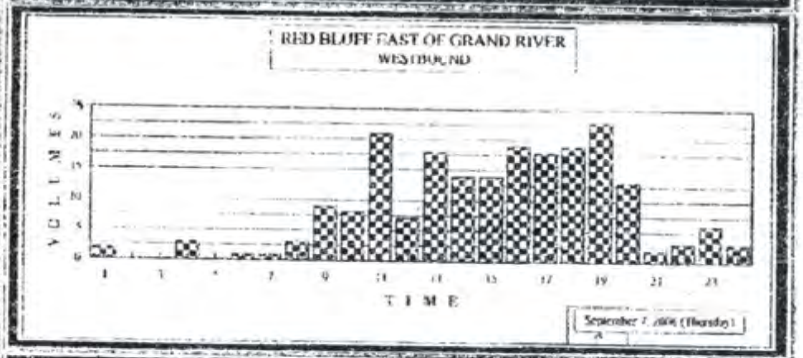
DAILY TUBE COUNT SUMMARY

(2)

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	RED BLUFF EAST OF GRAND RIVER	RECORDER START:	9/7/2006
DIRECTION:	EASTBOUND & WESTBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-1630

TIME	EASTBOUND					WESTBOUND					EB & WB				
	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	0	0	0	0	0	1	0	0	1	2	1	0	0	1	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
03:00 AM	0	0	0	0	0	2	0	0	1	3	2	0	0	1	3
04:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1
05:00 AM	1	0	0	3	4	1	0	0	0	1	2	0	0	3	5
06:00 AM	0	1	2	2	5	0	1	0	0	1	0	2	2	2	6
07:00 AM	1	4	0	3	8	1	0	0	2	3	2	4	0	5	11
08:00 AM	8	10	0	5	23	2	5	1	0	9	10	15	1	5	32
09:00 AM	1	2	4	0	7	2	4	2	0	8	3	6	6	0	15
10:00 AM	1	3	6	2	12	6	3	6	6	21	7	6	12	8	33
11:00 AM	0	7	2	6	15	2	0	1	4	7	2	7	3	10	22
12:00 NN	4	5	5	12	26	2	6	5	5	18	6	11	10	17	44
01:00 PM	9	0	8	4	21	2	0	8	1	11	11	0	16	8	35
02:00 PM	2	4	4	10	19	2	2	0	10	14	4	6	3	20	33
03:00 PM	5	2	0	1	8	7	2	5	0	19	12	0	5	1	27
04:00 PM	6	2	2	0	4	0	6	3	0	18	9	8	5	0	22
05:00 PM	2	0	2	2	7	8	2	5	4	19	11	2	7	6	26
06:00 PM	0	1	2	0	5	6	3	7	7	21	6	4	9	7	26
07:00 PM	4	4	1	0	9	2	4	5	2	13	6	8	6	2	22
08:00 PM	0	2	0	1	3	0	1	1	0	2	0	3	1	1	5
09:00 PM	1	0	0	2	3	2	0	0	1	3	3	0	0	3	6
10:00 PM	0	0	0	1	1	2	0	3	1	6	2	0	3	2	7
11:00 PM	0	0	0	0	0	2	0	1	0	3	2	0	1	0	3
TOTAL:					180					207					387
AM PEAK HR. (6 AM - 11 AM):					23					21					33
NOON PEAK HR. (11 AM - 4 PM):					26					19					44
PM PEAK HR. (4 PM - 7 PM):					9					25					26







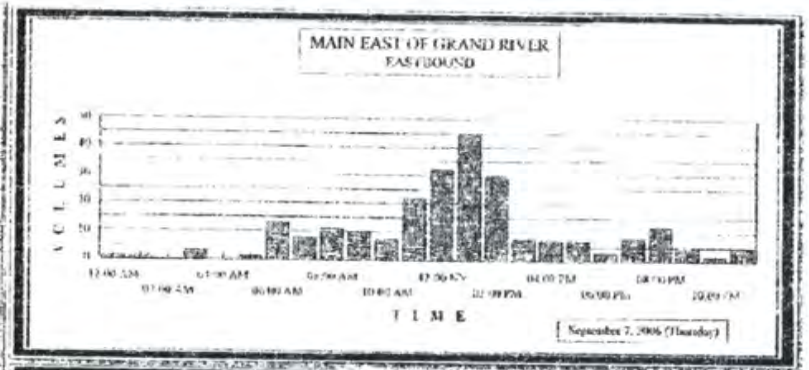
B . A . Y . M . E . T . R . I . C . S

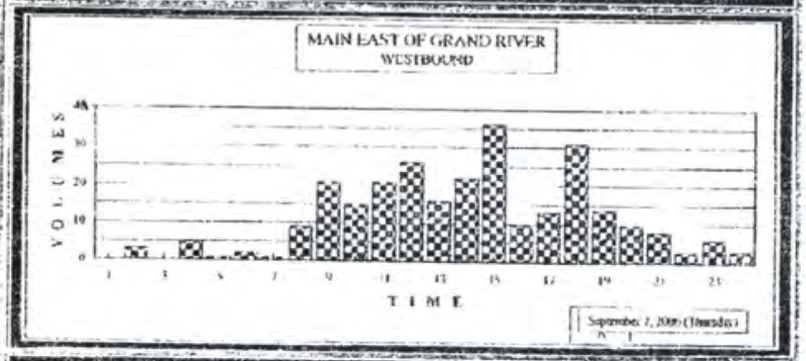
DAILY TUBE COUNT SUMMARY

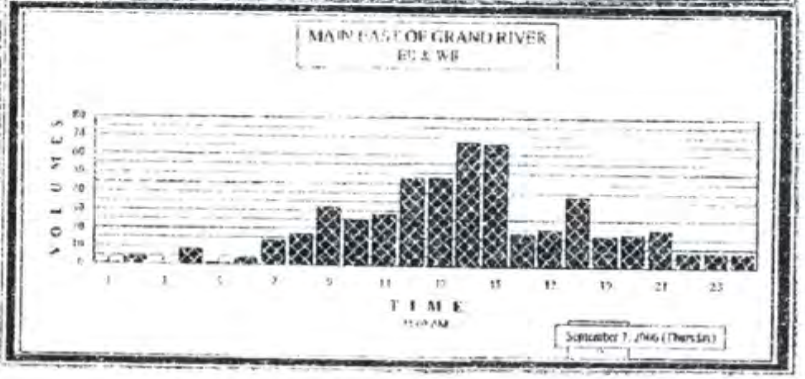
(3)

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	MAIN EAST OF GRAND RIVER	RECORDER START:	9/7/2006
DIRECTION:	EASTBOUND & WESTBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-1630

TIME	EASTBOUND					WESTBOUND					EB & WB				
	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
01:00 AM	0	0	1	0	1	1	1	1	0	3	1	1	2	0	4
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	2	1	3	0	0	3	2	5	0	0	5	3	8
04:00 AM	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1
05:00 AM	0	1	0	0	1	0	0	0	2	2	0	1	0	2	3
06:00 AM	3	1	1	2	13	0	1	0	0	1	3	5	1	2	14
07:00 AM	0	1	1	6	8	1	2	0	6	9	1	3	1	12	17
08:00 AM	3	5	1	2	11	2	4	10	5	21	5	9	11	7	32
09:00 AM	0	2	4	4	10	4	1	0	9	15	4	4	4	13	25
10:00 AM	2	0	3	2	7	3	2	10	6	21	5	2	13	8	28
11:00 AM	0	7	7	8	22	6	8	8	4	26	6	15	15	12	48
12:00 NN	6	9	12	5	32	2	0	3	11	16	8	9	15	16	48
01:00 PM	8	14	5	18	45	5	2	10	5	22	13	16	15	23	67
02:00 PM	9	10	5	6	30	4	17	9	6	36	13	27	14	12	66
03:00 PM	3	2	1	2	8	2	5	1	2	10	5	7	2	4	18
04:00 PM	0	2	1	4	7	6	7	2	4	13	6	9	3	8	20
05:00 PM	4	2	0	1	7	10	5	8	8	31	14	7	8	9	38
06:00 PM	2	0	0	1	3	1	6	6	1	14	3	6	6	2	17
07:00 PM	3	3	2	0	8	4	0	1	5	10	7	3	3	5	18
08:00 PM	4	6	2	0	12	5	0	1	2	8	9	6	3	2	20
09:00 PM	1	2	3	0	3	0	0	1	2	3	1	2	3	3	8
10:00 PM	1	1	0	0	2	2	0	1	3	6	3	1	1	3	8
11:00 PM	3	2	0	0	5	2	0	1	0	3	5	2	1	0	8
TOTAL:					241					276					517
AM PEAK HR. (6 AM - 11 AM):					22					26					48
NOON PEAK HR. (11 AM - 4 PM):					45					36					67
PM PEAK HR. (4 PM - 7 PM):					8					31					38







East Bay: (510) 232-1271 *SF/Peninsula: (415) 750-1317*

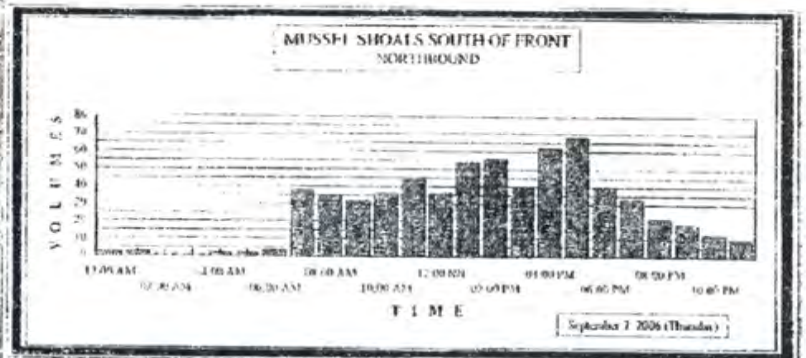
B . A . Y . M . E . T . R . I . C . S

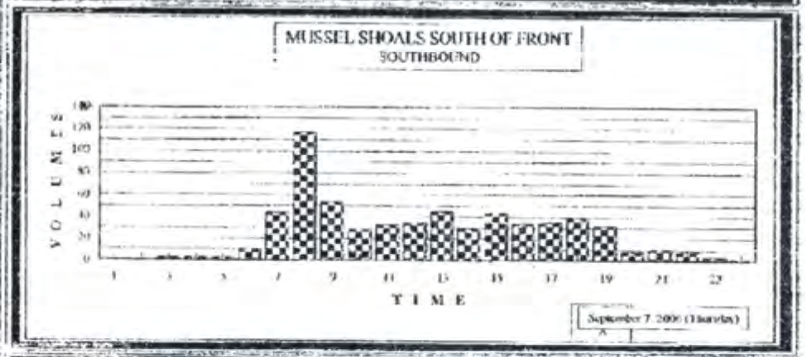
DAILY TUBE COUNT SUMMARY

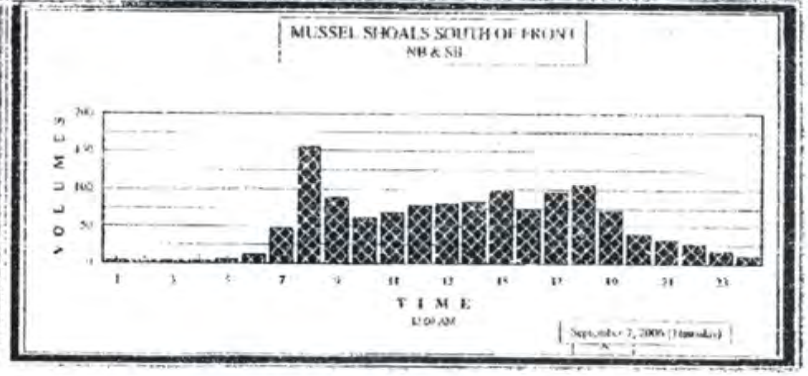
(4)

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	MUSSEL SHOALS SOUTH OF FRONT	RECORDER START:	9/7/2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-1977

	NORTHBOUND					SOUTHBOUND					NB & SB				
TIME:	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	1	1	0	0	2	0	0	1	0	1	1	1	1	0	3
01:00 AM	2	1	0	0	3	0	0	0	1	1	2	1	0	1	4
02:00 AM	0	0	1	0	1	0	0	0	3	3	0	0	1	3	4
03:00 AM	0	1	0	0	1	0	0	1	2	3	0	1	1	2	4
04:00 AM	0	1	1	0	2	2	0	0	1	3	2	1	1	1	5
05:00 AM	0	0	2	0	2	0	0	3	7	10	0	0	5	7	12
06:00 AM	1	1	9	2	4	6	11	9	18	44	7	12	9	20	48
07:00 AM	7	7	10	14	38	21	29	42	25	117	28	36	32	39	155
08:00 AM	9	13	6	7	35	18	9	12	14	53	27	22	18	21	88
09:00 AM	7	8	12	5	32	7	11	5	6	29	14	19	17	11	61
10:00 AM	7	14	5	10	36	6	6	9	12	33	13	20	14	22	69
11:00 AM	10	12	8	14	44	8	7	14	6	35	18	19	22	20	79
12:00 NN	4	6	11	15	36	9	13	8	15	45	13	19	19	30	81
01:00 PM	9	7	12	26	54	5	3	11	10	29	14	10	23	36	83
02:00 PM	18	15	9	10	36	5	17	13	9	44	23	32	22	23	100
03:00 PM	5	8	11	16	40	6	16	5	7	34	11	24	16	23	74
04:00 PM	12	20	15	15	62	9	11	5	10	35	21	31	20	25	97
05:00 PM	17	18	16	17	68	9	12	10	8	39	26	30	26	25	107
06:00 PM	12	8	14	6	40	8	13	6	5	32	20	21	20	11	72
07:00 PM	13	6	10	4	33	2	4	2	0	8	15	10	12	4	41
08:00 PM	9	9	2	2	22	3	2	5	1	11	12	11	7	3	33
09:00 PM	6	5	4	1	19	2	0	2	4	8	8	5	6	5	27
10:00 PM	4	3	3	3	13	1	1	0	2	4	5	4	3	5	17
11:00 PM	5	2	1	1	9	0	0	2	0	2	5	2	3	1	11
TOTAL:					652					623					1,275
AM PEAK HR. (6 AM - 11 AM):					44					117					155
NOON PEAK HR. (11 AM - 4 PM):					56					45					100
PM PEAK HR. (4 PM - 7 PM):					68					39					102







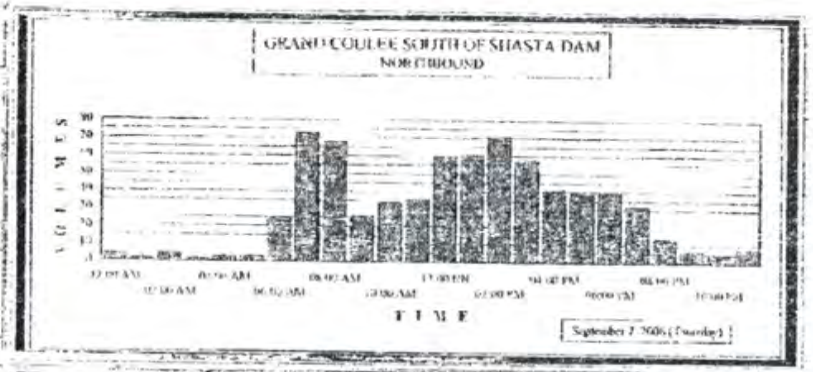
B . A . Y . M . E . T . R . I . C . S

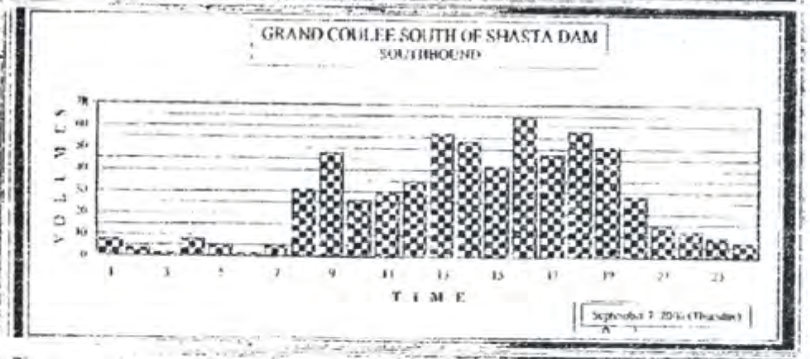
DAILY TUBE COUNT SUMMARY

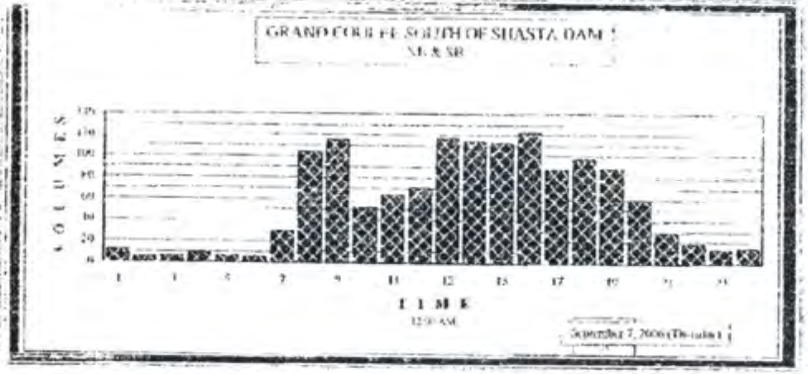
(5)

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	GRAND COULEE SOUTH OF SHASTA DA	RECORDER START:	9/7/2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	9/8/2006
CITY:	SHASTA LAKE	MACHINE ID:	M-5388

TIME	NORTHBOUND 00:00	00:15	00:30	00:45	TOT	SOUTHBOUND 00:00	00:15	00:30	00:45	TOT	NB & SB 00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	1	0	2	1	4	3	3	2	0	8	4	3	4	1	12
01:00 AM	0	0	0	1	1	1	2	0	1	4	1	2	0	2	5
02:00 AM	0	0	3	2	5	2	0	0	0	2	2	0	3	2	7
03:00 AM	0	0	1	0	1	1	1	1	1	4	1	1	2	1	5
04:00 AM	0	0	1	1	2	0	0	3	2	5	0	0	4	3	7
05:00 AM	2	0	1	0	3	0	0	1	1	2	2	0	2	1	5
06:00 AM	4	8	8	5	25	0	2	2	1	5	4	10	10	6	30
07:00 AM	10	16	16	31	73	4	8	7	12	31	14	24	23	43	104
08:00 AM	25	22	14	7	68	17	12	8	11	48	42	34	22	18	116
09:00 AM	10	5	4	7	26	5	4	6	11	26	15	9	10	18	52
10:00 AM	10	13	6	5	34	5	8	12	5	30	15	21	18	10	64
11:00 AM	8	12	11	5	36	6	5	14	10	35	13	17	25	15	71
12:00 NN	12	15	20	13	60	13	20	15	9	57	25	35	35	22	117
01:00 PM	9	14	22	16	61	16	12	8	17	53	25	26	30	32	113
02:00 PM	13	8	24	26	71	8	14	9	11	42	21	22	33	37	113
03:00 PM	16	10	15	12	53	17	25	13	10	65	30	35	28	22	115
04:00 PM	13	8	12	6	41	12	11	8	16	47	27	19	20	22	88
05:00 PM	8	7	10	14	39	13	10	20	15	58	21	17	30	29	97
06:00 PM	9	13	12	5	39	12	8	14	17	51	21	21	26	22	90
07:00 PM	8	7	6	11	32	5	8	6	9	28	13	15	12	20	60
08:00 PM	5	4	3	2	14	5	2	4	4	15	10	6	7	6	29
09:00 PM	0	1	3	3	7	7	2	0	3	12	7	3	4	3	19
10:00 PM	0	3	2	0	5	2	5	2	0	9	2	8	4	0	14
11:00 PM	2	2	0	1	5	1	4	2	0	7	0	6	2	1	12
TOTAL:					713					648					1,361
AM PEAK HR. (6 AM - 11 AM):					73					48					116
NOON PEAK HR. (11 AM - 4 PM):					71					65					123
PM PEAK HR. (4 PM - 7 PM):					41					58					97







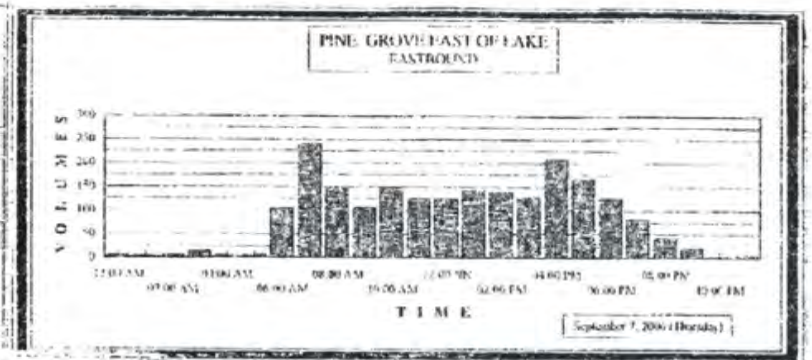
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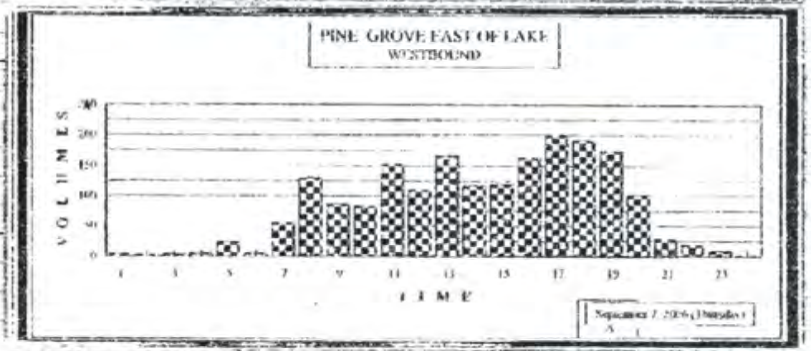
B . A . Y . M . E . T . R . I . C . S

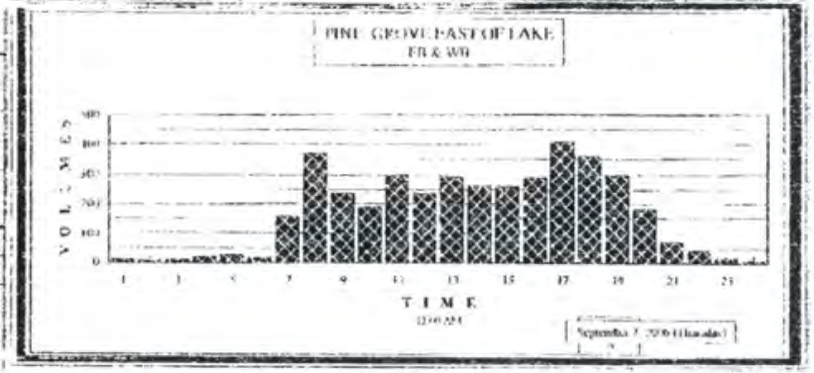
DAILY TUBE COUNT SUMMARY

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	PINE GROVE EAST OF LAKE	RECORDER START:	9/7/2006
DIRECTION:	EASTBOUND & WESTBOUND	RECORDER END:	9/8/2006
CITY:	SHASTA LAKE	MACHINE ID	M-3279

TIME	EASTBOUND 00-00	00-15	00-30	00-45	TOT	WESTBOUND 00-00	00-15	00-30	00-45	TOT	EB & WB 00-00	00-15	00-30	00-45	TOT
September 7, 2006 (Thursday)															
12:00 AM	2	2	1	0	5	1	3	0	2	6	3	5	1	2	11
01:00 AM	0	2	1	0	3	1	3	0	1	5	1	4	1	2	8
02:00 AM	0	3	2	0	5	0	4	1	1	6	0	7	3	1	11
03:00 AM	1	0	1	1	3	2	0	3	2	7	3	0	4	3	10
04:00 AM	0	3	3	0	6	1	16	5	2	24	1	19	8	2	30
05:00 AM	4	2	0	3	9	4	0	2	1	7	8	2	2	4	16
06:00 AM	16	17	25	46	104	3	22	19	13	57	19	39	44	59	161
07:00 AM	39	49	82	72	242	18	29	45	38	130	57	78	127	110	372
08:00 AM	46	58	36	31	171	25	21	22	19	87	71	79	58	50	258
09:00 AM	49	25	22	19	106	17	26	24	18	85	57	51	46	37	191
10:00 AM	42	35	38	33	148	34	46	41	33	154	76	81	79	66	302
11:00 AM	18	30	36	40	124	25	23	35	30	113	43	53	71	70	236
12:00 NN	41	22	38	24	125	46	38	52	30	166	87	60	90	54	291
01:00 PM	36	36	41	31	144	28	20	37	42	127	64	56	68	73	261
02:00 PM	48	25	28	40	139	36	28	25	30	119	82	53	53	70	258
03:00 PM	30	33	43	29	135	31	55	43	36	165	59	88	73	29	299
04:00 PM	45	52	63	48	208	39	47	52	63	201	84	99	115	111	409
05:00 PM	42	45	41	39	168	48	52	47	45	192	91	97	88	84	360
06:00 PM	34	30	35	28	127	47	46	39	42	174	81	76	74	70	301
07:00 PM	26	19	21	17	83	33	28	19	22	102	59	47	40	39	185
08:00 PM	15	8	11	8	42	13	7	6	3	29	28	15	20	8	71
09:00 PM	7	6	3	5	21	10	2	5	4	21	17	8	8	9	42
10:00 PM	2	1	0	2	5	6	2	2	0	10	8	3	2	2	15
11:00 PM	1	2	0	3	6	0	1	0	2	3	1	3	0	5	9
TOTALS					*2,113*					*1,978*					*4,091*
AM PEAK HR. (8 AM - 11 AM):					*242*					*154*					*372*
NOON PEAK HR. (11 AM - 4 PM):					*144*					*166*					*293*
PM PEAK HR. (4 PM - 7 PM):					*208*					*201*					*409*







B . A . Y . M . E . T . R . I . C . S

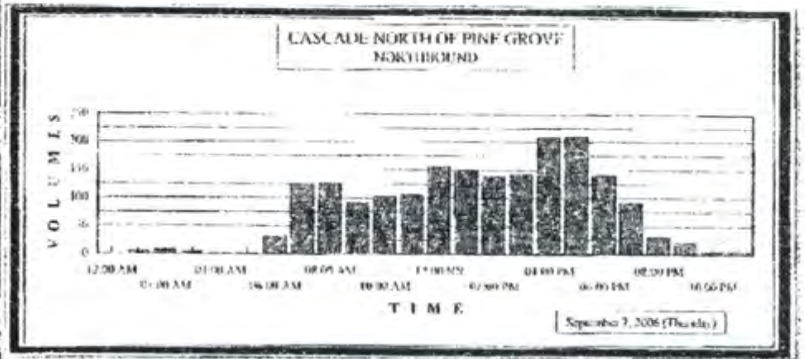
DAILY TUBE COUNT SUMMARY

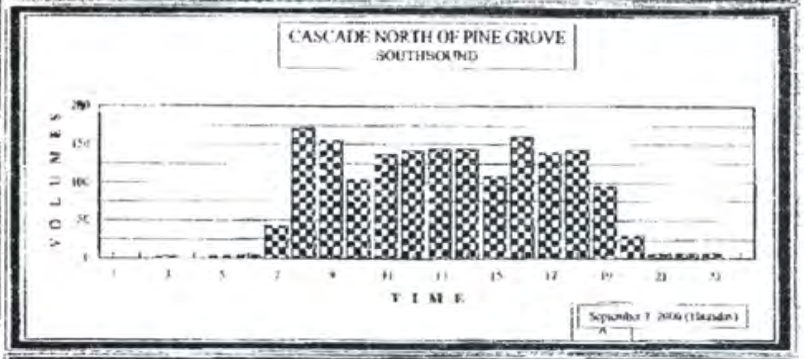
(7)

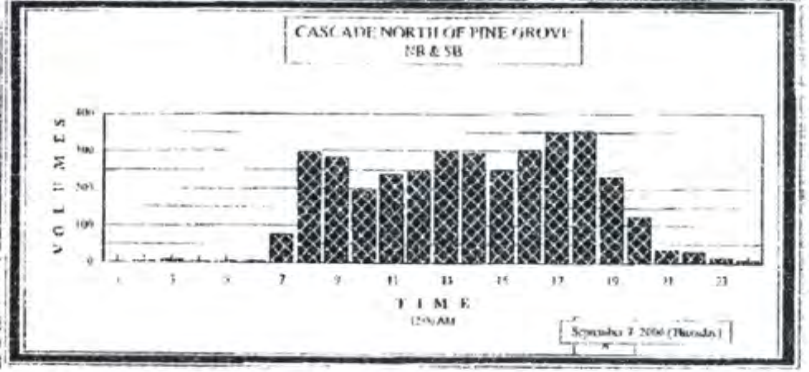
PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	CASCADE NORTH OF PINE GROVE	RECORDER START:	9/7/2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-1650

	NORTHBOUND					SOUTHBOUND					NB & SB				
TIME	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	0	1	0	0	1	0	0	0	1	1	0	1	0	1	2
01:00 AM	2	1	0	0	3	0	0	0	1	1	2	1	0	1	4
02:00 AM	3	2	0	1	6	1	0	0	1	3	5	2	0	2	9
03:00 AM	1	0	0	2	3	0	0	0	0	0	1	0	0	2	3
04:00 AM	0	0	1	0	1	0	2	2	0	4	0	2	3	0	5
05:00 AM	0	0	0	1	1	0	1	0	3	4	0	1	0	4	5
06:00 AM	4	2	17	9	32	9	5	12	18	44	13	7	29	27	76
07:00 AM	19	17	52	46	125	25	47	46	58	171	35	59	98	104	296
08:00 AM	41	29	31	25	126	50	43	35	28	156	91	72	66	53	282
09:00 AM	22	19	21	30	92	26	31	25	22	104	48	50	46	52	196
10:00 AM	28	18	26	30	102	34	42	33	28	137	62	60	59	58	239
11:00 AM	28	22	25	30	105	27	30	45	11	113	55	52	70	41	218
12:00 NN	45	37	35	40	157	39	34	38	34	145	84	71	73	74	302
01:00 PM	33	39	46	31	149	35	41	36	33	145	68	80	82	64	294
02:00 PM	28	26	33	52	139	29	22	30	28	109	57	48	63	80	248
03:00 PM	43	35	29	36	113	34	52	41	33	160	77	87	70	69	303
04:00 PM	42	52	63	52	209	35	49	29	17	131	77	92	92	89	350
05:00 PM	61	54	49	46	210	35	42	36	31	144	96	96	85	77	354
06:00 PM	41	33	38	29	141	28	26	20	22	96	69	59	58	51	237
07:00 PM	30	25	17	22	94	9	10	8	4	31	39	35	25	26	125
08:00 PM	16	9	4	2	31	3	2	0	2	7	19	11	4	4	38
09:00 PM	8	7	5	2	22	1	2	0	4	7	9	9	5	6	29
10:00 PM	1	2	0	3	6	2	0	3	2	7	3	2	3	5	13
11:00 PM	2	0	1	1	2	0	1	0	0	1	2	1	4	1	8
TOTAL:					1,905					1,701					3,606
AM PEAK HR. (6 AM - 11 AM):					126					171					296
NOON PEAK HR. (11 AM - 4 PM):					157					169					303
PM PEAK HR. (4 PM - 7 PM):					210					144					354

East Bay: (510) 232-1271 *SF/Peninsula: (415) 750-1317*







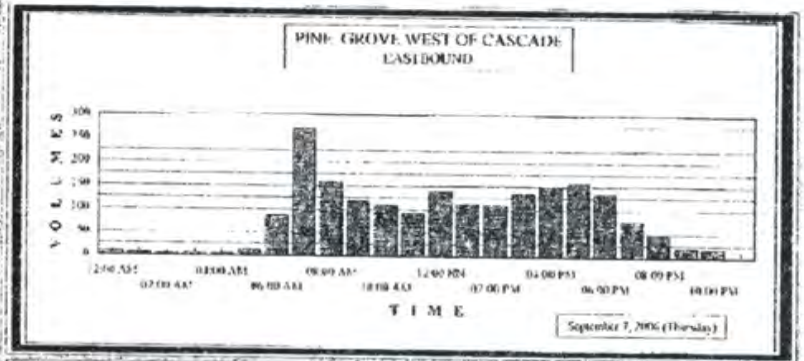
(8)

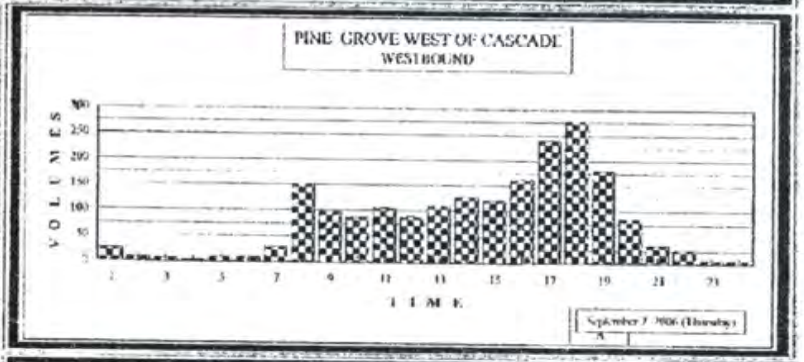
B . A . Y . M . E . T . R . I . C . S

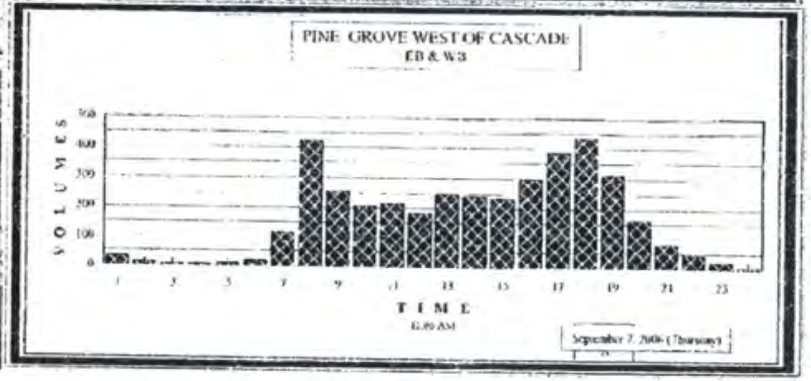
DAILY TUBE COUNT SUMMARY

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	PINE GROVE WEST OF CASCADE	RECORDER START:	9/7/2006
DIRECTION:	EASTBOUND & WESTBOUND	RECORDER END:	9/8/2006
CITY:	SHASRA LAKE	MACHINE ID:	M-8326

	EASTBOUND					WESTBOUND					EB & WB				
TIME	00:00	00:15	00:30	00:45	HR	00:00	00:15	00:30	00:45	HR	00:00	00:15	00:30	00:45	HR
September 7, 2006 (Thursday)															
12:00 AM	4	1	2	0	7	8	8	4	6	26	12	9	6	6	33
01:00 AM	0	3	2	0	5	5	3	1	2	8	5	5	3	2	13
02:00 AM	1	1	2	0	4	0	2	1	2	5	1	3	3	2	9
03:00 AM	0	1	3	2	6	0	0	1	1	2	0	1	4	3	8
04:00 AM	0	1	2	1	4	2	0	0	5	7	2	1	2	6	11
05:00 AM	0	0	2	5	12	2	1	2	3	8	2	1	9	8	20
06:00 AM	16	15	22	34	87	2	6	9	12	29	18	21	31	46	116
07:00 AM	52	72	81	66	271	22	33	51	46	152	74	105	132	112	423
08:00 AM	45	42	40	32	159	31	25	22	19	97	76	67	62	51	256
09:00 AM	31	29	33	26	119	15	24	18	30	87	46	53	51	56	206
10:00 AM	42	25	22	20	109	26	17	35	28	106	68	42	57	48	215
11:00 AM	17	31	26	18	92	20	24	25	20	89	37	55	51	38	181
12:00 NN	35	29	42	33	139	30	29	24	28	111	65	58	66	61	250
01:00 PM	34	28	22	30	114	29	31	25	42	127	63	59	47	72	241
02:00 PM	26	19	24	42	111	33	36	20	33	122	59	55	44	75	233
03:00 PM	35	27	33	11	135	43	31	36	52	162	78	58	69	93	297
04:00 PM	43	35	31	40	149	49	51	75	63	238	92	86	106	103	387
05:00 PM	33	38	46	42	159	52	84	77	68	278	85	119	123	110	437
06:00 PM	39	35	29	33	136	62	52	37	29	180	101	87	66	62	316
07:00 PM	19	20	22	15	76	31	22	19	15	87	50	42	41	30	163
08:00 PM	16	8	18	7	49	13	10	5	7	35	29	18	23	14	84
09:00 PM	7	5	4	3	19	11	5	4	7	27	18	10	8	10	46
10:00 PM	1	7	5	2	15	3	2	1	0	6	7	9	6	2	24
11:00 PM	1	0	1	0	2	2	0	1	3	6	3	0	2	3	8
TOTAL:					1,982					1,995					3,977
AM PEAK HR. (6 AM - 11 AM):					271					152					423
NOON PEAK HR. (11 AM - 4 PM):					139					162					297
PM PEAK HR. (4 PM - 7 PM):					159					278					437







East Bay: (510) 232 1271 *SF/Peninsula: (415) 750-1317*

(9)

B . A . Y . M . E . T . R . I . C . S

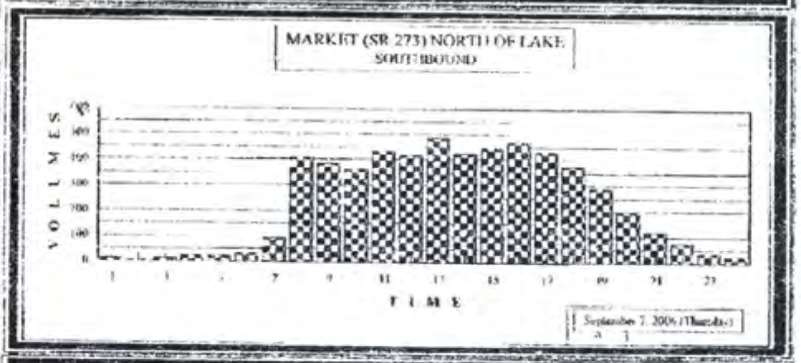
DAILY TUBE COUNT SUMMARY

PROJECT:	SHASTA LAKE ADT	RECORDER SET:	9/6/2006
LOCATION:	MARKET (SR 273) NORTH OF LAKE	RECORDER START:	9/7/2006
DIRECTION:	NORTHBOUND & SOUTHBOUND	RECORDER END:	9/8/2006
CITY:	REDDING	MACHINE ID:	M-3676

	NORTHBOUND					SOUTHBOUND					NB & SB				
TIME	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT	00:00	00:15	00:30	00:45	TOT
September 7, 2006 (Thursday)															
12:00 AM	7	7	4	5	23	4	2	1	3	10	11	9	5	8	33
01:00 AM	2	3	2	0	7	2	0	1	4	7	4	3	3	4	14
02:00 AM	1	2	0	1	4	2	2	3	4	11	3	4	3	5	15
03:00 AM	4	2	0	3	9	4	9	5	4	22	8	11	5	7	31
04:00 AM	2	2	4	2	10	4	3	7	8	22	6	5	11	10	32
05:00 AM	6	8	17	15	46	10	8	7	9	34	16	16	24	24	80
06:00 AM	21	19	24	56	120	9	11	24	52	96	30	30	48	108	216
07:00 AM	87	91	113	121	412	75	94	124	115	408	162	188	237	236	820
08:00 AM	95	121	106	88	410	98	106	91	92	387	193	227	197	180	797
09:00 AM	104	92	79	78	353	85	79	94	106	364	189	171	173	184	717
10:00 AM	104	88	91	80	363	101	126	113	97	435	205	212	204	177	798
11:00 AM	76	94	109	124	403	128	106	95	93	420	204	200	204	215	823
12:00 NN	91	105	117	98	411	115	142	124	106	487	206	247	241	204	898
01:00 PM	102	120	104	96	422	98	105	91	131	425	200	225	195	227	847
02:00 PM	114	124	98	131	467	104	141	105	99	449	218	265	203	230	916
03:00 PM	109	126	133	145	513	112	131	104	124	471	221	257	237	269	984
04:00 PM	128	117	119	109	473	109	115	112	98	434	237	232	231	207	907
05:00 PM	125	131	105	117	478	106	94	89	93	378	231	225	194	209	853
06:00 PM	124	106	93	107	430	78	82	79	63	302	202	188	172	170	732
07:00 PM	82	76	60	50	268	62	51	46	34	193	144	127	106	84	461
08:00 PM	46	41	38	29	154	32	29	31	24	116	78	70	69	53	270
09:00 PM	33	25	19	30	107	22	25	18	9	74	55	50	37	39	181
10:00 PM	24	17	8	7	56	12	5	10	10	37	36	22	18	17	93
11:00 PM	4	3	2	2	11	5	4	6	6	21	9	7	8	8	32
TOTAL:					5,961					5,601					11,562
AM PEAK HR. (6 AM - 11 AM):					418					435					826
NOON PEAK HR. (11 AM - 4 PM):					513					487					984
PM PEAK HR. (4 PM - 7 PM):					479					434					907

East Bay: (510) 252-1271 *SF/Peninsula: (415) 750-1317*







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ITE DEFINITIONS FOR SHOPPING CENTER
& ITE PASS-BY RATES FOR SHOPPING CENTER

Land Use: 820
Shopping Center

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its market area in terms of size, location and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Specialty retail center (Land Use 814) and factory outlet center (Land Use 823) are related uses.

Additional Data

Shopping centers, including neighborhood centers, community centers, regional centers and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs and recreational facilities (for example, ice skating rinks or indoor miniature golf courses). The centers ranged in size from 1,700 to 2.2 million square feet of gross leasable area (GLA). The centers studied were located in suburban areas throughout the United States and therefore represent typical U.S. suburban conditions.

Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied included peripheral buildings, it can be assumed that some of the data show their effect.

The vehicle trips generated at a shopping center are based upon the GLA of the center. In cases of smaller centers without an enclosed mall or peripheral buildings, the GLA could be the same as the gross floor area of the building.

Separate equations have been developed for shopping centers during the Christmas shopping season. Plots were included for the weekday peak hour of adjacent street traffic and the Saturday peak hour of the generator.

Information on approximate hourly, monthly and daily variation in shopping center traffic is shown in Tables 1–4. It should be noted, however, that the information contained in these tables is based on a limited sample size. Therefore, caution should be exercised when applying the data. Also, some information provided in the tables may conflict with the results obtained by applying the average rate or regression equations. When this occurs, it is suggested that the results from the average rate or regression equations be used, as they are based on a larger number of studies.

Table 1
Hourly Variation in Shopping Center Traffic
Less Than 100,000 Square Feet Gross Leasable Area

Time	Average Weekday[a]		Average Saturday[b]	
	Percent of 24 Hour Entering Traffic	Percent of 24 Hour Exiting Traffic	Percent of 24 Hour Entering Traffic	Percent of 24 Hour Exiting Traffic
10–11 a.m.	7.6	6.5	6.8	5.8
11 a.m.–12 p.m.	7.6	8.4	8.8	8.9
12–1 p.m.	7.6	8.2	9.4	8.8
1–2 p.m.	6.9	7.5	10.0	10.1
2–3 p.m.	9.0	7.8	9.7	8.4
3–4 p.m.	9.6	9.5	10.3	9.6
4–5 p.m.	9.7	10.4	10.7	10.7
5–6 p.m.	10.3	11.0	9.4	8.7
6–7 p.m.	7.4	8.3	7.3	8.3
7–8 p.m.	5.4	5.3	5.0	5.7
8–9 p.m.	4.2	4.3	3.2	3.9
9–10 p.m.	1.9	1.8	2.0	3.3

[a] Source numbers - 95, 124; based on four studies.
[b] Source numbers - 95, 124; based on four studies.

Table 2
Hourly Variation in Shopping Center Traffic
More Than 300,000 Square Feet Gross Leasable Area

Time	Average Weekday[a]		Average Saturday[b]		Average Sunday[c]	
	Percent of 24 Hour Entering Traffic	Percent of 24 Hour Exiting Traffic	Percent of 24 Hour Entering Traffic	Percent of 24 Hour Exiting Traffic	Percent of 24 Hour Entering Traffic	Percent of 24 Hour Exiting Traffic
10–11 a.m.	7.5	3.7	8.3	4.3	3.5	1.7
11 a.m.–12 p.m.	8.6	5.9	10.9	6.9	9.4	3.5
12–1 p.m.	9.5	7.9	11.9	8.9	15.3	6.3
1–2 p.m.	8.7	8.2	12.5	10.4	17.3	11.0
2–3 p.m.	7.9	8.8	12.4	12.0	16.4	14.4
3–4 p.m.	7.7	8.9	11.2	12.9	13.8	16.2
4–5 p.m.	8.2	9.1	9.2	13.4	9.8	16.8
5–6 p.m.	8.3	9.5	5.2	12.7	5.5	15.7
6–7 p.m.	7.8	7.7	2.9	8.0	2.2	6.1
7–8 p.m.	8.4	7.0	1.9	2.1	1.3	1.9
8–9 p.m.	4.7	7.7	1.4	1.2	0.8	1.1
9–10 p.m.	1.8	9.1	2.9	0.8	0.6	0.9

[a] Source numbers - 48, 73, 88, 124; based on seven studies.
[b] Source numbers - 73, 88; based on three studies.
[c] Source numbers - 88; based on two studies.

Table 5.6
Pass-By Trips and Diverted Linked Trips
Weekday, p.m. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
53	Port Orange, FL	1993	162	2:00–6:00 p.m.	—	41	—	59	n/a	n/a	TPD Inc.
9	Kissimmee, FL	1994	107	2:00–6:00 p.m.	20	—	14	66	n/a	n/a	TPD Inc.
77	Edgewater, FL	1992	365	2:00–6:00 p.m.	—	54	—	46	n/a	n/a	TPD Inc.
82	Deltona, FL	1992	336	2:00–6:00 p.m.	—	66	—	34	n/a	n/a	TPD Inc.
78	Orlando, FL	1991	702	2:00–6:00 p.m.	23	—	22	55	n/a	n/a	TPD Inc.
45	Orlando, FL	1992	844	2:00–6:00 p.m.	24	—	20	56	n/a	n/a	TPD Inc.
50	Orlando, FL	1992	555	2:00–6:00 p.m.	41	—	18	41	n/a	n/a	TPD Inc.
52	Orlando, FL	1995	665	2:00–6:00 p.m.	33	—	25	42	n/a	n/a	TPD Inc.
17	Orlando, FL	1994	196	2:00–6:00 p.m.	—	34	—	66	n/a	n/a	TPD Inc.
60	Orlando, FL	1995	1,583	3:00–7:00 p.m.	38	—	22	40	n/a	n/a	TPD Inc.
158	Crestwood, KY	Jun. 1993	129	4:00–6:00 p.m.	39	—	25	36	759	n/a	Barton-Aschman Assoc.
118	Louisville area, KY	Jun. 1993	133	4:00–6:00 p.m.	51	—	27	22	3,555	n/a	Barton-Aschman Assoc.
74	Louisville, KY	Jun. 1993	187	4:00–6:00 p.m.	43	—	27	30	922	n/a	Barton-Aschman Assoc.
59	Louisville area, KY	Jun. 1993	247	4:00–6:00 p.m.	52	—	17	31	2,659	n/a	Barton-Aschman Assoc.
145	Louisville area, KY	Jun. 1993	210	4:00–6:00 p.m.	30	—	17	53	2,636	n/a	Barton-Aschman Assoc.
104	Louisville area, KY	Jun. 1993	281	4:00–6:00 p.m.	50	—	22	28	2,111	n/a	Barton-Aschman Assoc.
235	Louisville, KY	Jun. 1993	211	4:00–6:00 p.m.	29	—	36	35	2,593	n/a	Barton-Aschman Assoc.
71	Louisville, KY	Jun. 1993	109	4:00–6:00 p.m.	42	—	33	25	1,559	n/a	Barton-Aschman Assoc.
350	Worcester, MA	Apr. 1994	224	4:00–6:00 p.m.	45	—	37	18	2,112	n/a	ICSC
738	East Brunswick, NJ	Apr. 1994	283	4:00–6:00 p.m.	79	—	7	14	8,059	n/a	ICSC
294	Philadelphia, PA	Apr. 1994	213	4:00–6:00 p.m.	51	—	24	25	4,055	n/a	ICSC
256	Hamden, CT	Apr. 1994	208	4:00–6:00 p.m.	51	—	22	27	3,422	n/a	ICSC
418	Glen Burnie, MD	Apr. 1994	281	4:00–6:00 p.m.	51	—	29	20	5,610	n/a	ICSC
560	Harrisonburg, VA	Apr. 1994	437	4:00–6:00 p.m.	49	—	32	19	3,051	n/a	ICSC

Table 5.6 (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, p.m. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
361	Glen Allen, VA	Apr. 1994	315	4:00–6:00 p.m.	54	—	29	17	2,034	n/a	ICSC
375	Shelby, NC	May 1994	214	4:00–6:00 p.m.	48	—	22	30	3,053	n/a	ICSC
413	Texas City, TX	May 1994	228	4:00–6:00 p.m.	52	—	20	28	589	n/a	ICSC
488	Texas City, TX	May 1994	257	4:00–6:00 p.m.	75	—	13	12	1,094	n/a	ICSC
293	Berwyn, IL	May 1994	282	4:00–6:00 p.m.	70	—	6	24	4,606	n/a	ICSC
667	Bourbonais, IL	May 1994	200	4:00–6:00 p.m.	53	—	31	16	2,770	n/a	ICSC
225	Belleville, IL	May 1994	264	4:00–6:00 p.m.	32	—	33	35	1,970	n/a	ICSC
255	Bettendorf, IA	May 1994	222	4:00–6:00 p.m.	37	—	39	24	3,706	n/a	ICSC
808	Laguna Hills, CA	Jun. 1994	240	4:00–6:00 p.m.	73	—	14	13	4,035	n/a	ICSC
450	Hanford, CA	May 1994	321	4:00–6:00 p.m.	49	—	28	23	2,787	n/a	ICSC
800	San Jose, CA	May 1994	205	4:00–6:00 p.m.	51	—	28	21	7,474	n/a	ICSC
598	Greeley, CO	May 1994	205	4:00–6:00 p.m.	55	—	28	17	3,840	n/a	ICSC
581	Pueblo, CO	May 1994	296	4:00–6:00 p.m.	53	—	29	18	2,939	n/a	ICSC
476	Bellevue, WA	May 1994	234	4:00–6:00 p.m.	54	—	20	26	3,427	n/a	ICSC
720	Framingham, MA	Dec. 1982	92	3:30–7:00 p.m.	39	—	38	23	n/a	73,628	Raymond Keyes Assoc.
890	Newark, DE	Jul. 1984	179	3:00–8:00 p.m.	49	—	39	12	n/a	n/a	Raymond Keyes Assoc.
402	Manassas, VA	Jun. 1984	87	4:00–6:00 p.m.	25	—	27	48	n/a	n/a	Raymond Keyes Assoc.
462	Ross, PA	Jun. 1980	175	5:30–7:00 p.m.	—	64	—	36	n/a	27,200	Raymond Keyes Assoc.
234	Huntington LI, NY	Nov. 1985	181	4:00–7:00 p.m.	21	—	33	46	n/a	34,630	Raymond Keyes Assoc.
658	Wayne, NJ	Sept. 1984	243	3:00–6:00 p.m.	61	—	12	27	n/a	85,600	Raymond Keyes Assoc.
1,200	Washington, DC	1980	364	4:00–6:00 p.m.	35	—	40	25	n/a	n/a	Gorove-Slade
800	Southern CA	n/a	1,000	4:00–6:00 p.m.	45	—	43	12	n/a	n/a	Frischer
451	Portland, OR	n/a	n/a	5:00–6:00 p.m.	—	75	—	25	n/a	n/a	Buttke
113	Portland, OR	n/a	n/a	5:00–6:00 p.m.	—	83	—	17	n/a	n/a	Buttke

Table 5.6 (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, p.m. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
921	Albany, NY	Jul. & Aug. 1985	196	4:00–6:00 P.M.	42	—	35	23	n/a	60,950	Raymond Keyes Assoc.
108	Overland Park, KS	Jul. 1988	111	4:30–5:30 p.m.	61	—	13	26	n/a	34,000	n/a
118	Overland Park, KS	Aug. 1988	123	4:30–5:30 p.m.	55	—	20	25	n/a	—	n/a
256	Greece, NY	Jun. 1988	120	4:00–6:00 p.m.	62	—	—	38	n/a	23,410	Sear Brown
160	Greece, NY	Jun. 1988	78	4:00–6:00 p.m.	71	—	—	29	n/a	57,306	Sear Brown
550	Greece, NY	Jun. 1988	117	4:00–6:00 p.m.	52	—	—	48	n/a	40,763	Sear Brown
51	Boca Raton, FL	Dec. 1987	110	4:00–6:00 p.m.	34	—	33	33	n/a	42,225	Kimley-Horn and Assoc. Inc.
1,090	Ross Twp, PA	Jul. 1988	411	2:00–8:00 p.m.	56	—	10	34	n/a	51,500	Wilbur Smith and Assoc.
97	Upper Dublin Twp, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	59	—	41	n/a	34,000	McMahon Associates
118	Tredyffrin Twp, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	76	—	24	n/a	10,000	Booz Allen & Hamilton
122	Lawnside, NJ	Winter 1988/89	n/a	4:00–6:00 p.m.	—	63	—	37	n/a	20,000	Pennoni Associates
126	Boca Raton, FL	Winter 1988/89	n/a	4:00–6:00 p.m.	—	57	—	43	n/a	40,000	McMahon Associates
150	Willow Grove, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	61	—	39	n/a	26,000	Booz Allen & Hamilton
153	Broward Cnty, FL	Winter 1988/89	n/a	4:00–6:00 p.m.	—	50	—	50	n/a	85,000	McMahon Associates
153	Arden, DE	Winter 1988/89	n/a	4:00–6:00 p.m.	—	70	—	30	n/a	26,000	Orth-Rodgers & Assoc. Inc.
154	Doylestown, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	68	—	32	n/a	29,000	Orth-Rodgers & Assoc. Inc.
164	Middletown Twp, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	67	—	33	n/a	25,000	Booz Allen & Hamilton
166	Haddon Twp, NJ	Winter 1988/89	n/a	4:00–6:00 p.m.	—	80	—	20	n/a	6,000	Pennoni Associates
205	Broward Cnty., FL	Winter 1988/89	n/a	4:00–6:00 p.m.	—	45	—	55	n/a	62,000	McMahon Associates

Table 5.6 (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, p.m. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
622	Ramsey, MN	Nov. 1985	46	4:00–9:00 p.m.	26	—	30	44	n/a	36,370	Raymond Keyes Assoc.
736	Pensacola, FL	Oct. 1985	383	3:00–7:00 p.m.	35	—	39	26	n/a	n/a	Raymond Keyes Assoc.
84	Dover, DE	Jul. 1985	218	3:30–7:00 p.m.	6	—	44	50	n/a	n/a	Raymond Keyes Assoc.
500	Meridon, CT	Apr. 1985	n/a	4:00–6:00 p.m.	—	92	—	8	n/a	n/a	Connecticut DOT
660	Enfield, CT	Apr. 1985	n/a	4:00–6:00 p.m.	—	78	—	22	n/a	n/a	Connecticut DOT
845	Waterford, CT	Apr. 1985	n/a	4:00–6:00 p.m.	—	86	—	14	n/a	n/a	Connecticut DOT
1,060	West Hartford, CT	Apr. 1985	n/a	4:00–6:00 p.m.	—	83	—	17	n/a	n/a	Connecticut DOT
131	Pr. Georges Co., MD	1982/83	88	4:00–6:00 p.m.	—	11	—	89	n/a	n/a	JHK
181	Pr. Georges Co., MD	1982/83	105	4:00–6:00 p.m.	—	64	—	36	n/a	n/a	JHK
100	Pr. Georges Co., MD	1982/83	93	4:00–6:00 p.m.	—	64	—	36	n/a	n/a	JHK
475	Pr. Georges Co., MD	1982/83	130	4:00–6:00 p.m.	—	80	—	20	n/a	n/a	JHK
60	Pr. Georges Co., MD	1982/83	72	4:00–6:00 p.m.	—	18	—	82	n/a	n/a	JHK
90	Pr. Georges Co., MD	1982/83	91	4:00–6:00 p.m.	—	42	—	58	n/a	n/a	JHK
78	Pr. Georges Co., MD	1982/83	113	4:00–6:00 p.m.	—	41	—	59	n/a	n/a	JHK
44	Pr. Georges Co., MD	1982/83	97	4:00–6:00 p.m.	—	49	—	51	n/a	n/a	JHK
467	Pr. Georges Co., MD	1982/83	99	4:00–6:00 p.m.	—	44	—	56	n/a	n/a	JHK
352	W. Orange, NJ	Mar. 1986	149	4:00–6:00 p.m.	19	—	43	38	n/a	21,520	Raymond Keyes Assoc.
176	Tarpon Springs, FL	May 1986	124	3:00–7:00 p.m.	28	—	35	37	n/a	34,080	Raymond Keyes Assoc.
762	Orlando, FL	Fall 1985	182	4:00–6:00 p.m.	52	—	23	25	n/a	n/a	Kimley-Horn and Assoc. Inc.
166	Orlando, FL	Fall 1985	124	4:00–6:00 p.m.	48	—	25	27	n/a	n/a	Kimley-Horn and Assoc. Inc.
129	Orlando, FL	Fall 1985	116	4:00–6:00 p.m.	50	—	22	28	n/a	n/a	Kimley-Horn and Assoc. Inc.
71	Orlando, FL	Fall 1985	81	4:00–6:00 p.m.	44	—	6	50	n/a	n/a	Kimley-Horn and Assoc. Inc.

Table 5.6 (Cont'd)
Pass-By Trips and Diverted Linked Trips
Weekday, p.m. Peak Period

Land Use 820—Shopping Center

SIZE (1,000 SQ. FT. GLA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PRIMARY TRIP (%)	NON-PASS-BY TRIP (%)	DIVERTED LINKED TRIP (%)	PASS-BY TRIP (%)	ADJ. STREET PEAK HOUR VOLUME	AVERAGE 24-HOUR TRAFFIC	SOURCE
237	W. Windsor Twp, NJ	Winter 1988/89	n/a	4:00–6:00 p.m.	—	52	—	48	n/a	46,000	Booz Allen & Hamilton
242	Willow Grove, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	63	—	37	n/a	26,000	McMahon Associates
297	Whitehall, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	67	—	33	n/a	26,000	Orth-Rodgers & Assoc. Inc.
360	Broward Cnty., FL	Winter 1988/89	n/a	4:00–6:00 p.m.	—	56	—	44	n/a	73,000	McMahon Associates
370	Pittsburgh, PA	Winter 1988/89	n/a	4:00–6:00 p.m.	—	81	—	19	n/a	33,000	Wilbur Smith
150	Portland, OR	n/a	519	4:00–6:00 p.m.	6	—	26	68	n/a	25,000	Kittleson and Associates
150	Portland, OR	n/a	655	4:00–6:00 p.m.	7	—	28	65	n/a	30,000	Kittleson and Associates
760	Calgary, Alberta	Oct-Dec 1987	15,436	4:00–6:00 p.m.	39	—	41	20	n/a	n/a	City of Calgary DOT
178	Bordentown, NJ	Apr. 1989	154	2:00–6:00 p.m.	—	65	—	35	n/a	37,980	Raymond Keyes Assoc.
144	Manalapan, NJ	Jul. 1990	176	3:30–6:15 p.m.	44	—	24	32	n/a	69,347	Raymond Keyes Assoc.
549	Natick, MA	Feb. 1989	n/a	4:45–5:45 p.m.	26	—	41	33	n/a	48,782	Raymond Keyes Assoc.

Average Pass-By Trip Percentage: 34

APPROVED/PENDING DEVELOPMENTS

Appendix Table 1A
Approved/Pending Development vs. Model Assumptions

Project Name	Included in the January 2007 Model?			Model TAZ	Development Size[4]	Extent of Development included in the January 2007 Model	Land Uses Added/Modified by OMNI_MEANS		
	Year 2010[1]	Year 2020[2]	Year 2030[3]				Year 2010[1]	Year 2020[2]	Year 2030[3]
City Commercial Center	No	Yes	Yes	820	35,300sq.ft.Retail, 6,640 sq.ft. Rest. 72 room hotel	100,000 sq.ft service commercial	None	None	None
Deer Creek Manor Subdivision (Completion)	Yes	Yes	Yes	831	88 SFDU	88 SFDU	None	None	None
Deer Creek Manor Subdivision (Phase II)	No	No	No	831*	95 SFDU	None	None	95 SFDU	95 SFDU
Windsor Estates Subdivision	Yes	Yes	Yes	831	60 SFDU	137 MF Lots	None	None	None
Mountain Properties Subdivision	Yes	Yes	Yes	854	166 SFDU	166 SFDU	None	None	None
Heritage Grove	No	Yes	Yes	829	354 SFDU, 36 Townhouse, 158,100sq.ft. Speciality Retail	160 SFDU	None	None	354 SFDU, 36MFDU, 158.1 KSF Ret
Pineridge Planned Development	No	No	No	831*	95 SFDU	None	None	95 SFDU	95 SFDU
Brookridge Subdivision	No	Yes	Yes	837	209 SFDU	130 SFDU	None	None	79
Tuscan Cascades Townhomes	No	Yes	Yes	833	101 Townhouses	60 MFDU	None	None	41 MFDU
Shasta Cascade Gateway Industrial Park Distribution Center	Yes	Yes	Yes	846	75,000 sq.ft Dist Center	24,500 sq.ft office + 49,000 sq.ft industrial[1], 73,600 sq.ft office + 192,000 sq.ft industrial[2], 107,600 sq.ft office + 379,000 sq.ft industrial[3]	None	None	None

** - Possible TAZ boundary per the project description.*

1 - Extent of Year 2010 Development

2 - Extent of Year 2020 Development

3 - Extent of Year 2030 Development

4. Approved/Pending Development List provided by City Staff.

Appendix Table 1B
Approved/Pending Development Considered Insignificant in Terms of Model Assumptions

Project Name	Development Type	Development Size	Approved	Pending
Shasta Dam Rite Aid Addition – Starbucks plus 2 additional unnamed tenants	Commercial/ Retail	4000 sq ft	X	
Webster Street Subdivision	Residential Subdivision	6 residential lots		X
Java Gold Drive-Through Coffee, Shasta Dam	Commercial	476 square foot drive-through	X	
Risse Racing – Shasta Gateway Industrial Park	Industrial	10,000 square foot Manufacturing Facility		X
Subway Sandwich, Cascade Boulevard	Commercial[1]	1,780 square foot restaurant with		X

1 - Already included in the City Commercial Center Project

TRIP GENERATION MEMO

omni · means
ENGINEERS · PLANNERS

MEMORANDUM

To:	**WILLDAN**	**Date:**	August 7, 2007
Attn:	Mort August	**Project:**	Mountain Gate at Shasta Lake
From:	Trisha Dudala, Kamesh Vedula, Russ Wenham		
Re:	Trip Generation	**Job No.:**	45-5130-14
		File No.:	C946MEM006
CC:	Carla Thompson (City of Shasta Lake) Debbie Israel-Messer (City of Shasta Lake) Mark Teague (Pacific Municipal Consultants)		

This memorandum has been prepared to present the following:

- Mountain Gate at Shasta Lake project trip generation findings from an analysis using the Shasta County Regional Travel Demand Model
- Provide a comparison between the Shasta County Travel Demand Model assumptions and trip generation estimates that were presented in the draft report based on ITE land uses
- Internal Trip Capture as observed from the Shasta County Travel Demand Model
- Diverted Link Trip analysis
- Trip Distribution from the Shasta County Travel Demand Model

Mountain Gate at Shasta Lake project trip generation findings from the model

On reviewing the model it was observed that the Mountain Gate at Shasta Lake project was represented by the following three TAZ's 814, 820 and 856.

For the purpose of this analysis, the TAZ structure for the Mountain Gate at Shasta Lake project was modified to mirror the land use map provided by PMC (Provided within Appendix). With the revised TAZ structure, the Mountain Gate at Shasta Lake project is now represented by 16 zones (Zones 856 – 871). Figure 1 depicts the revised TAZ structure. The project land uses that comprise of the following uses were distributed over the 16 zones per the land use map provided by PMC (Provided within Appendix).

- 1042 Single Family units
- 416 Multi Family Units
- 220 KSF Retail Uses
- 15 KSF Office
- 16 KSF Park

In the original model, the TAZ 814 that represented the Mountain Gate at Shasta Lake project comprised of 500 MFDU. It was assumed that about 90% of the 500 MFDU belonged to the Mountain Gate project. Therefore, in the land use file the 500 MFDU were substituted with 50 MFDU. TAZ 814 lines up with proposed City commercial center and therefore no adjustments were made to this TAZ. Adjustments for TAZ 856 are shown in a subsequent section of this memo (Table 1).

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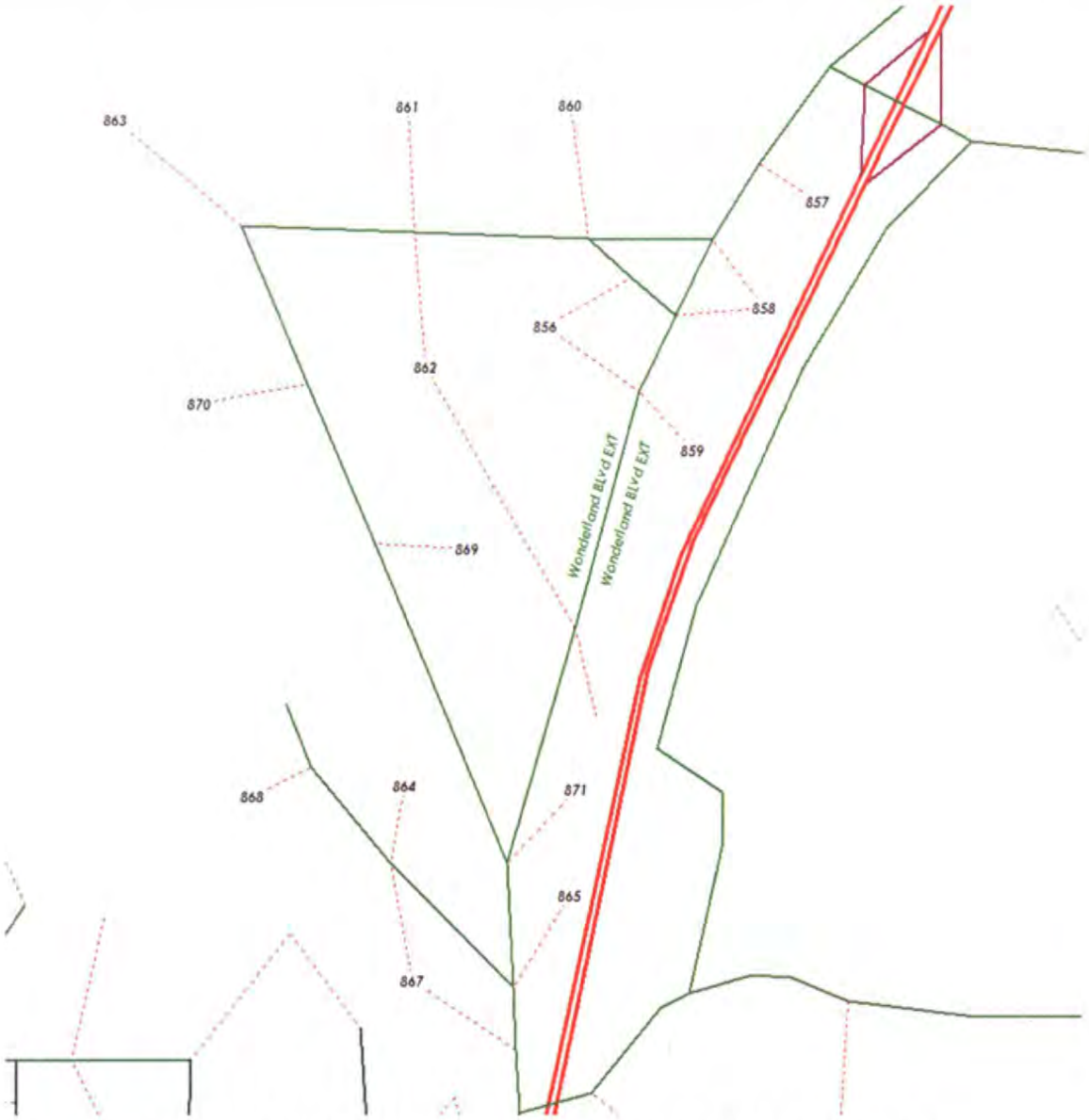


Figure 1 Modified TAZ Structure for Mountain Gate at Shasta Lake Project

The following socio-economic data was applied to the TAZ's (data is consistent for similar uses within the model):

- 2.65 persons per SFDU
- 2.16 person per MFDU
- 3.3 employees/ksf for office
- 2 employees/ksf for retail
- 40 employees for 16 acre park (conservative estimate)

Table 1 provides an overview of the TAZ uses and the associated socio economic data.

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TABLE 1
MOUNTAIN GATE PROJECT – TAZ USES AND SOCIO ECONOMIC DATA

TAZ	SFDU	MFDU	POP	RET_KSF	OFF_KSF	EMP_RET	EMP_OFF	EMP_PARK
856		157	340	58	4	116	13	20
857				88	6	176	20	
858		210	454	74	5	148	17	
859	76		202					
860	187	25	550					
861	78	17	244					
862	175		464					
863	43		115					
864	84		223					
865	30		79					
866	54	7	161					20
867	84		223					
868	33		88					
869	74		197					
870	36		97					
871	87		232					
Totals	**1042**	**416**	**3669**	**220**	**15**	**440**	**50**	**40**

Trip generation from the model for these 16 zones is presented in **Table 2** below:

TABLE 2
MOUNTAIN GATE PROJECT - MODEL TRIP GENERATION BY TAZ

TAZ	Daily Trips	AM PK Trips	PM PK Trips
856	4370	341	400
857	4729	313	428
858	5340	405	493
859	703	71	68
860	2595	259	246
861	833	85	81
862	1621	165	157
863	397	39	38
864	777	79	75
865	277	27	26
866	544	55	52
867	776	79	75
868	304	30	29
869	686	69	66
870	332	33	32
871	806	82	78
Total	**25,090**	**2,132**	**2,344**

As shown in **Table 2**, the Mountain Gate project based on land uses assumed in the model is projected to generate a total of 25,090 trips, of which 2,132 trips are projected to occur during the AM peak hour period and 2,344 trips are projected to occur during the PM peak hour period. Screenshot from the model is shown in Figure 2. The first number represents the AM peak hour, the second number represents the PM peak hour and the third number represents the daily conditions.

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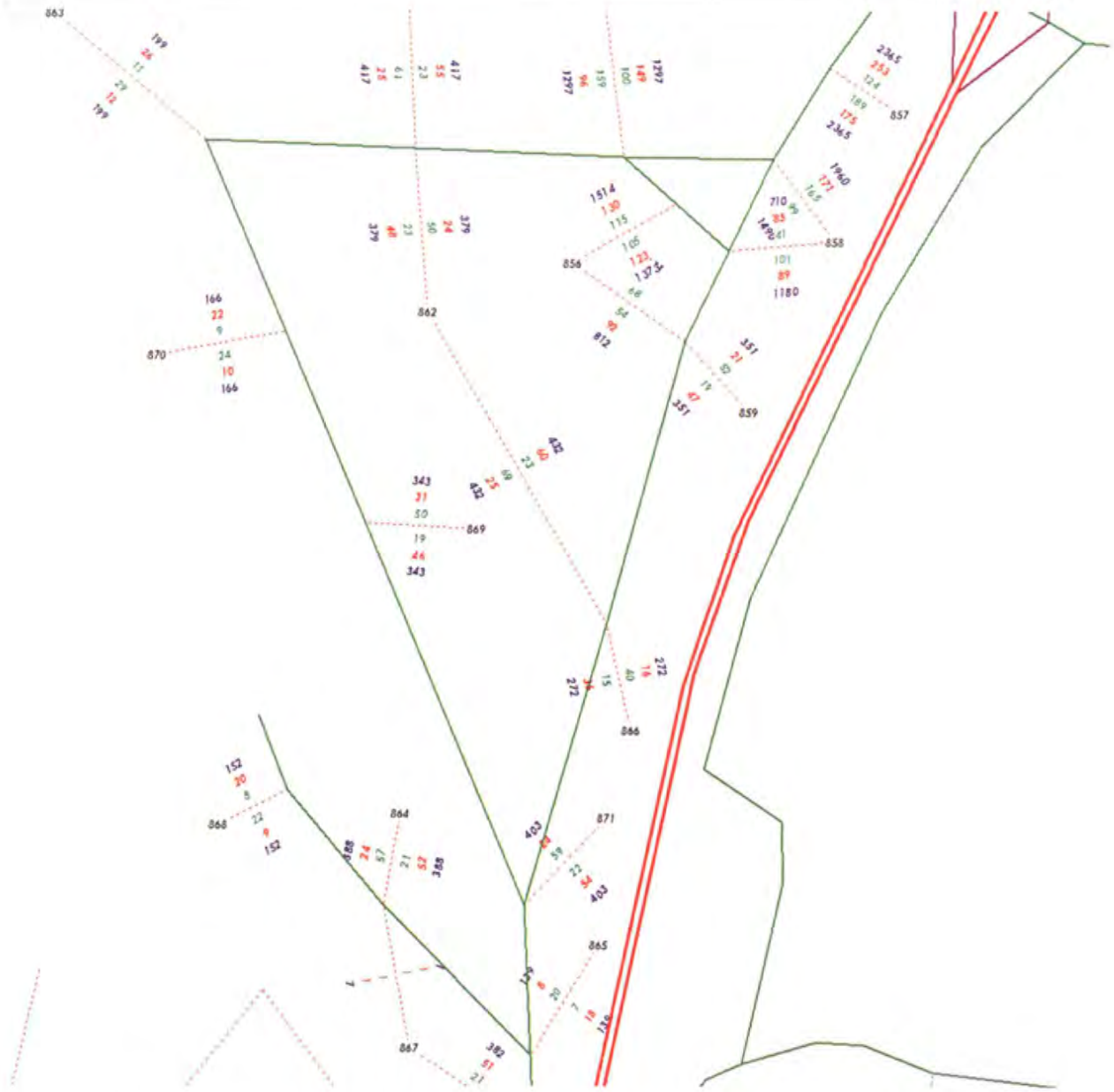


Figure 2 Screenshot of Model Trip Generation for Mountain Gate at Shasta Lake Project

Table 3 below shows a comparison between project trip generation from the model (as shown in Table 2) and trip generation that was presented in the draft report which was based on ITE land uses:

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TABLE 3
MOUNTAIN GATE PROJECT – TRIP GENERATION COMPARIOSON BETWEEN THE MODEL AND ITE

	Daily Trips	AM Pk. Hr. Trips	PM Pk. Hr. Trips
ITE Trip Generation (Before Pass By)	28,330	1,401	2,804
Model Trip Generation	25,090	2,132	2,344
Difference	3,240	-731	460

As shown in **Table 3**, when compared to the model trip generation, trip generation based on ITE land uses is higher by 3,240 trips and 460 trips for the daily and PM peak hour conditions, respectively. However, trip generation based on ITE land uses is lower by 731 trips during the AM peak hour when compared to the model trip generation.

Internal Trip Capture

Further analysis was undertaken to study the internal trip patterns between the 16 zones that represent the Mountain Gate project. Internal trips are defined as those trips that are made within the Mountain Gate project site and which do not leave the Mountain Gate project boundary. In order to determine the number of Internal trips within the Mountain Gate project from the model, trips from the Origin-Destination (OD) matrix (generated by the model) for the 16 zones was exported as an excel file, provided below. The following tables show zone to zone trips and also summarized the internal trip captures rates based on these zone-to-zone trips.

Table 4 below illustrates the OD matrix that represents the number of AM peak hour trips between each of the 16 zones.

TABLE 4
MOUNTAIN GATE PROJECT – AM PEAK HOUR INTERNAL TRIPS

Internal Trips	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	Total
856	0	13.7	18.37	2.32	10.44	2.4	3.98	0.96	0.73	0.27	1.18	0.64	0.27	0.92	0.61	1.06	58
857	10.54	0	16.84	1.5	5.97	1.77	2.9	0.69	0.49	0.18	0.8	0.42	0.19	0.67	0.46	0.71	44
858	20.3	22.48	0	2.45	11.53	2.48	4.08	0.96	0.75	0.27	1.25	0.66	0.28	0.92	0.62	1.08	70
859	5.55	3.92	5.19	0	2.92	0.4	0.66	0.14	0.14	0.05	0.26	0.12	0.05	0.14	0.09	0.21	20
860	17.59	12.96	16.42	1.67	0	2.48	4.1	0.95	0.48	0.17	0.83	0.42	0.18	0.89	0.59	0.72	60
861	5.69	4.46	5.24	0.42	4.43	0	1.85	0.4	0.1	0.04	0.19	0.09	0.04	0.36	0.26	0.16	24
862	9.64	7.44	8.81	0.72	7.58	1.94	0	0.69	0.4	0.14	0.7	0.35	0.14	0.62	0.44	0.59	40
863	2.32	1.72	2.08	0.16	1.79	0.44	0.72	0	0.08	0.03	0.08	0.07	0.03	0.28	0.18	0.12	10
864	1.87	1.3	1.73	0.17	0.96	0.12	0.44	0.08	0	0.15	0.19	0.56	0.29	0.25	0.09	0.39	9
865	0.69	0.49	0.64	0.06	0.35	0.05	0.16	0.03	0.15	0	0.07	0.13	0.05	0.1	0.03	0.14	3
866	2.92	2.1	2.74	0.29	1.57	0.21	0.71	0.07	0.18	0.07	0	0.15	0.06	0.18	0.07	0.26	12
867	1.64	1.14	1.53	0.15	0.84	0.11	0.39	0.07	0.56	0.13	0.17	0	0.21	0.22	0.08	0.33	8
868	0.69	0.51	0.64	0.07	0.37	0.05	0.16	0.03	0.3	0.05	0.07	0.21	0	0.1	0.03	0.15	3
869	2.28	1.72	2.06	0.17	1.76	0.42	0.68	0.3	0.25	0.1	0.19	0.22	0.1	0	0.34	0.4	11
870	1.48	1.15	1.35	0.1	1.14	0.29	0.47	0.19	0.09	0.03	0.07	0.08	0.03	0.33	0	0.13	7
871	2.67	1.9	2.46	0.26	1.43	0.18	0.64	0.12	0.38	0.14	0.28	0.33	0.14	0.4	0.14	0	11

The external trips are calculated by subtracting the total trip generation from each of the TAZ (shown in Table 2) from the internal trips as observed within **Table 4.** These trips are presented in **Table 5**.

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TABLE 5
MOUNTAIN GATE PROJECT – AM PEAK HOUR INTERNAL CAPTURE RATE

TAZ	Total Trips_AM	Int Trips_AM	Ext Trips_AM
856	341	58	283
857	313	44	269
858	405	70	335
859	71	20	51
860	259	60	199
861	85	24	61
862	165	40	125
863	39	10	29
864	79	9	70
865	27	3	24
866	55	12	43
867	79	8	71
868	30	3	27
869	69	11	58
870	33	7	26
871	82	11	71
Totals	**2,132**	**390**	**1742**
% Totals	**100%**	**18%**	**82%**

As shown above in **Table 5**, the model estimates a total of 390 internal AM peak hour trips, which accounts for 18% of the total AM peak hour trips.

Table 6 below illustrates the number of PM peak hour trips between each of the 16 zones.

TABLE 6
MOUNTAIN GATE PROJECT – PM PEAK HOUR INTERNAL TRIPS

The external trips are calculated by subtracting the total trip generation from each of the TAZ (shown in Table 2) from the internal trips as observed within **Table 6.** These trips are presented in **Table 7**.

Internal Trips	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	Total
856	0	14.95	24.46	5.35	17.46	5.66	9.46	2.32	1.82	0.67	2.83	1.6	0.68	2.26	1.47	2.58	94
857	17.37	0	28.76	4.66	15.48	5.46	9.02	2.15	1.57	0.58	2.5	1.37	0.62	2.13	1.43	2.27	95
858	23.1	23.79	0	5.66	18.17	5.92	9.83	2.37	1.92	0.71	2.99	1.68	0.72	2.33	1.54	2.7	103
859	2.67	2.12	2.88	0	1.42	0.32	0.53	0.12	0.13	0.05	0.21	0.11	0.05	0.13	0.08	0.19	11
860	11.06	8.41	12.16	2.06	0	3.14	5.32	1.26	0.68	0.24	1.1	0.59	0.25	1.23	0.8	1	49
861	2.83	2.53	3.01	0.31	2.12	0	1.45	0.33	0.09	0.03	0.16	0.08	0.03	0.31	0.21	0.13	14
862	4.68	4.13	4.93	0.5	3.52	1.41	0	0.53	0.32	0.12	0.53	0.28	0.12	0.5	0.34	0.48	22
863	1.15	0.99	1.19	0.11	0.82	0.31	0.52	0	0.06	0.02	0.06	0.05	0.02	0.22	0.14	0.09	6
864	0.87	0.7	0.93	0.11	0.42	0.08	0.3	0.06	0	0.11	0.14	0.42	0.22	0.19	0.07	0.28	5
865	0.32	0.26	0.34	0.04	0.15	0.03	0.11	0.02	0.11	0	0.05	0.1	0.04	0.07	0.03	0.1	2
866	1.39	1.13	1.49	0.2	0.72	0.15	0.52	0.06	0.14	0.05	0	0.13	0.05	0.14	0.05	0.21	6
867	0.76	0.61	0.81	0.1	0.36	0.07	0.26	0.05	0.42	0.1	0.12	0	0.16	0.16	0.06	0.24	4
868	0.32	0.27	0.35	0.04	0.16	0.03	0.11	0.02	0.21	0.04	0.05	0.16	0	0.07	0.02	0.11	2
869	1.1	0.96	1.14	0.11	0.78	0.28	0.47	0.21	0.19	0.07	0.14	0.17	0.07	0	0.25	0.29	6
870	0.73	0.66	0.77	0.07	0.51	0.2	0.33	0.14	0.07	0.03	0.05	0.06	0.03	0.25	0	0.1	4
871	1.24	1.01	1.31	0.17	0.62	0.12	0.44	0.09	0.28	0.11	0.2	0.24	0.11	0.29	0.1	0	6

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TABLE 7
MOUNTAIN GATE PROJECT – PM PEAK HOUR INTERNAL CAPTURE RATE

TAZ	Total Trips_PM	Int Trips_PM	Ext Trips_PM
856	400	94	306
857	428	95	333
858	493	103	390
859	68	11	57
860	246	49	197
861	81	14	67
862	157	22	135
863	38	6	32
864	75	5	70
865	26	2	24
866	52	6	46
867	75	4	71
868	29	2	27
869	66	6	60
870	32	4	28
871	78	6	72
Totals	**2,344**	**429**	**1915**
% Totals	**100%**	**18%**	**82%**

As shown above in **Table 7**, the model estimates a total of 429 internal PM peak hour trips, which accounts for 18% of the total PM peak hour trips.

Table 8 below illustrates the number of Daily trips between each of the 16 zones.

TABLE 8
MOUNTAIN GATE PROJECT – DAILY INTERNAL TRIPS

Internal Trips	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	Total
856	0	185.6	267.9	43.36	157.4	45.84	76.51	18.71	14.5	5.31	22.76	12.63	5.35	18.11	11.83	20.61	906
857	185.5	0	300.8	35.43	128.8	41.93	69.09	16.42	11.76	4.36	18.97	10.23	4.61	16.14	10.91	17.11	872
858	267.8	300.8	0	45.58	166	47.65	78.81	18.98	15.05	5.57	23.9	13.2	5.67	18.48	12.26	21.33	1041
859	43.35	35.43	45.57	0	19.88	3.63	5.98	1.32	1.38	0.5	2.39	1.2	0.52	1.4	0.86	2.07	165
860	157.3	128.8	166	19.88	0	30.15	50.73	11.88	6.24	2.24	10.41	5.45	2.35	11.5	7.52	9.28	620
861	45.83	41.93	47.65	3.63	30.15	0	16.58	3.74	0.99	0.38	1.77	0.87	0.38	3.44	2.41	1.49	201
862	76.47	69.08	78.8	5.98	50.73	16.58	0	6.15	3.64	1.34	6.16	3.17	1.32	5.66	3.92	5.36	334
863	18.71	16.42	18.98	1.32	11.88	3.74	6.15	0	0.69	0.25	0.67	0.6	0.26	2.52	1.64	1.05	85
864	14.48	11.76	15.03	1.38	6.23	0.99	3.64	0.69	0	1.31	1.64	4.8	2.5	2.23	0.81	3.28	71
865	5.3	4.36	5.56	0.5	2.24	0.38	1.33	0.25	1.31	0	0.6	1.14	0.47	0.84	0.3	1.25	26
866	22.74	18.96	23.89	2.39	10.41	1.77	6.16	0.67	1.64	0.6	0	1.43	0.6	1.62	0.6	2.37	96
867	12.62	10.23	13.18	1.2	5.44	0.87	3.17	0.6	4.8	1.14	1.43	0	1.83	1.94	0.71	2.82	62
868	5.34	4.61	5.66	0.52	2.35	0.38	1.31	0.26	2.5	0.47	0.6	1.83	0	0.86	0.3	1.26	28
869	18.09	16.13	18.47	1.4	11.5	3.44	5.66	2.52	2.23	0.84	1.62	1.94	0.86	0	2.93	3.42	91
870	11.82	10.91	12.26	0.86	7.52	2.41	3.92	1.64	0.81	0.3	0.6	0.71	0.3	2.93	0	1.19	58
871	20.59	17.1	21.31	2.06	9.28	1.49	5.36	1.05	3.28	1.25	2.37	2.82	1.26	3.42	1.19	0	94

The external trips are calculated by subtracting the total trip generation from each of the TAZ (shown in Table 2) from the internal trips as observed within **Table 8.** These trips are presented in **Table 9**.

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TABLE 9
MOUNTAIN GATE PROJECT – DAILY INTERNAL CAPTURE RATE

TAZ	Total Trips_Daily	Int Trips_Daily	Ext Trips_Daily
856	4370	906	3464
857	4729	872	3857
858	5340	1041	4299
859	703	165	538
860	2595	620	1975
861	833	201	632
862	1621	334	1287
863	397	85	312
864	777	71	706
865	277	26	251
866	544	96	448
867	776	62	714
868	304	28	276
869	686	91	595
870	332	58	274
871	806	94	712
Totals	**25,090**	**4,750**	**20,340**
% Totals	**100%**	**19%**	**81%**

As shown above in **Table 9**, the model estimates a total of 4,750 daily internal trips, which accounts for 19% of the total trips.

As shown in the above tables, the model assumes 18-19% internal matching between various land uses for different time periods within the Mountain Gate at Shasta Lake project.

Diverted Trips

Diverted trips are those trips that are captured from existing traffic along a nearby roadway (I-5). To arrive at the site, it is necessary for a diverted trip to go somewhat "out of its way," and thus will add trips to selected roadways and intersections in the vicinity of the project. After leaving the site, the trip will eventually return to the course of travel it would have been on with or without the project. Since the trip is an existing trip which is already accounted for, trips are altered or added only to roadway and intersection volumes which correspond to the diverted portion of the travel route.

TAZ's 856, 857 and 858 include the retail component of the project site, and therefore would qualify for the diverted trip discounts. The following were derived from the model:

- TAZ 856 – about 60% of the total trips from this TAZ are from retail uses
- TAZ 857 – about 98% of the total trips from this TAZ are from retail uses
- TAZ 858 – about 70% of the total trips from this TAZ are from retail uses

Proposed Project Trip Generation

Table 10 provides a summary of the trip generation for the proposed Mountain Gate at Shasta Lake project.

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TABLE 10
MOUNTAIN GATE PROJECT – PROPOSED TRIP GENERATION

	Daily Trips	AM Pk. Hr. Trips	PM Pk. Hr. Trips
Model Trip Generation	25,090	2,132	2,344
Internal Trips	-4,750	-390	-429
Diverted Link Trips	-916	-63	-80
Total External Project Trip Generation	**19,424**	**1,679**	**1,835**

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Appendix 4.3-2

OMNI MEANS TECHNICAL MEMORANDUM, November 2012

TECHNICAL MEMORANDUM

To:	PMC	**Date:**	November 09, 2012
Attn:	Mark Teague	**Project:**	Mountain Gate at Shasta Lake
From:	Kamesh Vedula, P.E., T.E. Russ Wenham, P.E., T.E		
Re:	Update to the 2008 TIAR	**Job No.:**	45-5130-14
	At I-5/Mountain Gate Interchange	**File No.:**	C946MEM010.DOCX
CC:	Carla Thompson, City of Shasta Lake		

INTRODUCTION AND BACKGROUND

On May 17, 2012, Omni-Means delivered a CD to Caltrans that contained the traffic impact analysis report (TIAR) prepared for the Mountain Gate at Shasta project and the associated technical documentation for their review and comment. The TIAR was prepared in August 2008. Caltrans reviewed the information and provided comments via email dated June 26, 2012 and requested a meeting to go over the comments and hear Omni-Means' response. The meeting was held at the Caltrans District 2 office on July 2nd, 2012 and all of Caltrans' comments were discussed. The meeting attendees were Carla Thompson - City of Shasta Lake, Russ Wenham - Omni-Means, Kamesh Vedula - Omni-Means, Michelle Millette - Caltrans, Marci Gonzalez - Caltrans, Teri Anderson - Caltrans and Rob Stinger - Caltrans.

The outcome of the meeting was that Caltrans required an update to the traffic analysis for the Interstate 5/Mountain Gate Boulevard interchange area with consideration of the proposed Moody Flat Quarry and the approved Shasta Wine Village projects. The Moody Flats Quarry project is pending approval from the agencies. Additionally, Caltrans requested Omni-Means to provide a screen shot of the Travel Demand Model (TDM) and the original TAZs in the vicinity of the project area and to include the land use data for TAZs 814, 820 & 856.

This technical memorandum was prepared to update the traffic analysis at the following locations for Existing, Year 2020 and Year 2030 conditions:

1. Old Oregon Trail/Wonderland Boulevard
2. Old Oregon Trail /I-5 SB Ramps
3. Old Oregon Trail /I-5 NB Ramps
4. Old Oregon Trail/Holiday Road

Trips from the proposed Moody Flat Quarry and Shasta Wine Village projects were assumed for Year 2020 and Year 2030 conditions.

This purpose of this technical memorandum is to amend the analysis that was completed within the August 2008 TIAR for the four study intersections noted above. Therefore, this memorandum solely focuses on traffic impacts at these locations for the various time periods. It is advised that the reader refer to the TIAR for other information.

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EXISTING TRAFFIC VOLUMES

The following locations have been identified as the critical study intersections in this analysis:

Intersections:

1. Old Oregon Trail/Wonderland Boulevard
2. Old Oregon Trail /I-5 SB Ramps
3. Old Oregon Trail /I-5 NB Ramps
4. Old Oregon Trail/Holiday Road

New weekday peak-hour intersection traffic counts were conducted in December 13, 2011 at all study locations. The AM peak-hour is defined as the one continuous hour of peak traffic flow counted between 7:00 AM and 9:00 AM, and the PM peak-hour is defined as the one continuous hour of peak traffic flow counted between 4:00 PM and 6:00 PM under typical weekday conditions. Bicycle and pedestrian counts were not collected due to the minimal bicycle and pedestrian activity expected at the study locations.

TECHNICAL ANALYSIS PARAMETERS

This study implemented appropriate heavy vehicle adjustment factors, peak-hour factors (PHF), and signal lost-time factors. LOS operations have been determined using HCM-2000 methodologies incorporating the aforementioned factors.

For Existing conditions, PHF observed from the counts was used within the analysis. For future conditions, a PHF of 0.85 was used within the analysis.

All of the analysis within the 2008 TIAR was completed using HCM 2000 methodologies. Therefore, for the purposes of consistency, HCM 2000 methodologies were utilized for this update. The *Synchro Version 7* software suite by Trafficware has been used to implement the HCM-2000 analysis methodologies.

The specific technical analysis parameters that will be used for this study are presented in Table 1.

TABLE 1
INTERSECTION TECHNICAL ANALYSIS PARAMETERS

Technical Parameters (1)	All intersections
Grade	Level
PHF (Existing)	From counts
PHF (proposed)	0.85

Notes: 1. Computer software defaults will be used for parameters not listed

EXISTING TRAFFIC OPERATIONS

Existing AM and PM peak hour intersection traffic operations are quantified using intersection lane geometrics and traffic volumes obtained in December 2011. The 2011 existing intersection LOS conditions are presented below in Table 2.

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TABLE 2
EXISTING CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	Wonderland Blvd./Old Oregon Trail	AWSC	C	9.7	A	-	8.6	A	-
2	I-5 SB Ramps/Old Oregon Trail	TWSC	C	9.4	A	-	10.5	B	-
3	I-5 NB Ramps/Old Oregon Trail	TWSC	C	12.0	B	-	10.0	A	-
4	Holiday Rd./Old Oregon Trail	TWSC	C	10.6	B	-	10.0	A	-

Notes:
TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay
AWSC = All Way Stop Control, average intersection LOS and Delay
Warrant = California MUTCD Signal Warrant 3

As presented in Table 2, all of the study intersections are operating at acceptable LOS B or below.

PROJECT TRIP GENERATION

The project is expected to be constructed in phases and as such the land use assumptions differ from the *Existing Plus Project* conditions (near-term) to 2020 and 2030 conditions. For *Existing Plus Project* conditions the project is expected to generate 3,329 weekday daily trips, 219 of which would occur during the AM peak hour, and 398 of which would occur during the PM peak hour. This is consistent with the trip generation assumptions for Year 2010 conditions within the 2008 TIAR.

At buildout of the proposed Mountain Gate at Shasta Lake project will generate 19,424 weekday daily trips, 1,680 of which would occur during the AM peak hour, and 1,835 of which would occur during the PM peak hour. This information has been used previously within the 2008 TIAR for Year 2020 and 2030 conditions. As such, this information will be used in the analysis of 2020 and 2030 conditions.

EXISTING PLUS PROJECT CONDITIONS

Existing Plus Project conditions were generated by adding Mountain Gate at Shasta Lake project trips to the *Existing* traffic volumes at all study intersections. Table 3 presents the *Existing Plus Project* conditions intersection LOS.

TABLE 3
EXISTING PLUS PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	Wonderland Blvd./Old Oregon Trail	AWSC	C	11.8	B	-	13.4	B	-
2	I-5 SB Ramps/Old Oregon Trail	TWSC	C	10.1	B	-	12.3	B	-
3	I-5 NB Ramps/Old Oregon Trail	TWSC	C	14.8	B	-	16.1	C	-
4	Holiday Rd./Old Oregon Trail	TWSC	C	10.6	B	-	10.1	B	-

Notes:
TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay
AWSC = All Way Stop Control, average intersection LOS and Delay
Warrant = California MUTCD Signal Warrant 3

As shown in Table 3, all study intersections are projected to operate at acceptable LOS with the addition of project traffic under *Existing Plus Project* conditions.

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YEAR 2020 CONDITIONS

Year 2020 conditions are assumed as those that will exist in the year 2020 consistent with land use assumptions included within the 2008 version of the Shasta County Travel Demand Model.

TRAFFIC VOLUMES

The long-term Year 2020 traffic forecasts for this study have been developed using the following assumptions:

- 1% per year background growth compounded over 10 years
- Full buildout of the Moody Flat Quarry project
- Full buildout of the Shasta Wine Village project

A review of the Traffic Area Zones (TAZ's) in the Shasta County Regional Travel Demand Forecast Model (2008 version) indicated that with the exception of the Mountain Gate project, no other development would occur in the vicinity of the proposed project. Therefore, the Year 2020 forecasts were derived using the above assumptions.

YEAR 2020 NO PROJECT TRAFFIC OPERATIONS

Year 2020 No Project conditions AM and PM peak hour intersection traffic operations are presented below in Table 4.

TABLE 4
YEAR 2020 NO PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	Wonderland Blvd./Old Oregon Trail	AWSC	C	10.0	A	-	9.2	A	-
2	I-5 SB Ramps/Old Oregon Trail	TWSC	C	13.0	B	-	12.7	B	-
3	I-5 NB Ramps/Old Oregon Trail	TWSC	C	13.7	B	-	11.8	B	-
4	Holiday Rd./Old Oregon Trail	TWSC	C	12.8	B	-	12.2	B	-

Notes:
TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay
AWSC = All Way Stop Control, average intersection LOS and Delay
Warrant = California MUTCD Signal Warrant 3

As presented in Table 4, all of the study intersections are operating at acceptable LOS B or below under *Year 2020 No Project* conditions.

YEAR 2020 PLUS PROJECT CONDITIONS

Year 2020 Plus Project conditions were generated by adding Mountain Gate at Shasta Lake project trips to the *Year 2020 No Project* traffic volumes at all study intersections. Table 5 presents the *Year 2020 Plus Project* conditions intersection LOS.

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TABLE 5
YEAR 2020 PLUS PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	**Wonderland Blvd./Old Oregon Trail**	**AWSC**	**C**	**37.2**	**E**	**-**	**49.0**	**E**	**Yes**
2	**I-5 SB Ramps/Old Oregon Trail**	**TWSC**	**C**	20.5	C	-	**25.1**	**D**	No
3	**I-5 NB Ramps/Old Oregon Trail**	**TWSC**	**C**	**181.3**	**F**	**Yes**	**125.2**	**F**	**Yes**
4	Holiday Rd./Old Oregon Trail	TWSC	C	13.8	B	-	13.1	B	-

Notes:

Bolded entries indicate intersections operating at deficient LOS

TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay

AWSC = All Way Stop Control, average intersection LOS and Delay

Warrant = California MUTCD Signal Warrant 3

As shown in Table 5, three out of the four study intersections are projected to operate at unacceptable LOS D or worse conditions under *Year 2020 Plus Project* conditions.

YEAR 2030 CONDITIONS

Year 2030 conditions are assumed as those that will exist in the year 2030 consistent with land use assumptions included within the 2008 version of the Shasta County Travel Demand Model.

TRAFFIC VOLUMES

The long-term Year 2030 traffic forecasts for this study have been developed using the following assumptions:

- 1% per year background growth compounded over 20 years
- Full buildout of the Moody Flat Quarry project
- Full buildout of the Shasta Wine Village project

A review of the Traffic Area Zones (TAZ's) in the Shasta County Regional Travel Demand Forecast Model (2008 version) indicated that with the exception of the Mountain Gate project, no other development would occur in the vicinity of the proposed project. Therefore, the Year 2030 forecasts were derived using the above assumptions.

YEAR 2030 NO PROJECT TRAFFIC OPERATIONS

Year 2030 No Project conditions AM and PM peak hour intersection traffic operations are presented below in Table 6.

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TABLE 6
YEAR 2030 NO PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	Wonderland Blvd./Old Oregon Trail	AWSC	C	10.7	B	-	9.5	A	-
2	I-5 SB Ramps/Old Oregon Trail	TWSC	C	17.3	C	-	13.8	B	-
3	I-5 NB Ramps/Old Oregon Trail	TWSC	C	15.5	C	-	12.7	B	-
4	Holiday Rd./Old Oregon Trail	TWSC	C	14.2	B	-	13.1	B	-

Notes:
TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay
AWSC = All Way Stop Control, average intersection LOS and Delay
Warrant = California MUTCD Signal Warrant 3

As presented in Table 6, all of the study intersections are operating at acceptable LOS C or below under *Year 2030 No Project* conditions.

YEAR 2030 PLUS PROJECT CONDITIONS

Year 2030 Plus Project conditions were generated by adding Mountain Gate at Shasta Lake project trips to the *Year 2030 No Project* traffic volumes at all study intersections. Table 7 presents the *Year 2030 Plus Project* conditions intersection LOS.

TABLE 7
YEAR 2030 PLUS PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay (sec)	LOS	Warrant Met?	Delay (sec)	LOS	Warrant Met?
1	**Wonderland Blvd./Old Oregon Trail**	**AWSC**	**C**	**38.7**	**E**	**-**	**54.2**	**F**	**Yes**
2	**I-5 SB Ramps/Old Oregon Trail**	**TWSC**	**C**	**32.9**	**D**	**No**	**36.2**	**E**	**No**
3	**I-5 NB Ramps/Old Oregon Trail**	**TWSC**	**C**	**246.1**	**F**	**Yes**	**176.4**	**F**	**Yes**
4	Holiday Rd./Old Oregon Trail	TWSC	C	15.3	C	-	14.2	B	-

Notes:
Bolded entries indicate intersections operating at deficient LOS
TWSC = Two Way Stop Control, LOS and Delay based on worse case approach's LOS and Delay
AWSC = All Way Stop Control, average intersection LOS and Delay
Warrant = California MUTCD Signal Warrant 3

As shown in Table 7, three out of the four study intersections are projected to operate at unacceptable LOS D or worse conditions under *Year 2030 Plus Project* conditions.

YEAR 2020 AND YEAR 2030 PLUS PROJECT CONDITIONS RECOMMENDATIONS

Mountain Gate Boulevard Interchange Improvement Alternatives

The following two improvement alternatives that would provide acceptable LOS and accommodate the 95th percentile queues are recommended.

Signal Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*
    - Realignment of the intersection to ±250 feet west of its existing location (to provide

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450 feet minimum intersection spacing in conformance with the Caltrans Highway Design Manual)
- Signalization
- Exclusive left and right turn lanes in the eastbound and westbound approaches
- Permitted (permissive) phasing in the northbound and southbound approaches

- *I-5 SB Ramps/Mountain Gate Road – Intersection #2*

  - Exclusive eastbound right turn lane

- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*

  - Signalization
  - Exclusive right turn lane in the northbound and westbound approaches
  - Split phasing in the eastbound and westbound approaches

Roundabout Alternative

- *Wonderland Boulevard/Mountain Gate Road – Intersection #1*

  - Modern Roundabout

- *I-5 SB Ramps/Mountain Gate Road – Intersection #2*

  - Exclusive eastbound right turn lane

- *I-5 NB Ramps/Mountain Gate Road – Intersection #3*

  - Modern Roundabout

The above-identified improvements to the I-5/Mountain Gate Road Interchange are identified in the City's Major Road (Traffic) Impact Fee Program.

ANALYSIS OF OTHER STUDY LOCATIONS – AUGUST 2008 TIAR

Analysis of other study locations analyzed within the August 2008 TIAR is not necessary for the following reasons:

1. The only two (2) significant pending projects that impact the Mt Gate at Shasta project are the Moody Flat Quarry and the Shasta Wine Village. It was determined that the immediate impact of these projects will be to the I-5/Mountain Gate interchange. Impacts associated with both of these projects have been addressed previously via this updated analysis of the I-5/Mountain Gate Interchange.

2. Due to the "Great Recession" the recent traffic counts indicate that the 2007/2008 traffic counts are either equal to or higher than the 2011 data. The following tables provide a comparison between the 2007/2008 counts versus 2011 counts demonstrating that the traffic counts used in 2008 TIAR are adequate.

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TABLE 8
VOLUME COMPARISON AT THE MOUNTAIN GATE/I-5 INTERCHANGE – STUDY INTERSECTIONS

#	Intersection	AM Peak Hour			PM Peak Hour		
		2007/2008	2011	Delta	2007/2008	2011	Delta
1	Wonderland Blvd./Old Oregon Trail	348	315	-33	272	244	-28
2	I-5 SB Ramps/Old Oregon Trail	438	393	-45	346	306	-40
3	I-5 NB Ramps/Old Oregon Trail	356	363	7	354	286	-68
4	Holiday Rd./Old Oregon Trail	240	266	26	247	230	-17
	Totals	1382	1337	**-45**	1219	1066	**-153**

Source: Counts conducted for the Mountain Gate project (2007/2008) and 2011 counts.

At the I-5/Mountain Gate interchange, when compared to 2011, the 2007/2008 volume is greater by approximately 4% and 12% for the AM and PM peak periods, respectively.

TABLE 9
VOLUME COMPARISON ON I-5 IN THE PROJECT VICINITY – FREEWAY MAINLINE SEGMENTS

I-5 Segment	2007/2008	2011	Delta
south-of Pine Grove	31000	28500	-2500
south-ofJCT. Route 151	23000	21000	-2000
south-of Mountain Gate	21700	21000	-700
south-of Fawndale	20600	19500	-1100
Totals	96300	90000	**-6300**

Source: Caltrans counts.

At the I-5 segments in the vicinity of the interchange, when compared to 2011, the 2007/2008 volumes are greater by approximately 7%.

TABLE 9
VOLUME COMPARISON AT I-5 RAMPS IN THE PROJECT VICINITY – RAMP JUNCTIONS

PM	RAMP DESCRIPTION	2006 ADT	2009 ADT	Delta
20.9	SB ON FROM PINE GROVE	3200	2700	-500
20.9	NB OFF TO PINE GROVE	3450	2950	-500
21.1	NB ON FROM PINE GROVE	610	610	0
21.1	SB OFF TO PINE GROVE	590	500	-90
21.8	NB OFF TO RTE 151	6000	5000	-1000
22	NB ON FROM RTE 151	760	1050	290
22	SB ON FROM RTE 151	6000	5300	-700
22.3	SB OFF TO RTE 151	1000	1050	50
23.9	NB OFF TO MTN GATE	1750	1400	-350
23.9	SB ON FROM MTN GATE	1800	1450	-350
24.2	SB OFF TO MTN GATE	450	400	-50
24.3	NB ON FROM MTN GATE	440	420	-20
	Totals	4440	3670	**-770**

Source: Caltrans counts.

At the ramp junctions in the vicinity of the interchange, when compared to 2009 (2011 not available), the 2006 (2007/2008 not available) volumes are greater by approximately 17%.

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3. The August 2008 study used the 2007 Shasta County Regional Travel Demand Model. Since that time, the Model has been updated and projects lower future year traffic volumes.

CALTRANS REQUEST FOR THE TRAVEL DEMAND MODEL – AUGUST 2008 TIAR

The following section provides a screen shot of the TAZ structure within the original TDM (2008) and the land use inputs for TAZ's 814, 820 and 856.

TABLE 10
TAZ 814, 820 AND 856 RESIDENTIAL USES

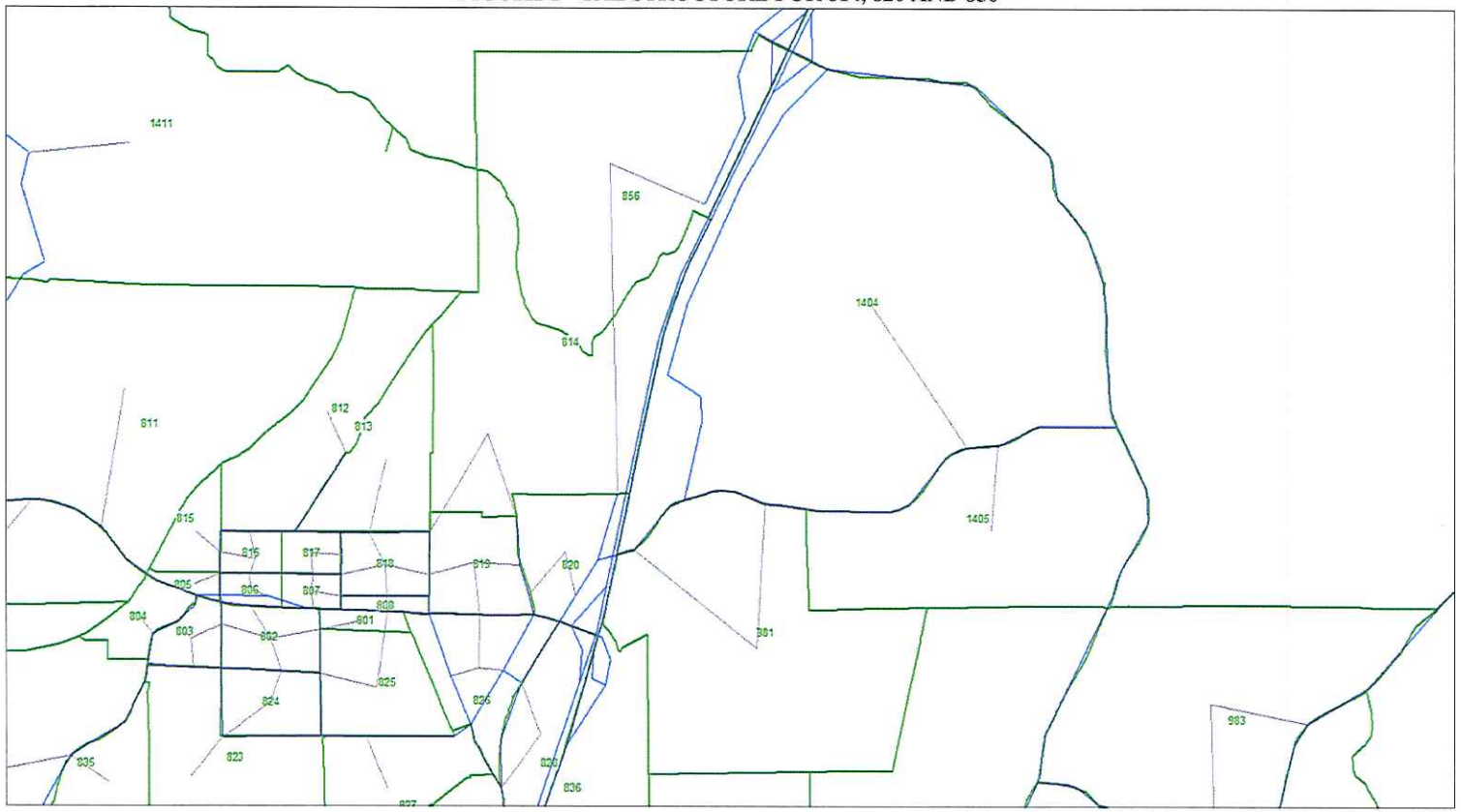
			1	2	3	4	5	6	7
			Population	SF Detached	MF Attached	Mobile Home	Mobile Home Park	Senior Housing	Recreational Homes
TAZ	Jurisdiction	Community	Persons	Dwelling Units	Dwelling Units	Dwelling Units	Dwelling Units	Dwelling Units	Dwelling Units
814	Shasta Lake	Shasta Lake	1981	180	513	15	0	0	0
820	Shasta Lake	Shasta Lake	14	4	0	0	0	0	0
856	Shasta Lake	Shasta Lake	1807	750	0	0	0	0	0
TOTAL			**3,803**	**934**	**513**	**15**	**0**	**0**	**0**

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TABLE 11
TAZ 814, 820 AND 856 NON-RESIDENTIAL USES

			Service Commercial	Retail	Retail High	Retail Warehouse	Office	School	Hotel	Restaurant	Restaurant High
TAZ	Jurisdiction	Community	Employees	Employees	Employees	Employees	Employees	Employees	Employees	Employees	Employees
814	Shasta Lake	Shasta Lake	4	0	0	0	0	0	0	0	0
820	Shasta Lake	Shasta Lake	101	0	12	0	0	55	2	2	40
856	Shasta Lake	Shasta Lake	0	0	0	0	0	0	0	0	0
TOTAL			**105**	**0**	**12**	**0**	**0**	**55**	**2**	**2**	**40**

FIGURE 1 - TAZ STRUCTURE FOR 814, 820 AND 856



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Appendix 4.4-1

Construction Emissions

Pounds per day

Off-Site Water Storage Tank - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Water Storage Tank	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/13/2014	10/24/2014
tblConstructionPhase	PhaseStartDate	1/25/2014	6/7/2014
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	18.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	3.5102	27.2428	18.4835	0.0259	0.8349	1.7887	2.2224	0.4356	1.6493	1.7608	0.0000	2,624.1442	2,624.1442	0.6705	0.0000	2,638.2243
Total	**3.5102**	**27.2428**	**18.4835**	**0.0259**	**0.8349**	**1.7887**	**2.2224**	**0.4356**	**1.6493**	**1.7608**	**0.0000**	**2,624.1442**	**2,624.1442**	**0.6705**	**0.0000**	**2,638.2243**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	3.5102	27.2428	18.4835	0.0259	0.8349	1.7887	2.2224	0.4356	1.6493	1.7608	0.0000	2,624.1442	2,624.1442	0.6705	0.0000	2,638.2243
Total	**3.5102**	**27.2428**	**18.4835**	**0.0259**	**0.8349**	**1.7887**	**2.2224**	**0.4356**	**1.6493**	**1.7608**	**0.0000**	**2,624.1442**	**2,624.1442**	**0.6705**	**0.0000**	**2,638.2243**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/15/2014	1/15/2014	5	1	
2	Grading	Grading	1/16/2014	1/17/2014	5	2	
3	Paving	Paving	1/18/2014	1/24/2014	5	5	
4	Building Construction	Building Construction	6/7/2014	10/24/2014	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Building Construction	Pavers	1	7.00	125	0.42
Building Construction	Rollers	1	7.00	80	0.38
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	8.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.4341	14.4817	7.3936	9.3700e-003		0.8920	0.8920		0.8206	0.8206		995.1971	995.1971	0.2941		1,001.3730
Total	**1.4341**	**14.4817**	**7.3936**	**9.3700e-003**	**0.5303**	**0.8920**	**1.4223**	**0.0573**	**0.8206**	**0.8779**		**995.1971**	**995.1971**	**0.2941**		**1,001.3730**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1286	0.0358	0.4478	5.3000e-004	0.0411	4.4000e-004	0.0415	0.0109	3.9000e-004	0.0113		46.6701	46.6701	3.1900e-003		46.7372
Total	**0.1286**	**0.0358**	**0.4478**	**5.3000e-004**	**0.0411**	**4.4000e-004**	**0.0415**	**0.0109**	**3.9000e-004**	**0.0113**		**46.6701**	**46.6701**	**3.1900e-003**		**46.7372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	1.4341	14.4817	7.3936	9.3700e-003		0.8920	0.8920		0.8206	0.8206	0.0000	995.1971	995.1971	0.2941		1,001.3730
Total	**1.4341**	**14.4817**	**7.3936**	**9.3700e-003**	**0.5303**	**0.8920**	**1.4223**	**0.0573**	**0.8206**	**0.8779**	**0.0000**	**995.1971**	**995.1971**	**0.2941**		**1,001.3730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1286	0.0358	0.4478	5.3000e-004	0.0411	4.4000e-004	0.0415	0.0109	3.9000e-004	0.0113		46.6701	46.6701	3.1900e-003		46.7372
Total	**0.1286**	**0.0358**	**0.4478**	**5.3000e-004**	**0.0411**	**4.4000e-004**	**0.0415**	**0.0109**	**3.9000e-004**	**0.0113**		**46.6701**	**46.6701**	**3.1900e-003**		**46.7372**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4929	12.4922	8.8528	0.0121		0.9304	0.9304		0.8904	0.8904		1,207.2469	1,207.2469	0.2515		1,212.5281
Total	**1.4929**	**12.4922**	**8.8528**	**0.0121**	**0.7528**	**0.9304**	**1.6832**	**0.4138**	**0.8904**	**1.3041**		**1,207.2469**	**1,207.2469**	**0.2515**		**1,212.5281**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2572	0.0715	0.8956	1.0600e-003	0.0822	8.8000e-004	0.0830	0.0218	7.8000e-004	0.0226		93.3402	93.3402	6.3900e-003		93.4743
Total	**0.2572**	**0.0715**	**0.8956**	**1.0600e-003**	**0.0822**	**8.8000e-004**	**0.0830**	**0.0218**	**7.8000e-004**	**0.0226**		**93.3402**	**93.3402**	**6.3900e-003**		**93.4743**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4929	12.4922	8.8528	0.0121		0.9304	0.9304		0.8904	0.8904	0.0000	1,207.2469	1,207.2469	0.2515		1,212.5281
Total	**1.4929**	**12.4922**	**8.8528**	**0.0121**	**0.7528**	**0.9304**	**1.6832**	**0.4138**	**0.8904**	**1.3041**	**0.0000**	**1,207.2469**	**1,207.2469**	**0.2515**		**1,212.5281**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2572	0.0715	0.8956	1.0600e-003	0.0822	8.8000e-004	0.0830	0.0218	7.8000e-004	0.0226		93.3402	93.3402	6.3900e-003		93.4743
Total	**0.2572**	**0.0715**	**0.8956**	**1.0600e-003**	**0.0822**	**8.8000e-004**	**0.0830**	**0.0218**	**7.8000e-004**	**0.0226**		**93.3402**	**93.3402**	**6.3900e-003**		**93.4743**

3.4 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2331	11.8542	7.3554	0.0111		0.7457	0.7457		0.6898	0.6898		1,103.2826	1,103.2826	0.2973		1,109.5248
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2331**	**11.8542**	**7.3554**	**0.0111**		**0.7457**	**0.7457**		**0.6898**	**0.6898**		**1,103.2826**	**1,103.2826**	**0.2973**		**1,109.5248**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2331	11.8542	7.3554	0.0111		0.7457	0.7457		0.6898	0.6898	0.0000	1,103.2826	1,103.2826	0.2973		1,109.5248
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2331**	**11.8542**	**7.3554**	**0.0111**		**0.7457**	**0.7457**		**0.6898**	**0.6898**	**0.0000**	**1,103.2826**	**1,103.2826**	**0.2973**		**1,109.5248**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.5 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7261	26.6873	15.6973	0.0224		1.7791	1.7791		1.6405	1.6405		2,307.6322	2,307.6322	0.6532		2,321.3483
Total	**2.7261**	**26.6873**	**15.6973**	**0.0224**		**1.7791**	**1.7791**		**1.6405**	**1.6405**		**2,307.6322**	**2,307.6322**	**0.6532**		**2,321.3483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1153	0.3696	0.4577	7.2000e-004	0.0345	7.3200e-003	0.0418	9.2600e-003	6.7200e-003	0.0160		73.8275	73.8275	7.3000e-004		73.8428
Worker	0.6687	0.1859	2.3286	2.7600e-003	0.3992	2.3000e-003	0.4015	0.1022	2.0400e-003	0.1043		242.6845	242.6845	0.0166		243.0332
Total	**0.7841**	**0.5555**	**2.7863**	**3.4800e-003**	**0.4337**	**9.6200e-003**	**0.4433**	**0.1115**	**8.7600e-003**	**0.1202**		**316.5120**	**316.5120**	**0.0173**		**316.8760**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.7261	26.6873	15.6973	0.0224		1.7791	1.7791		1.6405	1.6405	0.0000	2,307.6322	2,307.6322	0.6532		2,321.3483
Total	**2.7261**	**26.6873**	**15.6973**	**0.0224**		**1.7791**	**1.7791**		**1.6405**	**1.6405**	**0.0000**	**2,307.6322**	**2,307.6322**	**0.6532**		**2,321.3483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1153	0.3696	0.4577	7.2000e-004	0.0345	7.3200e-003	0.0418	9.2600e-003	6.7200e-003	0.0160		73.8275	73.8275	7.3000e-004		73.8428
Worker	0.6687	0.1859	2.3286	2.7600e-003	0.3992	2.3000e-003	0.4015	0.1022	2.0400e-003	0.1043		242.6845	242.6845	0.0166		243.0332
Total	**0.7841**	**0.5555**	**2.7863**	**3.4800e-003**	**0.4337**	**9.6200e-003**	**0.4433**	**0.1115**	**8.7600e-003**	**0.1202**		**316.5120**	**316.5120**	**0.0173**		**316.8760**

Area C - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	7.30	Acre	7.30	317,988.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading - Acreage = 7.3

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	4/8/2014	2/24/2015
tblConstructionPhase	PhaseStartDate	3/12/2014	1/28/2015
tblGrading	AcresOfGrading	10.00	7.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	2.6555	25.2684	16.1244	0.0239	0.1232	1.4160	1.5392	0.0327	1.3027	1.3354	0.0000	2,474.9152	2,474.9152	0.7070	0.0000	2,489.7614
Total	**8.4095**	**83.0169**	**60.6973**	**0.0649**	**18.3373**	**4.5553**	**22.8927**	**10.0026**	**4.1908**	**14.1934**	**0.0000**	**6,798.8189**	**6,798.8189**	**1.9466**	**0.0000**	**6,839.6969**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	2.6555	25.2684	16.1244	0.0239	0.1232	1.4160	1.5392	0.0327	1.3027	1.3354	0.0000	2,474.9152	2,474.9152	0.7070	0.0000	2,489.7614
Total	**8.4095**	**83.0169**	**60.6973**	**0.0649**	**18.3373**	**4.5553**	**22.8927**	**10.0026**	**4.1908**	**14.1934**	**0.0000**	**6,798.8189**	**6,798.8189**	**1.9466**	**0.0000**	**6,839.6969**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Paving	Paving	1/28/2015	2/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4092	0.0000	6.4092	3.3520	0.0000	3.3520			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817		3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4092**	**2.3714**	**8.7806**	**3.3520**	**2.1817**	**5.5338**		**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4092	0.0000	6.4092	3.3520	0.0000	3.3520			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817	0.0000	3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4092**	**2.3714**	**8.7806**	**3.3520**	**2.1817**	**5.5338**	**0.0000**	**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

3.4 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Area D - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	176.00	Dwelling Unit	27.90	176,000.00	503

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 27.9

Construction Phase - Painting phase = 44 days

Grading - Total acreage = 27.9

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	44.00
tblGrading	AcresOfGrading	112.50	27.90
tblLandUse	LotAcreage	11.00	27.90
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.8648	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	7.1057	32.8188	30.8876	0.0448	1.1698	2.1620	3.3317	0.3129	2.0317	2.3446	0.0000	4,293.9523	4,293.9523	0.7500	0.0000	4,309.7019
Year Three	126.0119	22.4664	15.8042	0.0239	0.2054	1.2621	1.3853	0.0545	1.1611	1.1938	0.0000	2,446.4368	2,446.4368	0.7062	0.0000	2,461.2661
Total	**140.9824**	**136.1493**	**100.0662**	**0.1326**	**19.5893**	**7.3050**	**26.0705**	**10.3372**	**6.7632**	**16.3963**	**0.0000**	**13,481.9033**	**13,481.9033**	**3.4059**	**0.0000**	**13,553.4278**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.8648	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	7.1057	32.8188	30.8876	0.0448	1.1698	2.1620	3.3317	0.3129	2.0317	2.3446	0.0000	4,293.9523	4,293.9523	0.7500	0.0000	4,309.7019
Tear Three	126.0119	22.4664	15.8042	0.0239	0.2054	1.2621	1.3853	0.0545	1.1611	1.1938	0.0000	2,446.4368	2,446.4368	0.7062	0.0000	2,461.2661
Total	**140.9824**	**136.1493**	**100.0662**	**0.1326**	**19.5893**	**7.3050**	**26.0705**	**10.3372**	**6.7632**	**16.3963**	**0.0000**	**13,481.9033**	**13,481.9033**	**3.4059**	**0.0000**	**13,553.4278**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/28/2014	5	20	
2	Grading	Grading	1/29/2014	4/1/2014	5	45	
3	Building Construction	Building Construction	4/2/2014	12/8/2015	5	440	
4	Paving	Paving	12/9/2015	1/26/2016	5	35	
5	Architectural Coating	Architectural Coating	1/27/2016	3/28/2016	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 27.9

Acres of Paving: 0

Residential Indoor: 356,400; Residential Outdoor: 118,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42

Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	127.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6796	0.0000	6.6796	3.3812	0.0000	3.3812			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6796**	**3.8792**	**10.5588**	**3.3812**	**3.5689**	**6.9501**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6796	0.0000	6.6796	3.3812	0.0000	3.3812			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6796**	**3.8792**	**10.5588**	**3.3812**	**3.5689**	**6.9501**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7303	2.3408	2.8989	4.5800e-003	0.1265	0.0464	0.1729	0.0361	0.0426	0.0787		467.5744	467.5744	4.6100e-003		467.6711
Worker	3.2665	0.9082	11.3741	0.0135	1.0433	0.0112	1.0545	0.2767	9.9700e-003	0.2867		1,185.4205	1,185.4205	0.0811		1,187.1236
Total	**3.9969**	**3.2490**	**14.2730**	**0.0181**	**1.1698**	**0.0576**	**1.2274**	**0.3129**	**0.0526**	**0.3654**		**1,652.9948**	**1,652.9948**	**0.0857**		**1,654.7947**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7303	2.3408	2.8989	4.5800e-003	0.1265	0.0464	0.1729	0.0361	0.0426	0.0787		467.5744	467.5744	4.6100e-003		467.6711
Worker	3.2665	0.9082	11.3741	0.0135	1.0433	0.0112	1.0545	0.2767	9.9700e-003	0.2867		1,185.4205	1,185.4205	0.0811		1,187.1236
Total	**3.9969**	**3.2490**	**14.2730**	**0.0181**	**1.1698**	**0.0576**	**1.2274**	**0.3129**	**0.0526**	**0.3654**		**1,652.9948**	**1,652.9948**	**0.0857**		**1,654.7947**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5822	2.0050	2.4377	4.5600e-003	0.1265	0.0352	0.1617	0.0361	0.0323	0.0685		461.2330	461.2330	3.9700e-003		461.3164
Worker	2.8645	0.7838	9.7053	0.0134	1.0433	0.0101	1.0533	0.2767	8.9900e-003	0.2857		1,143.1423	1,143.1423	0.0712		1,144.6371
Total	**3.4466**	**2.7888**	**12.1431**	**0.0180**	**1.1698**	**0.0452**	**1.2150**	**0.3129**	**0.0413**	**0.3542**		**1,604.3752**	**1,604.3752**	**0.0752**		**1,605.9536**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5822	2.0050	2.4377	4.5600e-003	0.1265	0.0352	0.1617	0.0361	0.0323	0.0685		461.2330	461.2330	3.9700e-003		461.3164
Worker	2.8645	0.7838	9.7053	0.0134	1.0433	0.0101	1.0533	0.2767	8.9900e-003	0.2857		1,143.1423	1,143.1423	0.0712		1,144.6371
Total	**3.4466**	**2.7888**	**12.1431**	**0.0180**	**1.1698**	**0.0452**	**1.2150**	**0.3129**	**0.0413**	**0.3542**		**1,604.3752**	**1,604.3752**	**0.0752**		**1,605.9536**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.5 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

3.6 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	125.1450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**125.5135**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4984	0.1342	1.6444	2.6400e-003	0.2054	1.8200e-003	0.2072	0.0545	1.6400e-003	0.0561		216.7668	216.7668	0.0124		217.0277
Total	**0.4984**	**0.1342**	**1.6444**	**2.6400e-003**	**0.2054**	**1.8200e-003**	**0.2072**	**0.0545**	**1.6400e-003**	**0.0561**		**216.7668**	**216.7668**	**0.0124**		**217.0277**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	125.1450					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**125.5135**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4984	0.1342	1.6444	2.6400e-003	0.2054	1.8200e-003	0.2072	0.0545	1.6400e-003	0.0561		216.7668	216.7668	0.0124		217.0277
Total	**0.4984**	**0.1342**	**1.6444**	**2.6400e-003**	**0.2054**	**1.8200e-003**	**0.2072**	**0.0545**	**1.6400e-003**	**0.0561**		**216.7668**	**216.7668**	**0.0124**		**217.0277**

Area E - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	142.00	Dwelling Unit	22.50	142,000.00	406

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 22.5

Construction Phase - Painting phase = 35 days

Grading - Acreage = 22.5

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	35.00
tblGrading	AcresOfGrading	87.50	22.50
tblLandUse	LotAcreage	8.88	22.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	127.7905	32.2424	28.4639	0.0412	0.9378	2.1526	3.0904	0.2508	2.0231	2.2739	0.0000	3,971.8227	3,971.8227	0.7351	0.0000	3,987.2604
Total	**135.1529**	**113.1064**	**81.8382**	**0.1051**	**19.1519**	**6.0336**	**24.4438**	**10.2207**	**5.5936**	**15.1319**	**0.0000**	**10,713.3368**	**10,713.3368**	**2.6849**	**0.0000**	**10,769.7202**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	127.7905	32.2424	28.4639	0.0412	0.9378	2.1526	3.0904	0.2508	2.0231	2.2739	0.0000	3,971.8227	3,971.8227	0.7351	0.0000	3,987.2604
Total	**135.1529**	**113.1064**	**81.8382**	**0.1051**	**19.1519**	**6.0336**	**24.4438**	**10.2207**	**5.5936**	**15.1319**	**0.0000**	**10,713.3368**	**10,713.3368**	**2.6849**	**0.0000**	**10,769.7202**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	4/1/2014	5	35	
3	Building Construction	Building Construction	4/2/2014	9/1/2015	5	370	
4	Paving	Paving	9/2/2015	9/29/2015	5	20	
5	Architectural Coating	Architectural Coating	9/30/2015	11/17/2015	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 22.5

Acres of Paving: 0

Residential Indoor: 287,550; Residential Outdoor: 95,850; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	102.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7038	0.0000	6.7038	3.3838	0.0000	3.3838			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7038**	**3.8792**	**10.5830**	**3.3838**	**3.5689**	**6.9527**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7038	0.0000	6.7038	3.3838	0.0000	3.3838			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7038**	**3.8792**	**10.5830**	**3.3838**	**3.5689**	**6.9527**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5766	1.8480	2.2886	3.6200e-003	0.0999	0.0366	0.1365	0.0285	0.0336	0.0621		369.1377	369.1377	3.6400e-003		369.2140
Worker	2.6235	0.7294	9.1351	0.0108	0.8379	9.0100e-003	0.8469	0.2223	8.0000e-003	0.2303		952.0700	952.0700	0.0651		953.4379
Total	**3.2001**	**2.5774**	**11.4237**	**0.0144**	**0.9378**	**0.0456**	**0.9834**	**0.2508**	**0.0416**	**0.2924**		**1,321.2076**	**1,321.2076**	**0.0688**		**1,322.6519**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5766	1.8480	2.2886	3.6200e-003	0.0999	0.0366	0.1365	0.0285	0.0336	0.0621		369.1377	369.1377	3.6400e-003		369.2140
Worker	2.6235	0.7294	9.1351	0.0108	0.8379	9.0100e-003	0.8469	0.2223	8.0000e-003	0.2303		952.0700	952.0700	0.0651		953.4379
Total	**3.2001**	**2.5774**	**11.4237**	**0.0144**	**0.9378**	**0.0456**	**0.9834**	**0.2508**	**0.0416**	**0.2924**		**1,321.2076**	**1,321.2076**	**0.0688**		**1,322.6519**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4596	1.5829	1.9245	3.6000e-003	0.0999	0.0278	0.1276	0.0285	0.0255	0.0540		364.1313	364.1313	3.1400e-003		364.1972
Worker	2.3006	0.6295	7.7948	0.0108	0.8379	8.0700e-003	0.8460	0.2223	7.2200e-003	0.2295		918.1143	918.1143	0.0572		919.3149
Total	**2.7602**	**2.2124**	**9.7194**	**0.0144**	**0.9378**	**0.0359**	**0.9736**	**0.2508**	**0.0328**	**0.2835**		**1,282.2455**	**1,282.2455**	**0.0603**		**1,283.5121**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4596	1.5829	1.9245	3.6000e-003	0.0999	0.0278	0.1276	0.0285	0.0255	0.0540		364.1313	364.1313	3.1400e-003		364.1972
Worker	2.3006	0.6295	7.7948	0.0108	0.8379	8.0700e-003	0.8460	0.2223	7.2200e-003	0.2295		918.1143	918.1143	0.0572		919.3149
Total	**2.7602**	**2.2124**	**9.7194**	**0.0144**	**0.9378**	**0.0359**	**0.9736**	**0.2508**	**0.0328**	**0.2835**		**1,282.2455**	**1,282.2455**	**0.0603**		**1,283.5121**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	126.9328					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**127.3394**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.4511**	**0.1234**	**1.5284**	**2.1200e-003**	**0.1643**	**1.5800e-003**	**0.1659**	**0.0436**	**1.4200e-003**	**0.0450**		**180.0224**	**180.0224**	**0.0112**		**180.2578**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	126.9328					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**127.3394**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.4511**	**0.1234**	**1.5284**	**2.1200e-003**	**0.1643**	**1.5800e-003**	**0.1659**	**0.0436**	**1.4200e-003**	**0.0450**		**180.0224**	**180.0224**	**0.0112**		**180.2578**

Area F - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	30.00	Dwelling Unit	16.30	54,000.00	86

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 16.3

Construction Phase - Painting Phase = 30 days

Grading - Acreage = 16.3

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	16.30
tblLandUse	LotAcreage	9.74	16.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	56.7670	30.4144	19.9701	0.0287	0.1232	2.1232	2.2335	0.0327	1.9963	2.0260	0.0000	2,861.4157	2,861.4157	0.7070	0.0000	2,876.2620
Total	**64.1294**	**111.2785**	**73.3444**	**0.0926**	**18.3373**	**6.0041**	**23.5869**	**10.0026**	**5.5667**	**14.8840**	**0.0000**	**9,602.9298**	**9,602.9298**	**2.6568**	**0.0000**	**9,658.7218**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	56.7670	30.4144	19.9701	0.0287	0.1232	2.1232	2.2335	0.0327	1.9963	2.0260	0.0000	2,861.4157	2,861.4157	0.7070	0.0000	2,876.2620
Total	**64.1294**	**111.2785**	**73.3444**	**0.0926**	**18.3373**	**6.0041**	**23.5869**	**10.0026**	**5.5667**	**14.8840**	**0.0000**	**9,602.9298**	**9,602.9298**	**2.6568**	**0.0000**	**9,658.7218**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.3

Acres of Paving: 0

Residential Indoor: 109,350; Residential Outdoor: 36,450; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	11.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5983	0.0000	6.5983	3.3724	0.0000	3.3724			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.5983**	**3.8792**	**10.4775**	**3.3724**	**3.5689**	**6.9413**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5983	0.0000	6.5983	3.3724	0.0000	3.3724			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.5983**	**3.8792**	**10.4775**	**3.3724**	**3.5689**	**6.9413**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1153	0.3696	0.4577	7.2000e-004	0.0200	7.3200e-003	0.0273	5.7000e-003	6.7200e-003	0.0124		73.8275	73.8275	7.3000e-004		73.8428
Worker	0.2829	0.0787	0.9852	1.1700e-003	0.0904	9.7000e-004	0.0913	0.0240	8.6000e-004	0.0248		102.6742	102.6742	7.0200e-003		102.8217
Total	**0.3983**	**0.4483**	**1.4429**	**1.8900e-003**	**0.1103**	**8.2900e-003**	**0.1186**	**0.0297**	**7.5800e-003**	**0.0373**		**176.5017**	**176.5017**	**7.7500e-003**		**176.6645**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1153	0.3696	0.4577	7.2000e-004	0.0200	7.3200e-003	0.0273	5.7000e-003	6.7200e-003	0.0124		73.8275	73.8275	7.3000e-004		73.8428
Worker	0.2829	0.0787	0.9852	1.1700e-003	0.0904	9.7000e-004	0.0913	0.0240	8.6000e-004	0.0248		102.6742	102.6742	7.0200e-003		102.8217
Total	**0.3983**	**0.4483**	**1.4429**	**1.8900e-003**	**0.1103**	**8.2900e-003**	**0.1186**	**0.0297**	**7.5800e-003**	**0.0373**		**176.5017**	**176.5017**	**7.7500e-003**		**176.6645**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0919	0.3166	0.3849	7.2000e-004	0.0200	5.5600e-003	0.0255	5.7000e-003	5.1100e-003	0.0108		72.8263	72.8263	6.3000e-004		72.8394
Worker	0.2481	0.0679	0.8406	1.1600e-003	0.0904	8.7000e-004	0.0912	0.0240	7.8000e-004	0.0248		99.0123	99.0123	6.1700e-003		99.1418
Total	**0.3400**	**0.3845**	**1.2255**	**1.8800e-003**	**0.1103**	**6.4300e-003**	**0.1168**	**0.0297**	**5.8900e-003**	**0.0356**		**171.8386**	**171.8386**	**6.8000e-003**		**171.9812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0919	0.3166	0.3849	7.2000e-004	0.0200	5.5600e-003	0.0255	5.7000e-003	5.1100e-003	0.0108		72.8263	72.8263	6.3000e-004		72.8394
Worker	0.2481	0.0679	0.8406	1.1600e-003	0.0904	8.7000e-004	0.0912	0.0240	7.8000e-004	0.0248		99.0123	99.0123	6.1700e-003		99.1418
Total	**0.3400**	**0.3845**	**1.2255**	**1.8800e-003**	**0.1103**	**6.4300e-003**	**0.1168**	**0.0297**	**5.8900e-003**	**0.0356**		**171.8386**	**171.8386**	**6.8000e-003**		**171.9812**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	56.3153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**56.7219**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0123	0.1528	2.1000e-004	0.0164	1.6000e-004	0.0166	4.3600e-003	1.4000e-004	4.5000e-003		18.0022	18.0022	1.1200e-003		18.0258
Total	**0.0451**	**0.0123**	**0.1528**	**2.1000e-004**	**0.0164**	**1.6000e-004**	**0.0166**	**4.3600e-003**	**1.4000e-004**	**4.5000e-003**		**18.0022**	**18.0022**	**1.1200e-003**		**18.0258**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	56.3153					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**56.7219**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0451	0.0123	0.1528	2.1000e-004	0.0164	1.6000e-004	0.0166	4.3600e-003	1.4000e-004	4.5000e-003		18.0022	18.0022	1.1200e-003		18.0258
Total	**0.0451**	**0.0123**	**0.1528**	**2.1000e-004**	**0.0164**	**1.6000e-004**	**0.0166**	**4.3600e-003**	**1.4000e-004**	**4.5000e-003**		**18.0022**	**18.0022**	**1.1200e-003**		**18.0258**

Area G - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	392.00	Dwelling Unit	43.50	392,000.00	1121

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 43.5

Construction Phase - Painting phase = 74 days

Grading - Acreage = 43.5

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	74.00
tblGrading	AcresOfGrading	187.50	43.50
tblLandUse	LotAcreage	24.50	43.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	12.7356	80.8641	53.3743	0.0669	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	11.3064	36.2025	45.6837	0.0667	2.5962	2.2168	4.8130	0.6943	2.0818	2.7761	0.0000	6,247.4606	6,247.4606	0.8417	0.0000	6,265.1356
Year Three	10.2187	33.8862	42.0172	0.0667	2.5962	2.0532	4.6494	0.6943	1.9270	2.6213	0.0000	6,121.9389	6,121.9389	0.8101	0.0000	6,138.9509
Year Four	167.0338	31.1218	38.0805	0.0666	2.5962	1.8551	4.4513	0.6943	1.7407	2.4351	0.0000	5,977.1003	5,977.1003	0.7803	0.0000	5,993.4871
Total	**201.2945**	**182.0745**	**179.1557**	**0.2668**	**26.0027**	**10.0061**	**35.2672**	**12.0529**	**9.3200**	**20.6905**	**0.0000**	**25,088.0139**	**25,088.0139**	**4.3819**	**0.0000**	**25,180.0335**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	12.7356	80.8641	53.3743	0.0669	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	11.3064	36.2025	45.6837	0.0667	2.5962	2.2168	4.8130	0.6943	2.0818	2.7761	0.0000	6,247.4606	6,247.4606	0.8417	0.0000	6,265.1356
Tear Three	10.2187	33.8862	42.0172	0.0667	2.5962	2.0532	4.6494	0.6943	1.9270	2.6213	0.0000	6,121.9389	6,121.9389	0.8101	0.0000	6,138.9509
Year Four	167.0338	31.1218	38.0805	0.0666	2.5962	1.8551	4.4513	0.6943	1.7407	2.4351	0.0000	5,977.1003	5,977.1003	0.7803	0.0000	5,993.4871
Total	**201.2945**	**182.0745**	**179.1557**	**0.2668**	**26.0027**	**10.0061**	**35.2672**	**12.0529**	**9.3200**	**20.6905**	**0.0000**	**25,088.0139**	**25,088.0139**	**4.3819**	**0.0000**	**25,180.0335**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2014	4/22/2014	5	30	
2	Grading	Grading	4/23/2014	8/5/2014	5	75	
3	Building Construction	Building Construction	8/6/2014	6/6/2017	5	740	
4	Paving	Paving	6/7/2017	8/22/2017	5	55	
5	Architectural Coating	Architectural Coating	8/23/2017	12/4/2017	5	74	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 43.5

Acres of Paving: 0

Residential Indoor: 793,800; Residential Outdoor: 264,600; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	282.00	42.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6372	0.0000	6.6372	3.3766	0.0000	3.3766			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6372**	**3.8792**	**10.5164**	**3.3766**	**3.5689**	**6.9455**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6372	0.0000	6.6372	3.3766	0.0000	3.3766			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6372**	**3.8792**	**10.5164**	**3.3766**	**3.5689**	**6.9455**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6144	5.1744	6.4081	0.0101	0.2796	0.1025	0.3821	0.0799	0.0942	0.1740		1,033.5855	1,033.5855	0.0102		1,033.7993
Worker	7.2532	2.0167	25.2559	0.0299	2.3166	0.0249	2.3415	0.6145	0.0221	0.6366		2,632.1934	2,632.1934	0.1801		2,635.9752
Total	**8.8676**	**7.1911**	**31.6640**	**0.0400**	**2.5962**	**0.1274**	**2.7236**	**0.6943**	**0.1163**	**0.8106**		**3,665.7789**	**3,665.7789**	**0.1903**		**3,669.7745**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6144	5.1744	6.4081	0.0101	0.2796	0.1025	0.3821	0.0799	0.0942	0.1740		1,033.5855	1,033.5855	0.0102		1,033.7993
Worker	7.2532	2.0167	25.2559	0.0299	2.3166	0.0249	2.3415	0.6145	0.0221	0.6366		2,632.1934	2,632.1934	0.1801		2,635.9752
Total	**8.8676**	**7.1911**	**31.6640**	**0.0400**	**2.5962**	**0.1274**	**2.7236**	**0.6943**	**0.1163**	**0.8106**		**3,665.7789**	**3,665.7789**	**0.1903**		**3,669.7745**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2869	4.4322	5.3887	0.0101	0.2796	0.0778	0.3574	0.0799	0.0715	0.1513		1,019.5676	1,019.5676	8.7900e-003		1,019.7521
Worker	6.3605	1.7404	21.5505	0.0298	2.3166	0.0223	2.3389	0.6145	0.0200	0.6344		2,538.3159	2,538.3159	0.1581		2,541.6352
Total	**7.6474**	**6.1725**	**26.9391**	**0.0399**	**2.5962**	**0.1001**	**2.6963**	**0.6943**	**0.0914**	**0.7858**		**3,557.8835**	**3,557.8835**	**0.1669**		**3,561.3873**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2869	4.4322	5.3887	0.0101	0.2796	0.0778	0.3574	0.0799	0.0715	0.1513		1,019.5676	1,019.5676	8.7900e-003		1,019.7521
Worker	6.3605	1.7404	21.5505	0.0298	2.3166	0.0223	2.3389	0.6145	0.0200	0.6344		2,538.3159	2,538.3159	0.1581		2,541.6352
Total	**7.6474**	**6.1725**	**26.9391**	**0.0399**	**2.5962**	**0.1001**	**2.6963**	**0.6943**	**0.0914**	**0.7858**		**3,557.8835**	**3,557.8835**	**0.1669**		**3,561.3873**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1906	3.8662	4.9623	0.0101	0.2797	0.0654	0.3450	0.0799	0.0601	0.1399		1,007.5228	1,007.5228	7.9600e-003		1,007.6900
Worker	5.6219	1.5136	18.5482	0.0298	2.3166	0.0205	2.3370	0.6145	0.0185	0.6329		2,445.1296	2,445.1296	0.1401		2,448.0719
Total	**6.8124**	**5.3799**	**23.5106**	**0.0398**	**2.5962**	**0.0858**	**2.6820**	**0.6943**	**0.0785**	**0.7729**		**3,452.6525**	**3,452.6525**	**0.1481**		**3,455.7619**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1906	3.8662	4.9623	0.0101	0.2797	0.0654	0.3450	0.0799	0.0601	0.1399		1,007.5228	1,007.5228	7.9600e-003		1,007.6900
Worker	5.6219	1.5136	18.5482	0.0298	2.3166	0.0205	2.3370	0.6145	0.0185	0.6329		2,445.1296	2,445.1296	0.1401		2,448.0719
Total	**6.8124**	**5.3799**	**23.5106**	**0.0398**	**2.5962**	**0.0858**	**2.6820**	**0.6943**	**0.0785**	**0.7729**		**3,452.6525**	**3,452.6525**	**0.1481**		**3,455.7619**

3.4 Building Construction - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.0461	3.4149	4.3446	0.0100	0.2797	0.0550	0.3347	0.0799	0.0506	0.1305		990.0470	990.0470	7.3900e-003		990.2022
Worker	4.8792	1.3012	15.6069	0.0297	2.3166	0.0188	2.3354	0.6145	0.0172	0.6316		2,347.2480	2,347.2480	0.1232		2,349.8359
Total	**5.9252**	**4.7161**	**19.9514**	**0.0398**	**2.5962**	**0.0739**	**2.6701**	**0.6943**	**0.0677**	**0.7621**		**3,337.2950**	**3,337.2950**	**0.1306**		**3,340.0381**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.0461	3.4149	4.3446	0.0100	0.2797	0.0550	0.3347	0.0799	0.0506	0.1305		990.0470	990.0470	7.3900e-003		990.2022
Worker	4.8792	1.3012	15.6069	0.0297	2.3166	0.0188	2.3354	0.6145	0.0172	0.6316		2,347.2480	2,347.2480	0.1232		2,349.8359
Total	**5.9252**	**4.7161**	**19.9514**	**0.0398**	**2.5962**	**0.0739**	**2.6701**	**0.6943**	**0.0677**	**0.7621**		**3,337.2950**	**3,337.2950**	**0.1306**		**3,340.0381**

3.5 Paving - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2595	0.0692	0.8302	1.5800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.1000e-004	0.0336		124.8536	124.8536	6.5500e-003		124.9913
Total	**0.2595**	**0.0692**	**0.8302**	**1.5800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.1000e-004**	**0.0336**		**124.8536**	**124.8536**	**6.5500e-003**		**124.9913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**	**0.0000**	**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2595	0.0692	0.8302	1.5800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.1000e-004	0.0336		124.8536	124.8536	6.5500e-003		124.9913
Total	**0.2595**	**0.0692**	**0.8302**	**1.5800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.1000e-004**	**0.0336**		**124.8536**	**124.8536**	**6.5500e-003**		**124.9913**

3.6 Architectural Coating - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	165.7326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**166.0649**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9689	0.2584	3.0992	5.9000e-003	0.4600	3.7400e-003	0.4638	0.1220	3.4100e-003	0.1254		466.1202	466.1202	0.0245		466.6341
Total	**0.9689**	**0.2584**	**3.0992**	**5.9000e-003**	**0.4600**	**3.7400e-003**	**0.4638**	**0.1220**	**3.4100e-003**	**0.1254**		**466.1202**	**466.1202**	**0.0245**		**466.6341**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	165.7326					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**166.0649**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9689	0.2584	3.0992	5.9000e-003	0.4600	3.7400e-003	0.4638	0.1220	3.4100e-003	0.1254		466.1202	466.1202	0.0245		466.6341
Total	**0.9689**	**0.2584**	**3.0992**	**5.9000e-003**	**0.4600**	**3.7400e-003**	**0.4638**	**0.1220**	**3.4100e-003**	**0.1254**		**466.1202**	**466.1202**	**0.0245**		**466.6341**

Area H - Phase 1

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fire Station	30.49	1000sqft	2.00	30,492.00	0
Apartments Low Rise	215.00	Dwelling Unit	11.90	215,000.00	615
Office Park	73.62	1000sqft	3.00	73,616.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 16.9

Construction Phase - Painting phase = 55 days

Grading - Area H = 16.9 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	300.00	550.00
tblConstructionPhase	PhaseEndDate	4/19/2016	5/5/2015
tblConstructionPhase	PhaseStartDate	3/23/2016	4/8/2015
tblGrading	AcresOfGrading	75.00	16.90
tblLandUse	LotAcreage	0.70	2.00
tblLandUse	LotAcreage	13.44	11.90
tblLandUse	LotAcreage	1.69	3.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	10.2410	80.8641	53.3743	0.0639	6.7838	3.8810	10.6648	3.4183	3.5704	6.9888	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	176.5568	60.6797	54.3680	0.0802	2.1228	3.6217	5.5556	0.5685	3.3745	3.8928	0.0000	7,827.7196	7,827.7196	1.4955	0.0000	7,859.1257
Year Three	8.2880	33.1976	35.5982	0.0562	1.8107	2.0433	3.8540	0.4857	1.9180	2.4037	0.0000	5,258.9184	5,258.9184	0.7630	0.0000	5,274.9417
Total	**195.0858**	**174.7414**	**143.3404**	**0.2003**	**10.7173**	**9.5460**	**20.0743**	**4.4725**	**8.8629**	**13.2853**	**0.0000**	**19,828.1521**	**19,828.1521**	**4.2083**	**0.0000**	**19,916.5272**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	10.2410	80.8641	53.3743	0.0639	6.7838	3.8810	10.6648	3.4183	3.5704	6.9888	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	176.5568	60.6797	54.3680	0.0802	2.1228	3.6217	5.5556	0.5685	3.3745	3.8928	0.0000	7,827.7196	7,827.7196	1.4955	0.0000	7,859.1257
Year Three	8.2880	33.1976	35.5982	0.0562	1.8107	2.0433	3.8540	0.4857	1.9180	2.4037	0.0000	5,258.9184	5,258.9184	0.7630	0.0000	5,274.9417
Total	**195.0858**	**174.7414**	**143.3404**	**0.2003**	**10.7173**	**9.5460**	**20.0743**	**4.4725**	**8.8629**	**13.2853**	**0.0000**	**19,828.1521**	**19,828.1521**	**4.2083**	**0.0000**	**19,916.5272**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2014	2/11/2014	5	30	
2	Building Construction	Building Construction	2/12/2014	3/22/2016	5	550	
3	Paving	Paving	4/8/2015	5/5/2015	5	20	
4	Architectural Coating	Architectural Coating	5/6/2015	7/21/2015	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.9

Acres of Paving: 0

Residential Indoor: 435,375; Residential Outdoor: 145,125; Non-Residential Indoor: 156,162; Non-Residential Outdoor: 52,054

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	188.00	40.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6195	0.0000	6.6195	3.3747	0.0000	3.3747			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6195**	**3.8792**	**10.4987**	**3.3747**	**3.5689**	**6.9436**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6195	0.0000	6.6195	3.3747	0.0000	3.3747			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6195**	**3.8792**	**10.4987**	**3.3747**	**3.5689**	**6.9436**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.3 Building Construction - Year three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5375	4.9280	6.1030	9.6400e-003	0.2663	0.0976	0.3639	0.0761	0.0897	0.1657		984.3671	984.3671	9.7000e-003		984.5707
Worker	4.8355	1.3444	16.8373	0.0199	1.5444	0.0166	1.5610	0.4096	0.0148	0.4244		1,754.7956	1,754.7956	0.1201		1,757.3168
Total	**6.3730**	**6.2725**	**22.9402**	**0.0296**	**1.8107**	**0.1142**	**1.9249**	**0.4857**	**0.1044**	**0.5901**		**2,739.1627**	**2,739.1627**	**0.1298**		**2,741.8875**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.5375	4.9280	6.1030	9.6400e-003	0.2663	0.0976	0.3639	0.0761	0.0897	0.1657		984.3671	984.3671	9.7000e-003		984.5707
Worker	4.8355	1.3444	16.8373	0.0199	1.5444	0.0166	1.5610	0.4096	0.0148	0.4244		1,754.7956	1,754.7956	0.1201		1,757.3168
Total	**6.3730**	**6.2725**	**22.9402**	**0.0296**	**1.8107**	**0.1142**	**1.9249**	**0.4857**	**0.1044**	**0.5901**		**2,739.1627**	**2,739.1627**	**0.1298**		**2,741.8875**

3.3 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2256	4.2211	5.1321	9.6000e-003	0.2663	0.0741	0.3404	0.0761	0.0681	0.1441		971.0168	971.0168	8.3700e-003		971.1925
Worker	4.2403	1.1603	14.3670	0.0199	1.5444	0.0149	1.5593	0.4096	0.0133	0.4230		1,692.2106	1,692.2106	0.1054		1,694.4235
Total	**5.4660**	**5.3814**	**19.4991**	**0.0295**	**1.8107**	**0.0890**	**1.8996**	**0.4857**	**0.0814**	**0.5671**		**2,663.2273**	**2,663.2273**	**0.1138**		**2,665.6160**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2256	4.2211	5.1321	9.6000e-003	0.2663	0.0741	0.3404	0.0761	0.0681	0.1441		971.0168	971.0168	8.3700e-003		971.1925
Worker	4.2403	1.1603	14.3670	0.0199	1.5444	0.0149	1.5593	0.4096	0.0133	0.4230		1,692.2106	1,692.2106	0.1054		1,694.4235
Total	**5.4660**	**5.3814**	**19.4991**	**0.0295**	**1.8107**	**0.0890**	**1.8996**	**0.4857**	**0.0814**	**0.5671**		**2,663.2273**	**2,663.2273**	**0.1138**		**2,665.6160**

3.3 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1339	3.6821	4.7260	9.5700e-003	0.2663	0.0623	0.3286	0.0761	0.0572	0.1333		959.5456	959.5456	7.5800e-003		959.7047
Worker	3.7479	1.0091	12.3655	0.0199	1.5444	0.0137	1.5580	0.4096	0.0123	0.4220		1,630.0864	1,630.0864	0.0934		1,632.0480
Total	**4.8818**	**4.6912**	**17.0915**	**0.0294**	**1.8107**	**0.0759**	**1.8866**	**0.4857**	**0.0695**	**0.5552**		**2,589.6320**	**2,589.6320**	**0.1010**		**2,591.7527**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.1339	3.6821	4.7260	9.5700e-003	0.2663	0.0623	0.3286	0.0761	0.0572	0.1333		959.5456	959.5456	7.5800e-003		959.7047
Worker	3.7479	1.0091	12.3655	0.0199	1.5444	0.0137	1.5580	0.4096	0.0123	0.4220		1,630.0864	1,630.0864	0.0934		1,632.0480
Total	**4.8818**	**4.6912**	**17.0915**	**0.0294**	**1.8107**	**0.0759**	**1.8866**	**0.4857**	**0.0695**	**0.5552**		**2,589.6320**	**2,589.6320**	**0.1010**		**2,591.7527**

3.4 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.5 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	166.1681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**166.5747**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.8571	0.2345	2.9040	4.0200e-003	0.3122	3.0100e-003	0.3152	0.0828	2.6900e-003	0.0855		342.0426	342.0426	0.0213		342.4899
Total	**0.8571**	**0.2345**	**2.9040**	**4.0200e-003**	**0.3122**	**3.0100e-003**	**0.3152**	**0.0828**	**2.6900e-003**	**0.0855**		**342.0426**	**342.0426**	**0.0213**		**342.4899**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	166.1681					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**166.5747**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.8571	0.2345	2.9040	4.0200e-003	0.3122	3.0100e-003	0.3152	0.0828	2.6900e-003	0.0855		342.0426	342.0426	0.0213		342.4899
Total	**0.8571**	**0.2345**	**2.9040**	**4.0200e-003**	**0.3122**	**3.0100e-003**	**0.3152**	**0.0828**	**2.6900e-003**	**0.0855**		**342.0426**	**342.0426**	**0.0213**		**342.4899**

Area A - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	121.97	1000sqft	11.20	121,968.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 11.2

Construction Phase - Painting phase = 30 days

Grading - Area A = 11.2 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	11.20
tblLandUse	LotAcreage	2.80	11.20
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	94.8073	32.3812	24.2910	0.0358	0.4535	2.1569	2.6104	0.1230	2.0272	2.1502	0.0000	3,526.1292	3,526.1292	0.7070	0.0000	3,540.9755
Total	**102.1698**	**113.2453**	**77.6653**	**0.0996**	**18.6676**	**6.0378**	**23.9638**	**10.0929**	**5.5976**	**15.0082**	**0.0000**	**10,267.6433**	**10,267.6433**	**2.6568**	**0.0000**	**10,323.4353**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	94.8073	32.3812	24.2910	0.0358	0.4535	2.1569	2.6104	0.1230	2.0272	2.1502	0.0000	3,526.1292	3,526.1292	0.7070	0.0000	3,540.9755
Total	**102.1698**	**113.2453**	**77.6653**	**0.0996**	**18.6676**	**6.0378**	**23.9638**	**10.0929**	**5.5976**	**15.0082**	**0.0000**	**10,267.6433**	**10,267.6433**	**2.6568**	**0.0000**	**10,323.4353**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 182,952; Non-Residential Outdoor: 60,984 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4180	0.0000	6.4180	3.3530	0.0000	3.3530			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4180**	**3.8792**	**10.2972**	**3.3530**	**3.5689**	**6.9219**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4180	0.0000	6.4180	3.3530	0.0000	3.3530			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4180**	**3.8792**	**10.2972**	**3.3530**	**3.5689**	**6.9219**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7688	2.4640	3.0515	4.8200e-003	0.1332	0.0488	0.1820	0.0380	0.0448	0.0829		492.1836	492.1836	4.8500e-003		492.2854
Worker	1.0031	0.2789	3.4928	4.1400e-003	0.3204	3.4500e-003	0.3238	0.0850	3.0600e-003	0.0880		364.0268	364.0268	0.0249		364.5498
Total	**1.7719**	**2.7429**	**6.5443**	**8.9600e-003**	**0.4535**	**0.0523**	**0.5058**	**0.1230**	**0.0479**	**0.1709**		**856.2103**	**856.2103**	**0.0298**		**856.8351**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.7688	2.4640	3.0515	4.8200e-003	0.1332	0.0488	0.1820	0.0380	0.0448	0.0829		492.1836	492.1836	4.8500e-003		492.2854
Worker	1.0031	0.2789	3.4928	4.1400e-003	0.3204	3.4500e-003	0.3238	0.0850	3.0600e-003	0.0880		364.0268	364.0268	0.0249		364.5498
Total	**1.7719**	**2.7429**	**6.5443**	**8.9600e-003**	**0.4535**	**0.0523**	**0.5058**	**0.1230**	**0.0479**	**0.1709**		**856.2103**	**856.2103**	**0.0298**		**856.8351**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6128	2.1106	2.5660	4.8000e-003	0.1331	0.0370	0.1702	0.0380	0.0340	0.0721		485.5084	485.5084	4.1800e-003		485.5962
Worker	0.8796	0.2407	2.9804	4.1300e-003	0.3204	3.0900e-003	0.3235	0.0850	2.7600e-003	0.0877		351.0437	351.0437	0.0219		351.5027
Total	**1.4925**	**2.3512**	**5.5464**	**8.9300e-003**	**0.4535**	**0.0401**	**0.4936**	**0.1230**	**0.0368**	**0.1598**		**836.5521**	**836.5521**	**0.0260**		**837.0990**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.6128	2.1106	2.5660	4.8000e-003	0.1331	0.0370	0.1702	0.0380	0.0340	0.0721		485.5084	485.5084	4.1800e-003		485.5962
Worker	0.8796	0.2407	2.9804	4.1300e-003	0.3204	3.0900e-003	0.3235	0.0850	2.7600e-003	0.0877		351.0437	351.0437	0.0219		351.5027
Total	**1.4925**	**2.3512**	**5.5464**	**8.9300e-003**	**0.4535**	**0.0401**	**0.4936**	**0.1230**	**0.0368**	**0.1598**		**836.5521**	**836.5521**	**0.0260**		**837.0990**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	94.2203					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**94.6269**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1804	0.0494	0.6114	8.5000e-004	0.0657	6.3000e-004	0.0664	0.0174	5.7000e-004	0.0180		72.0090	72.0090	4.4800e-003		72.1031
Total	**0.1804**	**0.0494**	**0.6114**	**8.5000e-004**	**0.0657**	**6.3000e-004**	**0.0664**	**0.0174**	**5.7000e-004**	**0.0180**		**72.0090**	**72.0090**	**4.4800e-003**		**72.1031**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	94.2203					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**94.6269**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1804	0.0494	0.6114	8.5000e-004	0.0657	6.3000e-004	0.0664	0.0174	5.7000e-004	0.0180		72.0090	72.0090	4.4800e-003		72.1031
Total	**0.1804**	**0.0494**	**0.6114**	**8.5000e-004**	**0.0657**	**6.3000e-004**	**0.0664**	**0.0174**	**5.7000e-004**	**0.0180**		**72.0090**	**72.0090**	**4.4800e-003**		**72.1031**

Area I - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	46.00	Dwelling Unit	7.30	46,000.00	132

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 7.3

Construction Phase -

Grading - Area I = 7.3 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	7.30
tblLandUse	LotAcreage	2.88	7.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	72.5229	30.7612	21.9079	0.0315	0.3044	2.1286	2.4330	0.0814	2.0012	2.0827	0.0000	3,107.9912	3,107.9912	0.7070	0.0000	3,122.8375
Total	**78.2768**	**88.5097**	**66.4809**	**0.0726**	**18.5185**	**5.2679**	**23.7864**	**10.0513**	**4.8894**	**14.9407**	**0.0000**	**7,431.8949**	**7,431.8949**	**1.9466**	**0.0000**	**7,472.7729**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
2015	72.5229	30.7612	21.9079	0.0315	0.3044	2.1286	2.4330	0.0814	2.0012	2.0827	0.0000	3,107.9912	3,107.9912	0.7070	0.0000	3,122.8375
Total	**78.2768**	**88.5097**	**66.4809**	**0.0726**	**18.5185**	**5.2679**	**23.7864**	**10.0513**	**4.8894**	**14.9407**	**0.0000**	**7,431.8949**	**7,431.8949**	**1.9466**	**0.0000**	**7,472.7729**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Building Construction	Building Construction	3/12/2014	1/27/2015	5	230	
4	Paving	Paving	1/28/2015	2/24/2015	5	20	
5	Architectural Coating	Architectural Coating	2/25/2015	3/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.3

Acres of Paving: 0

Residential Indoor: 93,150; Residential Outdoor: 31,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	33.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4092	0.0000	6.4092	3.3520	0.0000	3.3520			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817		3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4092**	**2.3714**	**8.7806**	**3.3520**	**2.1817**	**5.5338**		**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4092	0.0000	6.4092	3.3520	0.0000	3.3520			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817	0.0000	3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4092**	**2.3714**	**8.7806**	**3.3520**	**2.1817**	**5.5338**	**0.0000**	**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.8488	0.2360	2.9555	3.5000e-003	0.2711	2.9200e-003	0.2740	0.0719	2.5900e-003	0.0745		308.0226	308.0226	0.0211		308.4652
Total	**1.0410**	**0.8520**	**3.7183**	**4.7100e-003**	**0.3044**	**0.0151**	**0.3195**	**0.0814**	**0.0138**	**0.0952**		**431.0685**	**431.0685**	**0.0223**		**431.5365**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.8488	0.2360	2.9555	3.5000e-003	0.2711	2.9200e-003	0.2740	0.0719	2.5900e-003	0.0745		308.0226	308.0226	0.0211		308.4652
Total	**1.0410**	**0.8520**	**3.7183**	**4.7100e-003**	**0.3044**	**0.0151**	**0.3195**	**0.0814**	**0.0138**	**0.0952**		**431.0685**	**431.0685**	**0.0223**		**431.5365**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.7443	0.2037	2.5219	3.4900e-003	0.2711	2.6100e-003	0.2737	0.0719	2.3400e-003	0.0742		297.0370	297.0370	0.0185		297.4254
Total	**0.8975**	**0.7313**	**3.1634**	**4.6900e-003**	**0.3044**	**0.0119**	**0.3163**	**0.0814**	**0.0109**	**0.0923**		**418.4141**	**418.4141**	**0.0196**		**418.8245**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.7443	0.2037	2.5219	3.4900e-003	0.2711	2.6100e-003	0.2737	0.0719	2.3400e-003	0.0742		297.0370	297.0370	0.0185		297.4254
Total	**0.8975**	**0.7313**	**3.1634**	**4.6900e-003**	**0.3044**	**0.0119**	**0.3163**	**0.0814**	**0.0109**	**0.0923**		**418.4141**	**418.4141**	**0.0196**		**418.8245**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	71.9584					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**72.3650**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1579	0.0432	0.5349	7.4000e-004	0.0575	5.5000e-004	0.0581	0.0153	5.0000e-004	0.0158		63.0078	63.0078	3.9200e-003		63.0902
Total	**0.1579**	**0.0432**	**0.5349**	**7.4000e-004**	**0.0575**	**5.5000e-004**	**0.0581**	**0.0153**	**5.0000e-004**	**0.0158**		**63.0078**	**63.0078**	**3.9200e-003**		**63.0902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	71.9584					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**72.3650**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1579	0.0432	0.5349	7.4000e-004	0.0575	5.5000e-004	0.0581	0.0153	5.0000e-004	0.0158		63.0078	63.0078	3.9200e-003		63.0902
Total	**0.1579**	**0.0432**	**0.5349**	**7.4000e-004**	**0.0575**	**5.5000e-004**	**0.0581**	**0.0153**	**5.0000e-004**	**0.0158**		**63.0078**	**63.0078**	**3.9200e-003**		**63.0902**

Area J - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	51.00	Dwelling Unit	8.10	51,000.00	146

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 8.1

Construction Phase -

Grading - Area J = 8.1 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	8.10
tblLandUse	LotAcreage	3.19	8.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	80.3444	30.7859	22.2136	0.0319	0.3372	2.1289	2.4662	0.0901	2.0015	2.0917	0.0000	3,143.9957	3,143.9957	0.7070	0.0000	3,158.8419
Total	**86.0984**	**88.5344**	**66.7866**	**0.0730**	**18.5514**	**5.2682**	**23.8196**	**10.0600**	**4.8896**	**14.9497**	**0.0000**	**7,467.8994**	**7,467.8994**	**1.9466**	**0.0000**	**7,508.7774**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	80.3444	30.7859	22.2136	0.0319	0.3372	2.1289	2.4662	0.0901	2.0015	2.0917	0.0000	3,143.9957	3,143.9957	0.7070	0.0000	3,158.8419
Total	**86.0984**	**88.5344**	**66.7866**	**0.0730**	**18.5514**	**5.2682**	**23.8196**	**10.0600**	**4.8896**	**14.9497**	**0.0000**	**7,467.8994**	**7,467.8994**	**1.9466**	**0.0000**	**7,508.7774**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Building Construction	Building Construction	3/12/2014	1/27/2015	5	230	
4	Paving	Paving	1/28/2015	2/24/2015	5	20	
5	Architectural Coating	Architectural Coating	2/25/2015	3/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 103,275; Residential Outdoor: 34,425; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4516	0.0000	6.4516	3.3566	0.0000	3.3566			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817		3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4516**	**2.3714**	**8.8230**	**3.3566**	**2.1817**	**5.5383**		**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4516	0.0000	6.4516	3.3566	0.0000	3.3566			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817	0.0000	3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4516**	**2.3714**	**8.8230**	**3.3566**	**2.1817**	**5.5383**	**0.0000**	**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.9517	0.2646	3.3137	3.9200e-003	0.3040	3.2700e-003	0.3072	0.0806	2.9000e-003	0.0835		345.3587	345.3587	0.0236		345.8549
Total	**1.1439**	**0.8806**	**4.0766**	**5.1300e-003**	**0.3372**	**0.0155**	**0.3527**	**0.0901**	**0.0141**	**0.1042**		**468.4046**	**468.4046**	**0.0248**		**468.9263**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.9517	0.2646	3.3137	3.9200e-003	0.3040	3.2700e-003	0.3072	0.0806	2.9000e-003	0.0835		345.3587	345.3587	0.0236		345.8549
Total	**1.1439**	**0.8806**	**4.0766**	**5.1300e-003**	**0.3372**	**0.0155**	**0.3527**	**0.0901**	**0.0141**	**0.1042**		**468.4046**	**468.4046**	**0.0248**		**468.9263**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.8345	0.2284	2.8275	3.9100e-003	0.3040	2.9300e-003	0.3069	0.0806	2.6200e-003	0.0832		333.0414	333.0414	0.0207		333.4770
Total	**0.9877**	**0.7560**	**3.4691**	**5.1100e-003**	**0.3372**	**0.0122**	**0.3494**	**0.0901**	**0.0111**	**0.1013**		**454.4185**	**454.4185**	**0.0218**		**454.8760**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.8345	0.2284	2.8275	3.9100e-003	0.3040	2.9300e-003	0.3069	0.0806	2.6200e-003	0.0832		333.0414	333.0414	0.0207		333.4770
Total	**0.9877**	**0.7560**	**3.4691**	**5.1100e-003**	**0.3372**	**0.0122**	**0.3494**	**0.0901**	**0.0111**	**0.1013**		**454.4185**	**454.4185**	**0.0218**		**454.8760**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.7799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**80.1865**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1579	0.0432	0.5349	7.4000e-004	0.0575	5.5000e-004	0.0581	0.0153	5.0000e-004	0.0158		63.0078	63.0078	3.9200e-003		63.0902
Total	**0.1579**	**0.0432**	**0.5349**	**7.4000e-004**	**0.0575**	**5.5000e-004**	**0.0581**	**0.0153**	**5.0000e-004**	**0.0158**		**63.0078**	**63.0078**	**3.9200e-003**		**63.0902**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	79.7799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**80.1865**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1579	0.0432	0.5349	7.4000e-004	0.0575	5.5000e-004	0.0581	0.0153	5.0000e-004	0.0158		63.0078	63.0078	3.9200e-003		63.0902
Total	**0.1579**	**0.0432**	**0.5349**	**7.4000e-004**	**0.0575**	**5.5000e-004**	**0.0581**	**0.0153**	**5.0000e-004**	**0.0158**		**63.0078**	**63.0078**	**3.9200e-003**		**63.0902**

Area K - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	7.60	Acre	7.60	331,056.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading - Area K = 7.6 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	7.60
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Total	**5.7540**	**57.7485**	**44.5730**	**0.0411**	**18.2141**	**3.1393**	**21.3534**	**9.9699**	**2.8881**	**12.8580**	**0.0000**	**4,323.9037**	**4,323.9037**	**1.2396**	**0.0000**	**4,349.9355**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	5.7540	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Total	**5.7540**	**57.7485**	**44.5730**	**0.0411**	**18.2141**	**3.1393**	**21.3534**	**9.9699**	**2.8881**	**12.8580**	**0.0000**	**4,323.9037**	**4,323.9037**	**1.2396**	**0.0000**	**4,349.9355**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/14/2014	5	10	
2	Grading	Grading	1/15/2014	2/11/2014	5	20	
3	Paving	Paving	2/12/2014	3/11/2014	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4251	0.0000	6.4251	3.3537	0.0000	3.3537			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817		3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4251**	**2.3714**	**8.7965**	**3.3537**	**2.1817**	**5.5355**		**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4251	0.0000	6.4251	3.3537	0.0000	3.3537			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817	0.0000	3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.4251**	**2.3714**	**8.7965**	**3.3537**	**2.1817**	**5.5355**	**0.0000**	**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

3.4 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3610	26.0857	14.9649	0.0223		1.4523	1.4523		1.3361	1.3361		2,363.4906	2,363.4906	0.6984		2,378.1578
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3610**	**26.0857**	**14.9649**	**0.0223**		**1.4523**	**1.4523**		**1.3361**	**1.3361**		**2,363.4906**	**2,363.4906**	**0.6984**		**2,378.1578**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3610	26.0857	14.9649	0.0223		1.4523	1.4523		1.3361	1.3361	0.0000	2,363.4906	2,363.4906	0.6984		2,378.1578
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3610**	**26.0857**	**14.9649**	**0.0223**		**1.4523**	**1.4523**		**1.3361**	**1.3361**	**0.0000**	**2,363.4906**	**2,363.4906**	**0.6984**		**2,378.1578**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Area L - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	61.00	Dwelling Unit	17.10	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 17.1

Construction Phase - Painting phase = 30 days

Grading - Area L = 17.1 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	17.10
tblLandUse	LotAcreage	19.81	17.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	115.0045	30.9044	21.3239	0.0308	0.2273	2.1314	2.3588	0.0612	2.0039	2.0651	0.0000	3,057.5297	3,057.5297	0.7070	0.0000	3,072.3760
Total	**122.3669**	**111.7685**	**74.6982**	**0.0947**	**18.4414**	**6.0124**	**23.7122**	**10.0311**	**5.5743**	**14.9231**	**0.0000**	**9,799.0438**	**9,799.0438**	**2.6568**	**0.0000**	**9,854.8358**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	115.0045	30.9044	21.3239	0.0308	0.2273	2.1314	2.3588	0.0612	2.0039	2.0651	0.0000	3,057.5297	3,057.5297	0.7070	0.0000	3,072.3760
Total	**122.3669**	**111.7685**	**74.6982**	**0.0947**	**18.4414**	**6.0124**	**23.7122**	**10.0311**	**5.5743**	**14.9231**	**0.0000**	**9,799.0438**	**9,799.0438**	**2.6568**	**0.0000**	**9,854.8358**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 17.1

Acres of Paving: 0

Residential Indoor: 222,345; Residential Outdoor: 74,115; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	22.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6266	0.0000	6.6266	3.3755	0.0000	3.3755			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6266**	**3.8792**	**10.5058**	**3.3755**	**3.5689**	**6.9444**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.6266	0.0000	6.6266	3.3755	0.0000	3.3755			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.6266**	**3.8792**	**10.5058**	**3.3755**	**3.5689**	**6.9444**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2691	0.8624	1.0680	1.6900e-003	0.0466	0.0171	0.0637	0.0133	0.0157	0.0290		172.2642	172.2642	1.7000e-003		172.2999
Worker	0.5659	0.1573	1.9703	2.3300e-003	0.1807	1.9400e-003	0.1827	0.0479	1.7300e-003	0.0497		205.3484	205.3484	0.0141		205.6435
Total	**0.8349**	**1.0197**	**3.0383**	**4.0200e-003**	**0.2273**	**0.0190**	**0.2464**	**0.0613**	**0.0174**	**0.0787**		**377.6127**	**377.6127**	**0.0158**		**377.9433**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2691	0.8624	1.0680	1.6900e-003	0.0466	0.0171	0.0637	0.0133	0.0157	0.0290		172.2642	172.2642	1.7000e-003		172.2999
Worker	0.5659	0.1573	1.9703	2.3300e-003	0.1807	1.9400e-003	0.1827	0.0479	1.7300e-003	0.0497		205.3484	205.3484	0.0141		205.6435
Total	**0.8349**	**1.0197**	**3.0383**	**4.0200e-003**	**0.2273**	**0.0190**	**0.2464**	**0.0613**	**0.0174**	**0.0787**		**377.6127**	**377.6127**	**0.0158**		**377.9433**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2145	0.7387	0.8981	1.6800e-003	0.0466	0.0130	0.0596	0.0133	0.0119	0.0252		169.9279	169.9279	1.4600e-003		169.9587
Worker	0.4962	0.1358	1.6812	2.3300e-003	0.1807	1.7400e-003	0.1825	0.0479	1.5600e-003	0.0495		198.0246	198.0246	0.0123		198.2836
Total	**0.7107**	**0.8745**	**2.5794**	**4.0100e-003**	**0.2273**	**0.0147**	**0.2420**	**0.0613**	**0.0135**	**0.0747**		**367.9526**	**367.9526**	**0.0138**		**368.2423**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2145	0.7387	0.8981	1.6800e-003	0.0466	0.0130	0.0596	0.0133	0.0119	0.0252		169.9279	169.9279	1.4600e-003		169.9587
Worker	0.4962	0.1358	1.6812	2.3300e-003	0.1807	1.7400e-003	0.1825	0.0479	1.5600e-003	0.0495		198.0246	198.0246	0.0123		198.2836
Total	**0.7107**	**0.8745**	**2.5794**	**4.0100e-003**	**0.2273**	**0.0147**	**0.2420**	**0.0613**	**0.0135**	**0.0747**		**367.9526**	**367.9526**	**0.0138**		**368.2423**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	114.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**114.9143**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0247	0.3057	4.2000e-004	0.0329	3.2000e-004	0.0332	8.7200e-003	2.8000e-004	9.0000e-003		36.0045	36.0045	2.2400e-003		36.0516
Total	**0.0902**	**0.0247**	**0.3057**	**4.2000e-004**	**0.0329**	**3.2000e-004**	**0.0332**	**8.7200e-003**	**2.8000e-004**	**9.0000e-003**		**36.0045**	**36.0045**	**2.2400e-003**		**36.0516**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	114.5077					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**114.9143**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0247	0.3057	4.2000e-004	0.0329	3.2000e-004	0.0332	8.7200e-003	2.8000e-004	9.0000e-003		36.0045	36.0045	2.2400e-003		36.0516
Total	**0.0902**	**0.0247**	**0.3057**	**4.2000e-004**	**0.0329**	**3.2000e-004**	**0.0332**	**8.7200e-003**	**2.8000e-004**	**9.0000e-003**		**36.0045**	**36.0045**	**2.2400e-003**		**36.0516**

Area O - Phase 2

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	47.00	Dwelling Unit	13.10	84,600.00	134

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 13.1

Construction Phase - Painting phase = 30 days

Grading - Lot O = 13.1 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	13.10
tblLandUse	LotAcreage	15.26	13.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	88.7015	30.6625	20.6852	0.0298	0.1729	2.1273	2.3003	0.0466	2.0001	2.0467	0.0000	2,963.9733	2,963.9733	0.7070	0.0000	2,978.8195
Total	**96.0639**	**111.5266**	**74.0595**	**0.0937**	**18.3871**	**6.0083**	**23.6537**	**10.0165**	**5.5705**	**14.9047**	**0.0000**	**9,705.4874**	**9,705.4874**	**2.6568**	**0.0000**	**9,761.2794**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	88.7015	30.6625	20.6852	0.0298	0.1729	2.1273	2.3003	0.0466	2.0001	2.0467	0.0000	2,963.9733	2,963.9733	0.7070	0.0000	2,978.8195
Total	**96.0639**	**111.5266**	**74.0595**	**0.0937**	**18.3871**	**6.0083**	**23.6537**	**10.0165**	**5.5705**	**14.9047**	**0.0000**	**9,705.4874**	**9,705.4874**	**2.6568**	**0.0000**	**9,761.2794**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.1

Acres of Paving: 0

Residential Indoor: 171,315; Residential Outdoor: 57,105; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	17.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4852	0.0000	6.4852	3.3602	0.0000	3.3602			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4852**	**3.8792**	**10.3644**	**3.3602**	**3.5689**	**6.9291**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4852	0.0000	6.4852	3.3602	0.0000	3.3602			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4852**	**3.8792**	**10.3644**	**3.3602**	**3.5689**	**6.9291**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.4373	0.1216	1.5225	1.8000e-003	0.1397	1.5000e-003	0.1412	0.0370	1.3300e-003	0.0384		158.6783	158.6783	0.0109		158.9063
Total	**0.6294**	**0.7376**	**2.2854**	**3.0100e-003**	**0.1729**	**0.0137**	**0.1866**	**0.0466**	**0.0125**	**0.0591**		**281.7242**	**281.7242**	**0.0121**		**281.9777**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1922	0.6160	0.7629	1.2100e-003	0.0333	0.0122	0.0455	9.5100e-003	0.0112	0.0207		123.0459	123.0459	1.2100e-003		123.0713
Worker	0.4373	0.1216	1.5225	1.8000e-003	0.1397	1.5000e-003	0.1412	0.0370	1.3300e-003	0.0384		158.6783	158.6783	0.0109		158.9063
Total	**0.6294**	**0.7376**	**2.2854**	**3.0100e-003**	**0.1729**	**0.0137**	**0.1866**	**0.0466**	**0.0125**	**0.0591**		**281.7242**	**281.7242**	**0.0121**		**281.9777**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.3834	0.1049	1.2991	1.8000e-003	0.1397	1.3500e-003	0.1410	0.0370	1.2000e-003	0.0383		153.0190	153.0190	9.5300e-003		153.2192
Total	**0.5366**	**0.6326**	**1.9407**	**3.0000e-003**	**0.1729**	**0.0106**	**0.1836**	**0.0466**	**9.7100e-003**	**0.0563**		**274.3961**	**274.3961**	**0.0106**		**274.6182**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1532	0.5276	0.6415	1.2000e-003	0.0333	9.2600e-003	0.0426	9.5100e-003	8.5100e-003	0.0180		121.3771	121.3771	1.0500e-003		121.3991
Worker	0.3834	0.1049	1.2991	1.8000e-003	0.1397	1.3500e-003	0.1410	0.0370	1.2000e-003	0.0383		153.0190	153.0190	9.5300e-003		153.2192
Total	**0.5366**	**0.6326**	**1.9407**	**3.0000e-003**	**0.1729**	**0.0106**	**0.1836**	**0.0466**	**9.7100e-003**	**0.0563**		**274.3961**	**274.3961**	**0.0106**		**274.6182**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	88.2272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**88.6338**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0677	0.0185	0.2293	3.2000e-004	0.0246	2.4000e-004	0.0249	6.5400e-003	2.1000e-004	6.7500e-003		27.0034	27.0034	1.6800e-003		27.0387
Total	**0.0677**	**0.0185**	**0.2293**	**3.2000e-004**	**0.0246**	**2.4000e-004**	**0.0249**	**6.5400e-003**	**2.1000e-004**	**6.7500e-003**		**27.0034**	**27.0034**	**1.6800e-003**		**27.0387**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	88.2272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**88.6338**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0677	0.0185	0.2293	3.2000e-004	0.0246	2.4000e-004	0.0249	6.5400e-003	2.1000e-004	6.7500e-003		27.0034	27.0034	1.6800e-003		27.0387
Total	**0.0677**	**0.0185**	**0.2293**	**3.2000e-004**	**0.0246**	**2.4000e-004**	**0.0249**	**6.5400e-003**	**2.1000e-004**	**6.7500e-003**		**27.0034**	**27.0034**	**1.6800e-003**		**27.0387**

Area M - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	70.00	Dwelling Unit	19.40	126,000.00	200
City Park	13.00	Acre	13.00	566,280.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 32.4

Construction Phase -

Grading - Area M = 32.4

Architectural Coating - 0 square feet of nonresidential

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	283,140.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	849,420.00	0.00
tblGrading	AcresOfGrading	112.50	32.40
tblLandUse	LotAcreage	22.73	19.40
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	14.4763	80.8641	57.7416	0.0788	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	7,624.9618	7,624.9618	1.9498	0.0000	7,665.9075
Year Two	12.6551	42.2058	51.6732	0.0786	2.8262	2.3228	5.1489	0.7632	2.1792	2.9424	0.0000	7,484.4136	7,484.4136	0.8432	0.0000	7,502.1198
Year Three	114.0556	39.1233	47.6202	0.0785	2.8263	2.1421	4.9684	0.7632	2.0087	2.7719	0.0000	7,348.5372	7,348.5372	0.8116	0.0000	7,365.5817
Total	**141.1869**	**162.1932**	**157.0350**	**0.2360**	**23.8666**	**8.3458**	**31.4708**	**11.4963**	**7.7583**	**18.5723**	**0.0000**	**22,457.9125**	**22,457.9125**	**3.6046**	**0.0000**	**22,533.6090**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	14.4763	80.8641	57.7416	0.0788	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	7,624.9618	7,624.9618	1.9498	0.0000	7,665.9075
Year Two	12.6551	42.2058	51.6732	0.0786	2.8262	2.3228	5.1489	0.7632	2.1792	2.9424	0.0000	7,484.4136	7,484.4136	0.8432	0.0000	7,502.1198
Year Three	114.0556	39.1233	47.6202	0.0785	2.8263	2.1421	4.9684	0.7632	2.0087	2.7719	0.0000	7,348.5372	7,348.5372	0.8116	0.0000	7,365.5817
Total	**141.1869**	**162.1932**	**157.0350**	**0.2360**	**23.8666**	**8.3458**	**31.4708**	**11.4963**	**7.7583**	**18.5723**	**0.0000**	**22,457.9125**	**22,457.9125**	**3.6046**	**0.0000**	**22,533.6090**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/12/2014	3/11/2014	5	20	
2	Grading	Grading	3/12/2014	5/13/2014	5	45	
3	Building Construction	Building Construction	5/14/2014	4/12/2016	5	500	
4	Paving	Paving	4/13/2016	5/31/2016	5	35	
5	Architectural Coating	Architectural Coating	6/1/2016	7/19/2016	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 32.4

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	263.00	100.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7857	0.0000	6.7857	3.3927	0.0000	3.3927			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7857**	**3.8792**	**10.6649**	**3.3927**	**3.5689**	**6.9615**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7857	0.0000	6.7857	3.3927	0.0000	3.3927			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7857**	**3.8792**	**10.6649**	**3.3927**	**3.5689**	**6.9615**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8438	12.3201	15.2575	0.0241	0.6657	0.2440	0.9097	0.1901	0.2242	0.4143		2,460.9177	2,460.9177	0.0242		2,461.4268
Worker	6.7645	1.8808	23.5542	0.0279	2.1605	0.0232	2.1837	0.5731	0.0206	0.5937		2,454.8471	2,454.8471	0.1680		2,458.3741
Total	**10.6084**	**14.2009**	**38.8117**	**0.0520**	**2.8262**	**0.2673**	**3.0935**	**0.7632**	**0.2448**	**1.0080**		**4,915.7648**	**4,915.7648**	**0.1922**		**4,919.8009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8438	12.3201	15.2575	0.0241	0.6657	0.2440	0.9097	0.1901	0.2242	0.4143		2,460.9177	2,460.9177	0.0242		2,461.4268
Worker	6.7645	1.8808	23.5542	0.0279	2.1605	0.0232	2.1837	0.5731	0.0206	0.5937		2,454.8471	2,454.8471	0.1680		2,458.3741
Total	**10.6084**	**14.2009**	**38.8117**	**0.0520**	**2.8262**	**0.2673**	**3.0935**	**0.7632**	**0.2448**	**1.0080**		**4,915.7648**	**4,915.7648**	**0.1922**		**4,919.8009**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0641	10.5527	12.8302	0.0240	0.6657	0.1852	0.8509	0.1901	0.1702	0.3603		2,427.5419	2,427.5419	0.0209		2,427.9812
Worker	5.9319	1.6231	20.0985	0.0278	2.1605	0.0208	2.1813	0.5731	0.0186	0.5917		2,367.2946	2,367.2946	0.1474		2,370.3903
Total	**8.9960**	**12.1759**	**32.9287**	**0.0518**	**2.8262**	**0.2060**	**3.0322**	**0.7632**	**0.1888**	**0.9520**		**4,794.8365**	**4,794.8365**	**0.1683**		**4,798.3715**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.0641	10.5527	12.8302	0.0240	0.6657	0.1852	0.8509	0.1901	0.1702	0.3603		2,427.5419	2,427.5419	0.0209		2,427.9812
Worker	5.9319	1.6231	20.0985	0.0278	2.1605	0.0208	2.1813	0.5731	0.0186	0.5917		2,367.2946	2,367.2946	0.1474		2,370.3903
Total	**8.9960**	**12.1759**	**32.9287**	**0.0518**	**2.8262**	**0.2060**	**3.0322**	**0.7632**	**0.1888**	**0.9520**		**4,794.8365**	**4,794.8365**	**0.1683**		**4,798.3715**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8347	9.2053	11.8150	0.0239	0.6658	0.1556	0.8214	0.1902	0.1430	0.3332		2,398.8639	2,398.8639	0.0190		2,399.2618
Worker	5.2431	1.4117	17.2985	0.0278	2.1605	0.0191	2.1796	0.5731	0.0172	0.5903		2,280.3869	2,280.3869	0.1307		2,283.1309
Total	**8.0778**	**10.6170**	**29.1136**	**0.0517**	**2.8263**	**0.1747**	**3.0010**	**0.7632**	**0.1602**	**0.9234**		**4,679.2508**	**4,679.2508**	**0.1496**		**4,682.3927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	2.8347	9.2053	11.8150	0.0239	0.6658	0.1556	0.8214	0.1902	0.1430	0.3332		2,398.8639	2,398.8639	0.0190		2,399.2618
Worker	5.2431	1.4117	17.2985	0.0278	2.1605	0.0191	2.1796	0.5731	0.0172	0.5903		2,280.3869	2,280.3869	0.1307		2,283.1309
Total	**8.0778**	**10.6170**	**29.1136**	**0.0517**	**2.8263**	**0.1747**	**3.0010**	**0.7632**	**0.1602**	**0.9234**		**4,679.2508**	**4,679.2508**	**0.1496**		**4,682.3927**

3.5 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

3.6 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	112.6305					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**112.9990**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.0566	0.2845	3.4860	5.6000e-003	0.4354	3.8500e-003	0.4392	0.1155	3.4700e-003	0.1190		459.5456	459.5456	0.0263		460.0986
Total	**1.0566**	**0.2845**	**3.4860**	**5.6000e-003**	**0.4354**	**3.8500e-003**	**0.4392**	**0.1155**	**3.4700e-003**	**0.1190**		**459.5456**	**459.5456**	**0.0263**		**460.0986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	112.6305					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**112.9990**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.0566	0.2845	3.4860	5.6000e-003	0.4354	3.8500e-003	0.4392	0.1155	3.4700e-003	0.1190		459.5456	459.5456	0.0263		460.0986
Total	**1.0566**	**0.2845**	**3.4860**	**5.6000e-003**	**0.4354**	**3.8500e-003**	**0.4392**	**0.1155**	**3.4700e-003**	**0.1190**		**459.5456**	**459.5456**	**0.0263**		**460.0986**

Area N - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	41.00	Dwelling Unit	11.30	73,800.00	117

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 11.3

Construction Phase - Painting phase = 30 days

Grading - Area N = 11.3 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	11.30
tblLandUse	LotAcreage	13.31	11.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	77.4384	30.5446	20.4041	0.0294	0.1499	2.1253	2.2752	0.0403	1.9983	2.0386	0.0000	2,921.6956	2,921.6956	0.7070	0.0000	2,936.5419
Total	**84.8009**	**111.4087**	**73.7784**	**0.0933**	**18.3640**	**6.0063**	**23.6286**	**10.0102**	**5.5687**	**14.8966**	**0.0000**	**9,663.2097**	**9,663.2097**	**2.6568**	**0.0000**	**9,719.0017**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	77.4384	30.5446	20.4041	0.0294	0.1499	2.1253	2.2752	0.0403	1.9983	2.0386	0.0000	2,921.6956	2,921.6956	0.7070	0.0000	2,936.5419
Total	**84.8009**	**111.4087**	**73.7784**	**0.0933**	**18.3640**	**6.0063**	**23.6286**	**10.0102**	**5.5687**	**14.8966**	**0.0000**	**9,663.2097**	**9,663.2097**	**2.6568**	**0.0000**	**9,719.0017**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11.3

Acres of Paving: 0

Residential Indoor: 149,445; Residential Outdoor: 49,815; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	15.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4215	0.0000	6.4215	3.3534	0.0000	3.3534			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113

Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4215**	**3.8792**	**10.3007**	**3.3534**	**3.5689**	**6.9222**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4215	0.0000	6.4215	3.3534	0.0000	3.3534			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4215**	**3.8792**	**10.3007**	**3.3534**	**3.5689**	**6.9222**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1538	0.4928	0.6103	9.6000e-004	0.0266	9.7600e-003	0.0364	7.6100e-003	8.9700e-003	0.0166		98.4367	98.4367	9.7000e-004		98.4571
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.5396**	**0.6001**	**1.9537**	**2.5500e-003**	**0.1499**	**0.0111**	**0.1609**	**0.0403**	**0.0102**	**0.0504**		**238.4470**	**238.4470**	**0.0106**		**238.6685**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1538	0.4928	0.6103	9.6000e-004	0.0266	9.7600e-003	0.0364	7.6100e-003	8.9700e-003	0.0166		98.4367	98.4367	9.7000e-004		98.4571
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.5396**	**0.6001**	**1.9537**	**2.5500e-003**	**0.1499**	**0.0111**	**0.1609**	**0.0403**	**0.0102**	**0.0504**		**238.4470**	**238.4470**	**0.0106**		**238.6685**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1226	0.4221	0.5132	9.6000e-004	0.0266	7.4100e-003	0.0340	7.6000e-003	6.8100e-003	0.0144		97.1017	97.1017	8.4000e-004		97.1193
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.4609**	**0.5147**	**1.6595**	**2.5500e-003**	**0.1499**	**8.6000e-003**	**0.1585**	**0.0403**	**7.8700e-003**	**0.0482**		**232.1185**	**232.1185**	**9.2500e-003**		**232.3126**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1226	0.4221	0.5132	9.6000e-004	0.0266	7.4100e-003	0.0340	7.6000e-003	6.8100e-003	0.0144		97.1017	97.1017	8.4000e-004		97.1193
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.4609**	**0.5147**	**1.6595**	**2.5500e-003**	**0.1499**	**8.6000e-003**	**0.1585**	**0.0403**	**7.8700e-003**	**0.0482**		**232.1185**	**232.1185**	**9.2500e-003**		**232.3126**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.9642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**77.3708**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0677	0.0185	0.2293	3.2000e-004	0.0246	2.4000e-004	0.0249	6.5400e-003	2.1000e-004	6.7500e-003		27.0034	27.0034	1.6800e-003		27.0387
Total	**0.0677**	**0.0185**	**0.2293**	**3.2000e-004**	**0.0246**	**2.4000e-004**	**0.0249**	**6.5400e-003**	**2.1000e-004**	**6.7500e-003**		**27.0034**	**27.0034**	**1.6800e-003**		**27.0387**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.9642					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**77.3708**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0677	0.0185	0.2293	3.2000e-004	0.0246	2.4000e-004	0.0249	6.5400e-003	2.1000e-004	6.7500e-003		27.0034	27.0034	1.6800e-003		27.0387
Total	**0.0677**	**0.0185**	**0.2293**	**3.2000e-004**	**0.0246**	**2.4000e-004**	**0.0249**	**6.5400e-003**	**2.1000e-004**	**6.7500e-003**		**27.0034**	**27.0034**	**1.6800e-003**		**27.0387**

Area P - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	119.00	Dwelling Unit	32.90	214,200.00	340

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 32.9

Construction Phase - Painting phase = 50 days

Grading - Area P = 32.9 acres

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	50.00
tblGrading	AcresOfGrading	112.50	32.90
tblLandUse	LotAcreage	38.64	32.90
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	5.0273	31.6672	23.6985	0.0345	0.4398	2.1442	2.5840	0.1184	2.0156	2.1340	0.0000	3,392.2057	3,392.2057	0.7016	0.0000	3,406.9402
Year Three	134.5782	29.9338	22.8709	0.0345	0.4398	1.9907	2.4305	0.1184	1.8699	1.9883	0.0000	3,353.9776	3,353.9776	0.7062	0.0000	3,368.8069
Total	**146.9679**	**142.4651**	**99.9437**	**0.1329**	**19.0937**	**8.0159**	**26.3680**	**10.2067**	**7.4559**	**16.9803**	**0.0000**	**13,487.6975**	**13,487.6975**	**3.3576**	**0.0000**	**13,558.2069**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	5.0273	31.6672	23.6985	0.0345	0.4398	2.1442	2.5840	0.1184	2.0156	2.1340	0.0000	3,392.2057	3,392.2057	0.7016	0.0000	3,406.9402
Year Three	134.5782	29.9338	22.8709	0.0345	0.4398	1.9907	2.4305	0.1184	1.8699	1.9883	0.0000	3,353.9776	3,353.9776	0.7062	0.0000	3,368.8069
Total	**146.9679**	**142.4651**	**99.9437**	**0.1329**	**19.0937**	**8.0159**	**26.3680**	**10.2067**	**7.4559**	**16.9803**	**0.0000**	**13,487.6975**	**13,487.6975**	**3.3576**	**0.0000**	**13,558.2069**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/12/2014	3/11/2014	5	20	
2	Grading	Grading	3/12/2014	5/13/2014	5	45	
3	Building Construction	Building Construction	5/14/2014	4/12/2016	5	500	
4	Paving	Paving	4/13/2016	5/31/2016	5	35	
5	Architectural Coating	Architectural Coating	6/1/2016	8/9/2016	5	50	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 32.9

Acres of Paving: 0

Residential Indoor: 433,755; Residential Outdoor: 144,585; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37

Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	43.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7974	0.0000	6.7974	3.3940	0.0000	3.3940			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7974**	**3.8792**	**10.6766**	**3.3940**	**3.5689**	**6.9628**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.7974	0.0000	6.7974	3.3940	0.0000	3.3940			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.7974**	**3.8792**	**10.6766**	**3.3940**	**3.5689**	**6.9628**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4997	1.6016	1.9835	3.1300e-003	0.0865	0.0317	0.1183	0.0247	0.0291	0.0539		319.9193	319.9193	3.1500e-003		319.9855
Worker	1.1060	0.3075	3.8511	4.5600e-003	0.3532	3.8000e-003	0.3570	0.0937	3.3700e-003	0.0971		401.3628	401.3628	0.0275		401.9395
Total	**1.6057**	**1.9091**	**5.8345**	**7.6900e-003**	**0.4398**	**0.0355**	**0.4753**	**0.1184**	**0.0325**	**0.1509**		**721.2821**	**721.2821**	**0.0306**		**721.9250**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4997	1.6016	1.9835	3.1300e-003	0.0865	0.0317	0.1183	0.0247	0.0291	0.0539		319.9193	319.9193	3.1500e-003		319.9855
Worker	1.1060	0.3075	3.8511	4.5600e-003	0.3532	3.8000e-003	0.3570	0.0937	3.3700e-003	0.0971		401.3628	401.3628	0.0275		401.9395
Total	**1.6057**	**1.9091**	**5.8345**	**7.6900e-003**	**0.4398**	**0.0355**	**0.4753**	**0.1184**	**0.0325**	**0.1509**		**721.2821**	**721.2821**	**0.0306**		**721.9250**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	1.3719	1.6679	3.1200e-003	0.0865	0.0241	0.1106	0.0247	0.0221	0.0468		315.5805	315.5805	2.7200e-003		315.6376
Worker	0.9699	0.2654	3.2861	4.5500e-003	0.3532	3.4000e-003	0.3566	0.0937	3.0400e-003	0.0967		387.0482	387.0482	0.0241		387.5543
Total	**1.3682**	**1.6372**	**4.9540**	**7.6700e-003**	**0.4398**	**0.0275**	**0.4673**	**0.1184**	**0.0252**	**0.1436**		**702.6286**	**702.6286**	**0.0268**		**703.1919**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	1.3719	1.6679	3.1200e-003	0.0865	0.0241	0.1106	0.0247	0.0221	0.0468		315.5805	315.5805	2.7200e-003		315.6376
Worker	0.9699	0.2654	3.2861	4.5500e-003	0.3532	3.4000e-003	0.3566	0.0937	3.0400e-003	0.0967		387.0482	387.0482	0.0241		387.5543
Total	**1.3682**	**1.6372**	**4.9540**	**7.6700e-003**	**0.4398**	**0.0275**	**0.4673**	**0.1184**	**0.0252**	**0.1436**		**702.6286**	**702.6286**	**0.0268**		**703.1919**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3685	1.1967	1.5360	3.1100e-003	0.0866	0.0202	0.1068	0.0247	0.0186	0.0433		311.8523	311.8523	2.4600e-003		311.9040
Worker	0.8572	0.2308	2.8283	4.5400e-003	0.3532	3.1200e-003	0.3564	0.0937	2.8200e-003	0.0965		372.8389	372.8389	0.0214		373.2876
Total	**1.2258**	**1.4275**	**4.3642**	**7.6500e-003**	**0.4398**	**0.0234**	**0.4632**	**0.1184**	**0.0214**	**0.1398**		**684.6912**	**684.6912**	**0.0238**		**685.1916**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3685	1.1967	1.5360	3.1100e-003	0.0866	0.0202	0.1068	0.0247	0.0186	0.0433		311.8523	311.8523	2.4600e-003		311.9040
Worker	0.8572	0.2308	2.8283	4.5400e-003	0.3532	3.1200e-003	0.3564	0.0937	2.8200e-003	0.0965		372.8389	372.8389	0.0214		373.2876
Total	**1.2258**	**1.4275**	**4.3642**	**7.6500e-003**	**0.4398**	**0.0234**	**0.4632**	**0.1184**	**0.0214**	**0.1398**		**684.6912**	**684.6912**	**0.0238**		**685.1916**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.0898**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2990	0.0805	0.9866	1.5800e-003	0.1232	1.0900e-003	0.1243	0.0327	9.8000e-004	0.0337		130.0601	130.0601	7.4500e-003		130.2166
Total	**0.2990**	**0.0805**	**0.9866**	**1.5800e-003**	**0.1232**	**1.0900e-003**	**0.1243**	**0.0327**	**9.8000e-004**	**0.0337**		**130.0601**	**130.0601**	**7.4500e-003**		**130.2166**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.0303					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**134.3988**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1794	0.0483	0.5920	9.5000e-004	0.0739	6.5000e-004	0.0746	0.0196	5.9000e-004	0.0202		78.0361	78.0361	4.4700e-003		78.1300
Total	**0.1794**	**0.0483**	**0.5920**	**9.5000e-004**	**0.0739**	**6.5000e-004**	**0.0746**	**0.0196**	**5.9000e-004**	**0.0202**		**78.0361**	**78.0361**	**4.4700e-003**		**78.1300**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	134.0303					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**134.3988**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1794	0.0483	0.5920	9.5000e-004	0.0739	6.5000e-004	0.0746	0.0196	5.9000e-004	0.0202		78.0361	78.0361	4.4700e-003		78.1300
Total	**0.1794**	**0.0483**	**0.5920**	**9.5000e-004**	**0.0739**	**6.5000e-004**	**0.0746**	**0.0196**	**5.9000e-004**	**0.0202**		**78.0361**	**78.0361**	**4.4700e-003**		**78.1300**

Area Q - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	19.00	Dwelling Unit	10.40	34,200.00	54
Electric Substation	30.49	1000sqft	2.00	30,492.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 12.4

Construction Phase - Painting phase = 30 days

Grading - Area Q = 12.4 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	12.40
tblLandUse	LotAcreage	6.17	10.40
tblLandUse	LotAcreage	0.70	2.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	59.7182	30.8921	21.1711	0.0306	0.2109	2.1313	2.3422	0.0569	2.0037	2.0606	0.0000	3,039.5275	3,039.5275	0.7070	0.0000	3,054.3737
Total	**67.0807**	**111.7562**	**74.5454**	**0.0945**	**18.4250**	**6.0123**	**23.6956**	**10.0268**	**5.5742**	**14.9186**	**0.0000**	**9,781.0416**	**9,781.0416**	**2.6568**	**0.0000**	**9,836.8336**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	59.7182	30.8921	21.1711	0.0306	0.2109	2.1313	2.3422	0.0569	2.0037	2.0606	0.0000	3,039.5275	3,039.5275	0.7070	0.0000	3,054.3737
Total	**67.0807**	**111.7562**	**74.5454**	**0.0945**	**18.4250**	**6.0123**	**23.6956**	**10.0268**	**5.5742**	**14.9186**	**0.0000**	**9,781.0416**	**9,781.0416**	**2.6568**	**0.0000**	**9,836.8336**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.4

Acres of Paving: 0

Residential Indoor: 69,255; Residential Outdoor: 23,085; Non-Residential Indoor: 45,738; Non-Residential Outdoor: 15,246 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4604	0.0000	6.4604	3.3576	0.0000	3.3576			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4604**	**3.8792**	**10.3396**	**3.3576**	**3.5689**	**6.9264**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.4604	0.0000	6.4604	3.3576	0.0000	3.3576			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.4604**	**3.8792**	**10.3396**	**3.3576**	**3.5689**	**6.9264**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2691	0.8624	1.0680	1.6900e-003	0.0466	0.0171	0.0637	0.0133	0.0157	0.0290		172.2642	172.2642	1.7000e-003		172.2999
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.7835**	**1.0054**	**2.8592**	**3.8100e-003**	**0.2109**	**0.0189**	**0.2297**	**0.0569**	**0.0173**	**0.0742**		**358.9446**	**358.9446**	**0.0145**		**359.2485**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2691	0.8624	1.0680	1.6900e-003	0.0466	0.0171	0.0637	0.0133	0.0157	0.0290		172.2642	172.2642	1.7000e-003		172.2999
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.7835**	**1.0054**	**2.8592**	**3.8100e-003**	**0.2109**	**0.0189**	**0.2297**	**0.0569**	**0.0173**	**0.0742**		**358.9446**	**358.9446**	**0.0145**		**359.2485**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2145	0.7387	0.8981	1.6800e-003	0.0466	0.0130	0.0596	0.0133	0.0119	0.0252		169.9279	169.9279	1.4600e-003		169.9587
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.6656**	**0.8621**	**2.4265**	**3.8000e-003**	**0.2109**	**0.0146**	**0.2254**	**0.0569**	**0.0133**	**0.0702**		**349.9503**	**349.9503**	**0.0127**		**350.2165**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2145	0.7387	0.8981	1.6800e-003	0.0466	0.0130	0.0596	0.0133	0.0119	0.0252		169.9279	169.9279	1.4600e-003		169.9587
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.6656**	**0.8621**	**2.4265**	**3.8000e-003**	**0.2109**	**0.0146**	**0.2254**	**0.0569**	**0.0133**	**0.0702**		**349.9503**	**349.9503**	**0.0127**		**350.2165**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3383	0.0926	1.1463	1.5900e-003	0.1232	1.1900e-003	0.1244	0.0327	1.0600e-003	0.0338		135.0168	135.0168	8.4100e-003		135.1934
Total	**0.3383**	**0.0926**	**1.1463**	**1.5900e-003**	**0.1232**	**1.1900e-003**	**0.1244**	**0.0327**	**1.0600e-003**	**0.0338**		**135.0168**	**135.0168**	**8.4100e-003**		**135.1934**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	59.2214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**59.6280**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0247	0.3057	4.2000e-004	0.0329	3.2000e-004	0.0332	8.7200e-003	2.8000e-004	9.0000e-003		36.0045	36.0045	2.2400e-003		36.0516
Total	**0.0902**	**0.0247**	**0.3057**	**4.2000e-004**	**0.0329**	**3.2000e-004**	**0.0332**	**8.7200e-003**	**2.8000e-004**	**9.0000e-003**		**36.0045**	**36.0045**	**2.2400e-003**		**36.0516**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	59.2214					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**59.6280**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0902	0.0247	0.3057	4.2000e-004	0.0329	3.2000e-004	0.0332	8.7200e-003	2.8000e-004	9.0000e-003		36.0045	36.0045	2.2400e-003		36.0516
Total	**0.0902**	**0.0247**	**0.3057**	**4.2000e-004**	**0.0329**	**3.2000e-004**	**0.0332**	**8.7200e-003**	**2.8000e-004**	**9.0000e-003**		**36.0045**	**36.0045**	**2.2400e-003**		**36.0516**

Area R - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	122.00	Dwelling Unit	4.50	122,000.00	349

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 4.5

Construction Phase - Painting phase = 30 days

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	230.00	300.00
tblLandUse	LotAcreage	7.63	4.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	6.6311	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	128.0433	31.9449	27.1374	0.0393	0.8094	2.1478	2.9572	0.2165	2.0188	2.2352	0.0000	3,797.2562	3,797.2562	0.7269	0.0000	3,812.5203
Total	**134.6744**	**89.6934**	**71.7104**	**0.0803**	**19.0236**	**5.2871**	**24.3107**	**10.1864**	**4.9069**	**15.0932**	**0.0000**	**8,121.1599**	**8,121.1599**	**1.9665**	**0.0000**	**8,162.4557**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	6.6311	57.7485	44.5730	0.0411	18.2141	3.1393	21.3534	9.9699	2.8881	12.8580	0.0000	4,323.9037	4,323.9037	1.2396	0.0000	4,349.9355
Year Two	128.0433	31.9449	27.1374	0.0393	0.8094	2.1478	2.9572	0.2165	2.0188	2.2352	0.0000	3,797.2562	3,797.2562	0.7269	0.0000	3,812.5203
Total	**134.6744**	**89.6934**	**71.7104**	**0.0803**	**19.0236**	**5.2871**	**24.3107**	**10.1864**	**4.9069**	**15.0932**	**0.0000**	**8,121.1599**	**8,121.1599**	**1.9665**	**0.0000**	**8,162.4557**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/7/2014	5	5	
2	Grading	Grading	1/8/2014	1/17/2014	5	8	
3	Building Construction	Building Construction	1/18/2014	3/13/2015	5	300	
4	Paving	Paving	3/14/2015	4/8/2015	5	18	
5	Architectural Coating	Architectural Coating	4/9/2015	5/20/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 247,050; Residential Outdoor: 82,350; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	88.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817		3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.5523**	**2.3714**	**8.9238**	**3.3675**	**2.1817**	**5.5492**		**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8669	41.0997	26.7538	0.0298		2.3714	2.3714		2.1817	2.1817	0.0000	3,162.4266	3,162.4266	0.9345		3,182.0518
Total	**3.8669**	**41.0997**	**26.7538**	**0.0298**	**6.5523**	**2.3714**	**8.9238**	**3.3675**	**2.1817**	**5.5492**	**0.0000**	**3,162.4266**	**3,162.4266**	**0.9345**		**3,182.0518**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3858	0.1073	1.3434	1.5900e-003	0.1232	1.3300e-003	0.1246	0.0327	1.1800e-003	0.0339		140.0103	140.0103	9.5800e-003		140.2115
Total	**0.3858**	**0.1073**	**1.3434**	**1.5900e-003**	**0.1232**	**1.3300e-003**	**0.1246**	**0.0327**	**1.1800e-003**	**0.0339**		**140.0103**	**140.0103**	**9.5800e-003**		**140.2115**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4997	1.6016	1.9835	3.1300e-003	0.0865	0.0317	0.1183	0.0247	0.0291	0.0539		319.9193	319.9193	3.1500e-003		319.9855
Worker	2.2634	0.6293	7.8813	9.3300e-003	0.7229	7.7800e-003	0.7307	0.1918	6.9100e-003	0.1987		821.3937	821.3937	0.0562		822.5738
Total	**2.7631**	**2.2309**	**9.8647**	**0.0125**	**0.8094**	**0.0395**	**0.8489**	**0.2165**	**0.0361**	**0.2525**		**1,141.3130**	**1,141.3130**	**0.0594**		**1,142.5593**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.4997	1.6016	1.9835	3.1300e-003	0.0865	0.0317	0.1183	0.0247	0.0291	0.0539		319.9193	319.9193	3.1500e-003		319.9855
Worker	2.2634	0.6293	7.8813	9.3300e-003	0.7229	7.7800e-003	0.7307	0.1918	6.9100e-003	0.1987		821.3937	821.3937	0.0562		822.5738
Total	**2.7631**	**2.2309**	**9.8647**	**0.0125**	**0.8094**	**0.0395**	**0.8489**	**0.2165**	**0.0361**	**0.2525**		**1,141.3130**	**1,141.3130**	**0.0594**		**1,142.5593**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	1.3719	1.6679	3.1200e-003	0.0865	0.0241	0.1106	0.0247	0.0221	0.0468		315.5805	315.5805	2.7200e-003		315.6376
Worker	1.9848	0.5431	6.7250	9.3100e-003	0.7229	6.9600e-003	0.7299	0.1918	6.2300e-003	0.1980		792.0986	792.0986	0.0493		793.1344
Total	**2.3832**	**1.9150**	**8.3929**	**0.0124**	**0.8094**	**0.0310**	**0.8405**	**0.2165**	**0.0284**	**0.2448**		**1,107.6790**	**1,107.6790**	**0.0521**		**1,108.7720**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3983	1.3719	1.6679	3.1200e-003	0.0865	0.0241	0.1106	0.0247	0.0221	0.0468		315.5805	315.5805	2.7200e-003		315.6376
Worker	1.9848	0.5431	6.7250	9.3100e-003	0.7229	6.9600e-003	0.7299	0.1918	6.2300e-003	0.1980		792.0986	792.0986	0.0493		793.1344
Total	**2.3832**	**1.9150**	**8.3929**	**0.0124**	**0.8094**	**0.0310**	**0.8405**	**0.2165**	**0.0284**	**0.2448**		**1,107.6790**	**1,107.6790**	**0.0521**		**1,108.7720**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280		1,921.3091	1,921.3091	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**		**1,921.3091**	**1,921.3091**	**0.5588**		**1,933.0446**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.4511**	**0.1234**	**1.5284**	**2.1200e-003**	**0.1643**	**1.5800e-003**	**0.1659**	**0.0436**	**1.4200e-003**	**0.0450**		**180.0224**	**180.0224**	**0.0112**		**180.2578**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9601	20.3064	12.6794	0.0186		1.2241	1.2241		1.1280	1.1280	0.0000	1,921.3090	1,921.3090	0.5588		1,933.0446
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9601**	**20.3064**	**12.6794**	**0.0186**		**1.2241**	**1.2241**		**1.1280**	**1.1280**	**0.0000**	**1,921.3090**	**1,921.3090**	**0.5588**		**1,933.0446**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4511	0.1234	1.5284	2.1200e-003	0.1643	1.5800e-003	0.1659	0.0436	1.4200e-003	0.0450		180.0224	180.0224	0.0112		180.2578
Total	**0.4511**	**0.1234**	**1.5284**	**2.1200e-003**	**0.1643**	**1.5800e-003**	**0.1659**	**0.0436**	**1.4200e-003**	**0.0450**		**180.0224**	**180.0224**	**0.0112**		**180.2578**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	127.2308					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**127.6374**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4060	0.1111	1.3756	1.9000e-003	0.1479	1.4200e-003	0.1493	0.0392	1.2700e-003	0.0405		162.0202	162.0202	0.0101		162.2320
Total	**0.4060**	**0.1111**	**1.3756**	**1.9000e-003**	**0.1479**	**1.4200e-003**	**0.1493**	**0.0392**	**1.2700e-003**	**0.0405**		**162.0202**	**162.0202**	**0.0101**		**162.2320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	127.2308					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**127.6374**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4060	0.1111	1.3756	1.9000e-003	0.1479	1.4200e-003	0.1493	0.0392	1.2700e-003	0.0405		162.0202	162.0202	0.0101		162.2320
Total	**0.4060**	**0.1111**	**1.3756**	**1.9000e-003**	**0.1479**	**1.4200e-003**	**0.1493**	**0.0392**	**1.2700e-003**	**0.0405**		**162.0202**	**162.0202**	**0.0101**		**162.2320**

Area S - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	73.00	Dwelling Unit	40.50	131,400.00	209

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 40.5

Construction Phase -

Grading - Area S = 40.5 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	187.50	40.50
tblLandUse	LotAcreage	23.70	40.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	4.4906	31.0346	21.7579	0.0315	0.2668	2.1336	2.4005	0.0719	2.0059	2.0777	0.0000	3,117.8096	3,117.8096	0.6911	0.0000	3,132.3220
Year Three	4.1513	29.3823	21.1620	0.0315	0.2669	1.9817	2.2486	0.0719	1.8616	1.9335	0.0000	3,086.6330	3,086.6330	0.6765	0.0000	3,100.8387
Year Four	75.1645	27.1761	20.3956	0.0315	0.2669	1.7934	2.0603	0.0719	1.6842	1.7561	0.0000	3,044.7986	3,044.7986	0.7055	0.0000	3,059.6134
Total	**91.1689**	**168.4571**	**116.6898**	**0.1583**	**19.0147**	**9.7897**	**28.0628**	**10.1855**	**9.1221**	**18.6253**	**0.0000**	**15,990.7554**	**15,990.7554**	**4.0228**	**0.0000**	**16,075.2340**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	7.3624	80.8641	53.3743	0.0639	18.2141	3.8810	21.3534	9.9699	3.5704	12.8580	0.0000	6,741.5141	6,741.5141	1.9498	0.0000	6,782.4599
Year Two	4.4906	31.0346	21.7579	0.0315	0.2668	2.1336	2.4005	0.0719	2.0059	2.0777	0.0000	3,117.8096	3,117.8096	0.6911	0.0000	3,132.3220
Year Three	4.1513	29.3823	21.1620	0.0315	0.2669	1.9817	2.2486	0.0719	1.8616	1.9335	0.0000	3,086.6330	3,086.6330	0.6765	0.0000	3,100.8387
Year Four	75.1645	27.1761	20.3956	0.0315	0.2669	1.7934	2.0603	0.0719	1.6842	1.7561	0.0000	3,044.7986	3,044.7986	0.7055	0.0000	3,059.6134
Total	**91.1689**	**168.4571**	**116.6898**	**0.1583**	**19.0147**	**9.7897**	**28.0628**	**10.1855**	**9.1221**	**18.6253**	**0.0000**	**15,990.7554**	**15,990.7554**	**4.0228**	**0.0000**	**16,075.2340**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2014	4/22/2014	5	30	
2	Grading	Grading	4/23/2014	8/5/2014	5	75	
3	Building Construction	Building Construction	8/6/2014	6/6/2017	5	740	
4	Paving	Paving	6/7/2017	8/22/2017	5	55	
5	Architectural Coating	Architectural Coating	8/23/2017	11/7/2017	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 40.5

Acres of Paving: 0

Residential Indoor: 266,085; Residential Outdoor: 88,695; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	26.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867	0.0000	4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**	**0.0000**	**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5948	0.0000	6.5948	3.3721	0.0000	3.3721			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.5948**	**3.8792**	**10.4740**	**3.3721**	**3.5689**	**6.9409**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5948	0.0000	6.5948	3.3721	0.0000	3.3721			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689	0.0000	6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**6.5948**	**3.8792**	**10.4740**	**3.3721**	**3.5689**	**6.9409**	**0.0000**	**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.5144	0.1430	1.7912	2.1200e-003	0.1643	1.7700e-003	0.1661	0.0436	1.5700e-003	0.0452		186.6804	186.6804	0.0128		186.9486
Total	**0.5144**	**0.1430**	**1.7912**	**2.1200e-003**	**0.1643**	**1.7700e-003**	**0.1661**	**0.0436**	**1.5700e-003**	**0.0452**		**186.6804**	**186.6804**	**0.0128**		**186.9486**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3075	0.9856	1.2206	1.9300e-003	0.0533	0.0195	0.0728	0.0152	0.0179	0.0331		196.8734	196.8734	1.9400e-003		196.9141
Worker	0.6687	0.1859	2.3286	2.7600e-003	0.2136	2.3000e-003	0.2159	0.0567	2.0400e-003	0.0587		242.6845	242.6845	0.0166		243.0332
Total	**0.9763**	**1.1715**	**3.5492**	**4.6900e-003**	**0.2668**	**0.0218**	**0.2887**	**0.0719**	**0.0200**	**0.0918**		**439.5579**	**439.5579**	**0.0185**		**439.9473**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973	0.0000	2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**	**0.0000**	**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3075	0.9856	1.2206	1.9300e-003	0.0533	0.0195	0.0728	0.0152	0.0179	0.0331		196.8734	196.8734	1.9400e-003		196.9141
Worker	0.6687	0.1859	2.3286	2.7600e-003	0.2136	2.3000e-003	0.2159	0.0567	2.0400e-003	0.0587		242.6845	242.6845	0.0166		243.0332
Total	**0.9763**	**1.1715**	**3.5492**	**4.6900e-003**	**0.2668**	**0.0218**	**0.2887**	**0.0719**	**0.0200**	**0.0918**		**439.5579**	**439.5579**	**0.0185**		**439.9473**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2451	0.8442	1.0264	1.9200e-003	0.0533	0.0148	0.0681	0.0152	0.0136	0.0288		194.2034	194.2034	1.6700e-003		194.2385
Worker	0.5864	0.1605	1.9869	2.7500e-003	0.2136	2.0600e-003	0.2156	0.0567	1.8400e-003	0.0585		234.0291	234.0291	0.0146		234.3352
Total	**0.8316**	**1.0047**	**3.0133**	**4.6700e-003**	**0.2668**	**0.0169**	**0.2837**	**0.0719**	**0.0155**	**0.0873**		**428.2325**	**428.2325**	**0.0162**		**428.5737**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904	0.0000	2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**	**0.0000**	**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2451	0.8442	1.0264	1.9200e-003	0.0533	0.0148	0.0681	0.0152	0.0136	0.0288		194.2034	194.2034	1.6700e-003		194.2385
Worker	0.5864	0.1605	1.9869	2.7500e-003	0.2136	2.0600e-003	0.2156	0.0567	1.8400e-003	0.0585		234.0291	234.0291	0.0146		234.3352
Total	**0.8316**	**1.0047**	**3.0133**	**4.6700e-003**	**0.2668**	**0.0169**	**0.2837**	**0.0719**	**0.0155**	**0.0873**		**428.2325**	**428.2325**	**0.0162**		**428.5737**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485		2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**		**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2268	0.7364	0.9452	1.9100e-003	0.0533	0.0125	0.0657	0.0152	0.0114	0.0267		191.9091	191.9091	1.5200e-003		191.9409
Worker	0.5183	0.1396	1.7101	2.7500e-003	0.2136	1.8900e-003	0.2155	0.0567	1.7000e-003	0.0584		225.4375	225.4375	0.0129		225.7088
Total	**0.7451**	**0.8760**	**2.6553**	**4.6600e-003**	**0.2669**	**0.0143**	**0.2812**	**0.0719**	**0.0131**	**0.0850**		**417.3466**	**417.3466**	**0.0144**		**417.6497**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.4062	28.5063	18.5066	0.0268		1.9674	1.9674		1.8485	1.8485	0.0000	2,669.2864	2,669.2864	0.6620		2,683.1890
Total	**3.4062**	**28.5063**	**18.5066**	**0.0268**		**1.9674**	**1.9674**		**1.8485**	**1.8485**	**0.0000**	**2,669.2864**	**2,669.2864**	**0.6620**		**2,683.1890**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2268	0.7364	0.9452	1.9100e-003	0.0533	0.0125	0.0657	0.0152	0.0114	0.0267		191.9091	191.9091	1.5200e-003		191.9409
Worker	0.5183	0.1396	1.7101	2.7500e-003	0.2136	1.8900e-003	0.2155	0.0567	1.7000e-003	0.0584		225.4375	225.4375	0.0129		225.7088
Total	**0.7451**	**0.8760**	**2.6553**	**4.6600e-003**	**0.2669**	**0.0143**	**0.2812**	**0.0719**	**0.0131**	**0.0850**		**417.3466**	**417.3466**	**0.0144**		**417.6497**

3.4 Building Construction - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1993	0.6505	0.8275	1.9100e-003	0.0533	0.0105	0.0638	0.0152	9.6300e-003	0.0249		188.5804	188.5804	1.4100e-003		188.6099
Worker	0.4499	0.1200	1.4389	2.7400e-003	0.2136	1.7400e-003	0.2153	0.0567	1.5800e-003	0.0582		216.4129	216.4129	0.0114		216.6515
Total	**0.6491**	**0.7704**	**2.2665**	**4.6500e-003**	**0.2669**	**0.0122**	**0.2791**	**0.0719**	**0.0112**	**0.0831**		**404.9933**	**404.9933**	**0.0128**		**405.2615**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1993	0.6505	0.8275	1.9100e-003	0.0533	0.0105	0.0638	0.0152	9.6300e-003	0.0249		188.5804	188.5804	1.4100e-003		188.6099
Worker	0.4499	0.1200	1.4389	2.7400e-003	0.2136	1.7400e-003	0.2153	0.0567	1.5800e-003	0.0582		216.4129	216.4129	0.0114		216.6515
Total	**0.6491**	**0.7704**	**2.2665**	**4.6500e-003**	**0.2669**	**0.0122**	**0.2791**	**0.0719**	**0.0112**	**0.0831**		**404.9933**	**404.9933**	**0.0128**		**405.2615**

3.5 Paving - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473		2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**		**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2595	0.0692	0.8302	1.5800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.1000e-004	0.0336		124.8536	124.8536	6.5500e-003		124.9913
Total	**0.2595**	**0.0692**	**0.8302**	**1.5800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.1000e-004**	**0.0336**		**124.8536**	**124.8536**	**6.5500e-003**		**124.9913**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9074	20.2964	14.7270	0.0223		1.1384	1.1384		1.0473	1.0473	0.0000	2,281.0588	2,281.0588	0.6989		2,295.7360
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.9074**	**20.2964**	**14.7270**	**0.0223**		**1.1384**	**1.1384**		**1.0473**	**1.0473**	**0.0000**	**2,281.0588**	**2,281.0588**	**0.6989**		**2,295.7360**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2595	0.0692	0.8302	1.5800e-003	0.1232	1.0000e-003	0.1242	0.0327	9.1000e-004	0.0336		124.8536	124.8536	6.5500e-003		124.9913
Total	**0.2595**	**0.0692**	**0.8302**	**1.5800e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.1000e-004**	**0.0336**		**124.8536**	**124.8536**	**6.5500e-003**		**124.9913**

3.6 Architectural Coating - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.7457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733		281.4481	281.4481	0.0297		282.0721
Total	**75.0780**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**		**281.4481**	**281.4481**	**0.0297**		**282.0721**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0231	0.2767	5.3000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		41.6179	41.6179	2.1800e-003		41.6638
Total	**0.0865**	**0.0231**	**0.2767**	**5.3000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**41.6179**	**41.6179**	**2.1800e-003**		**41.6638**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	74.7457					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3323	2.1850	1.8681	2.9700e-003		0.1733	0.1733		0.1733	0.1733	0.0000	281.4481	281.4481	0.0297		282.0721
Total	**75.0780**	**2.1850**	**1.8681**	**2.9700e-003**		**0.1733**	**0.1733**		**0.1733**	**0.1733**	**0.0000**	**281.4481**	**281.4481**	**0.0297**		**282.0721**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0865	0.0231	0.2767	5.3000e-004	0.0411	3.3000e-004	0.0414	0.0109	3.0000e-004	0.0112		41.6179	41.6179	2.1800e-003		41.6638
Total	**0.0865**	**0.0231**	**0.2767**	**5.3000e-004**	**0.0411**	**3.3000e-004**	**0.0414**	**0.0109**	**3.0000e-004**	**0.0112**		**41.6179**	**41.6179**	**2.1800e-003**		**41.6638**

Off-Site Road Extension - Project Site to Shasta Dam Blvd - Phase 3

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Off-Site Road Extension	0.80	Acre	0.80	34,848.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Road Extension = 20 days

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
Year One	1.9057	12.5637	9.7484	0.0131	0.8349	0.9313	1.7662	0.4356	0.8911	1.3267	0.0000	1,300.5871	1,300.5871	0.3087	0.0000	1,307.0707
Total	**1.9057**	**12.5637**	**9.7484**	**0.0131**	**0.8349**	**0.9313**	**1.7662**	**0.4356**	**0.8911**	**1.3267**	**0.0000**	**1,300.5871**	**1,300.5871**	**0.3087**	**0.0000**	**1,307.0707**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	1.9057	12.5637	9.7484	0.0131	0.8349	0.9313	1.7662	0.4356	0.8911	1.3267	0.0000	1,300.5871	1,300.5871	0.3087	0.0000	1,307.0707
Total	**1.9057**	**12.5637**	**9.7484**	**0.0131**	**0.8349**	**0.9313**	**1.7662**	**0.4356**	**0.8911**	**1.3267**	**0.0000**	**1,300.5871**	**1,300.5871**	**0.3087**	**0.0000**	**1,307.0707**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/16/2014	1/29/2014	5	10	
2	Paving	Paving	1/30/2014	2/12/2014	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4929	12.4922	8.8528	0.0121		0.9304	0.9304		0.8904	0.8904		1,207.2469	1,207.2469	0.2515		1,212.5281
Total	**1.4929**	**12.4922**	**8.8528**	**0.0121**	**0.7528**	**0.9304**	**1.6832**	**0.4138**	**0.8904**	**1.3041**		**1,207.2469**	**1,207.2469**	**0.2515**		**1,212.5281**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2572	0.0715	0.8956	1.0600e-003	0.0822	8.8000e-004	0.0830	0.0218	7.8000e-004	0.0226		93.3402	93.3402	6.3900e-003		93.4743
Total	**0.2572**	**0.0715**	**0.8956**	**1.0600e-003**	**0.0822**	**8.8000e-004**	**0.0830**	**0.0218**	**7.8000e-004**	**0.0226**		**93.3402**	**93.3402**	**6.3900e-003**		**93.4743**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.7528	0.0000	0.7528	0.4138	0.0000	0.4138			0.0000			0.0000
Off-Road	1.4929	12.4922	8.8528	0.0121		0.9304	0.9304		0.8904	0.8904	0.0000	1,207.2469	1,207.2469	0.2515		1,212.5281
Total	**1.4929**	**12.4922**	**8.8528**	**0.0121**	**0.7528**	**0.9304**	**1.6832**	**0.4138**	**0.8904**	**1.3041**	**0.0000**	**1,207.2469**	**1,207.2469**	**0.2515**		**1,212.5281**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2572	0.0715	0.8956	1.0600e-003	0.0822	8.8000e-004	0.0830	0.0218	7.8000e-004	0.0226		93.3402	93.3402	6.3900e-003		93.4743
Total	**0.2572**	**0.0715**	**0.8956**	**1.0600e-003**	**0.0822**	**8.8000e-004**	**0.0830**	**0.0218**	**7.8000e-004**	**0.0226**		**93.3402**	**93.3402**	**6.3900e-003**		**93.4743**

3.3 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2331	11.8542	7.3554	0.0111		0.7457	0.7457		0.6898	0.6898		1,103.2826	1,103.2826	0.2973		1,109.5248
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4427**	**11.8542**	**7.3554**	**0.0111**		**0.7457**	**0.7457**		**0.6898**	**0.6898**		**1,103.2826**	**1,103.2826**	**0.2973**		**1,109.5248**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2331	11.8542	7.3554	0.0111		0.7457	0.7457		0.6898	0.6898	0.0000	1,103.2826	1,103.2826	0.2973		1,109.5248
Paving	0.2096					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.4427**	**11.8542**	**7.3554**	**0.0111**		**0.7457**	**0.7457**		**0.6898**	**0.6898**	**0.0000**	**1,103.2826**	**1,103.2826**	**0.2973**		**1,109.5248**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.4630	0.1287	1.6121	1.9100e-003	0.1479	1.5900e-003	0.1495	0.0392	1.4100e-003	0.0406		168.0124	168.0124	0.0115		168.2537
Total	**0.4630**	**0.1287**	**1.6121**	**1.9100e-003**	**0.1479**	**1.5900e-003**	**0.1495**	**0.0392**	**1.4100e-003**	**0.0406**		**168.0124**	**168.0124**	**0.0115**		**168.2537**

Operational Emissions

Pounds per day

Mountain Gate at Shasta Area Plan - Buildout

Shasta County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	195.59	1000sqft	14.20	195,586.00	0
Single Family Housing	654.00	Dwelling Unit	161.00	1,177,200.00	1870
Condo/Townhouse	705.00	Dwelling Unit	109.00	705,000.00	2016
Apartments Low Rise	305.00	Dwelling Unit	16.40	305,000.00	872
City Park	27.90	Acre	27.90	1,215,324.00	0
Fire Station	43.56	1000sqft	2.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2030
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage per Area Plan. Excluded are 221 acres of open space and 36.2 acres of right of way

Vehicle Trips - Trip generation per 2012 Omni-Means Technical Memorandum

Mobile Land Use Mitigation -

Area Mitigation -

2.0 Emissions Summary

2.1 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2,656.5894	36.1289	3,274.0561	1.2326		441.5063	441.5063		441.4934	441.4934	46,212.1599	19,627.9554	65,840.1153	42.8818	3.6349	67,867.4633
Energy	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
Mobile	196.9479	192.9857	680.5375	2.1521	112.7965	4.1909	116.9874	30.3173	3.8611	34.1784		169,339.4141	169,339.4141	3.6315		169,415.6763
Total	**2,854.7342**	**239.3871**	**3,959.2742**	**3.4500**	**112.7965**	**446.5242**	**559.3206**	**30.3173**	**446.1814**	**476.4987**	**46,212.1599**	**202,024.1247**	**248,236.2846**	**46.7636**	**3.8743**	**250,419.3562**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	112.9193	1.5788	137.1050	7.2500e-003		2.7700	2.7700		2.7488	2.7488	0.0000	31,961.1318	31,961.1318	0.8435	0.5814	32,159.0861
Energy	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
Mobile	146.5813	149.9386	567.9389	1.5026	77.3080	2.9501	80.2581	20.7788	2.7183	23.4970		118,211.7385	118,211.7385	2.6294		118,266.9560
Total	**260.6974**	**161.7899**	**709.7245**	**1.5751**	**77.3080**	**6.5470**	**83.8550**	**20.7788**	**6.2940**	**27.0728**	**0.0000**	**163,229.6256**	**163,229.6256**	**3.7232**	**0.8208**	**163,562.2586**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**90.87**	**32.41**	**82.07**	**54.34**	**31.46**	**98.53**	**85.01**	**31.46**	**98.59**	**94.32**	**100.00**	**19.20**	**34.24**	**92.04**	**78.81**	**34.68**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	146.5813	149.9386	567.9389	1.5026	77.3080	2.9501	80.2581	20.7788	2.7183	23.4970		118,211.7385	118,211.7385	2.6294		118,266.9560
Unmitigated	196.9479	192.9857	680.5375	2.1521	112.7965	4.1909	116.9874	30.3173	3.8611	34.1784		169,339.4141	169,339.4141	3.6315		169,415.6763

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,009.95	2,183.80	1851.35	5,729,247	3,926,687
City Park	44.36	44.36	44.36	94,704	64,908
Condo/Townhouse	4,645.95	5,047.80	4279.35	13,243,014	9,076,440
Fire Station	43.56	0.00	0.00	59,479	40,766
Single Family Housing	6,258.78	6,592.32	5735.58	17,743,830	12,161,190
Strip Mall	6,419.13	8,222.44	3995.82	9,749,272	6,681,914
Total	19,421.73	22,090.72	15,906.46	46,619,545	31,951,905

3.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Fire Station	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.365560	0.038003	0.191238	0.146013	0.085878	0.010377	0.019239	0.125563	0.001682	0.000832	0.009663	0.001239	0.004712

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
NaturalGas Unmitigated	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165

4.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	34898.1	0.3764	3.2161	1.3686	0.0205		0.2600	0.2600		0.2600	0.2600		4,105.6610	4,105.6610	0.0787	0.0753	4,130.6473
Fire Station	1637.38	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6328	192.6328	3.6900e-003	3.5300e-003	193.8051
Single Family Housing	56151.8	0.6056	5.1748	2.2020	0.0330		0.4184	0.4184		0.4184	0.4184		6,606.0914	6,606.0914	0.1266	0.1211	6,646.2950
Strip Mall	5974.75	0.0644	0.5858	0.4920	3.5100e-003		0.0445	0.0445		0.0445	0.0445		702.9118	702.9118	0.0135	0.0129	707.1896
Apartments Low Rise	12320.4	0.1329	1.1354	0.4832	7.2500e-003		0.0918	0.0918		0.0918	0.0918		1,449.4583	1,449.4583	0.0278	0.0266	1,458.2795
Total		**1.1969**	**10.2726**	**4.6806**	**0.0653**		**0.8269**	**0.8269**		**0.8269**	**0.8269**		**13,056.7553**	**13,056.7553**	**0.2503**	**0.2394**	**13,136.2165**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	34.8981	0.3764	3.2161	1.3686	0.0205		0.2600	0.2600		0.2600	0.2600		4,105.6610	4,105.6610	0.0787	0.0753	4,130.6473
Fire Station	1.63738	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6328	192.6328	3.6900e-003	3.5300e-003	193.8051
Single Family Housing	56.1518	0.6056	5.1748	2.2020	0.0330		0.4184	0.4184		0.4184	0.4184		6,606.0914	6,606.0914	0.1266	0.1211	6,646.2950
Strip Mall	5.97475	0.0644	0.5858	0.4920	3.5100e-003		0.0445	0.0445		0.0445	0.0445		702.9118	702.9118	0.0135	0.0129	707.1896
Apartments Low Rise	12.3204	0.1329	1.1354	0.4832	7.2500e-003		0.0918	0.0918		0.0918	0.0918		1,449.4583	1,449.4583	0.0278	0.0266	1,458.2795
Total		**1.1969**	**10.2726**	**4.6806**	**0.0653**		**0.8269**	**0.8269**		**0.8269**	**0.8269**		**13,056.7553**	**13,056.7553**	**0.2503**	**0.2394**	**13,136.2165**

5.0 Area Detail

5.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	112.9193	1.5788	137.1050	7.2500e-003		2.7700	2.7700		2.7488	2.7488	0.0000	31,961.1318	31,961.1318	0.8435	0.5814	32,159.0861
Unmitigated	2,656.5894	36.1289	3,274.0561	1.2326		441.5063	441.5063		441.4934	441.4934	46,212.1599	19,627.9554	65,840.1153	42.8818	3.6349	67,867.4633

5.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	27.9826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	77.9317					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,546.5772	34.5502	3,137.1096	1.2254		440.7449	440.7449		440.7320	440.7320	46,212.1599	19,380.7059	65,592.8658	42.6462	3.6349	67,615.2650
Landscaping	4.0978	1.5787	136.9465	7.2500e-003		0.7614	0.7614		0.7614	0.7614		247.2495	247.2495	0.2357		252.1984
Total	**2,656.5894**	**36.1289**	**3,274.0561**	**1.2326**		**441.5063**	**441.5063**		**441.4934**	**441.4934**	**46,212.1599**	**19,627.9554**	**65,840.1153**	**42.8818**	**3.6349**	**67,867.4633**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	27.9826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	77.9317					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.9071	1.3000e-004	0.1586	0.0000		2.0086	2.0086		1.9874	1.9874	0.0000	31,713.8824	31,713.8824	0.6079	0.5814	31,906.8878
Landscaping	4.0978	1.5787	136.9465	7.2500e-003		0.7614	0.7614		0.7614	0.7614		247.2495	247.2495	0.2357		252.1984
Total	**112.9193**	**1.5788**	**137.1050**	**7.2500e-003**		**2.7700**	**2.7700**		**2.7488**	**2.7488**	**0.0000**	**31,961.1318**	**31,961.1318**	**0.8435**	**0.5814**	**32,159.0861**

Mountain Gate at Shasta Area Plan - Buildout

Shasta County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	195.59	1000sqft	14.20	195,586.00	0
Single Family Housing	654.00	Dwelling Unit	161.00	1,177,200.00	1870
Condo/Townhouse	705.00	Dwelling Unit	109.00	705,000.00	2016
Apartments Low Rise	305.00	Dwelling Unit	16.40	305,000.00	872
City Park	27.90	Acre	27.90	1,215,324.00	0
Fire Station	43.56	1000sqft	2.00	43,560.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2030
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage per Area Plan. Excluded are 221 acres of open space and 36.2 acres of right of way

Vehicle Trips - Trip generation per 2012 Omni-Means Technical Memorandum

Mobile Land Use Mitigation -

Area Mitigation -

2.0 Emissions Summary

2.1 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2,656.5894	36.1289	3,274.0561	1.2326		441.5063	441.5063		441.4934	441.4934	46,212.1599	19,627.9554	65,840.1153	42.8818	3.6349	67,867.4633
Energy	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
Mobile	212.2554	210.8299	927.1684	2.0387	112.7965	4.2150	117.0115	30.3173	3.8832	34.2005		161,453.0613	161,453.0613	3.6568		161,529.8543
Total	**2,870.0417**	**257.2314**	**4,205.9051**	**3.3366**	**112.7965**	**446.5482**	**559.3447**	**30.3173**	**446.2035**	**476.5208**	**46,212.1599**	**194,137.7719**	**240,349.9319**	**46.7889**	**3.8743**	**242,533.5342**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	112.9193	1.5788	137.1050	7.2500e-003		2.7700	2.7700		2.7488	2.7488	0.0000	31,961.1318	31,961.1318	0.8435	0.5814	32,159.0861
Energy	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
Mobile	155.0613	163.1003	829.7659	1.4245	77.3080	2.9741	80.2821	20.7788	2.7404	23.5192		112,635.3509	112,635.3509	2.6547		112,691.0991
Total	**269.1775**	**174.9516**	**971.5516**	**1.4970**	**77.3080**	**6.5710**	**83.8790**	**20.7788**	**6.3162**	**27.0949**	**0.0000**	**157,653.2380**	**157,653.2380**	**3.7484**	**0.8208**	**157,986.4017**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**90.62**	**31.99**	**76.90**	**55.13**	**31.46**	**98.53**	**85.00**	**31.46**	**98.58**	**94.31**	**100.00**	**18.79**	**34.41**	**91.99**	**78.81**	**34.86**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	155.0613	163.1003	829.7659	1.4245	77.3080	2.9741	80.2821	20.7788	2.7404	23.5192		112,635.3509	112,635.3509	2.6547		112,691.0991
Unmitigated	212.2554	210.8299	927.1684	2.0387	112.7965	4.2150	117.0115	30.3173	3.8832	34.2005		161,453.0613	161,453.0613	3.6568		161,529.8543

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,009.95	2,183.80	1851.35	5,729,247	3,926,687
City Park	44.36	44.36	44.36	94,704	64,908
Condo/Townhouse	4,645.95	5,047.80	4279.35	13,243,014	9,076,440
Fire Station	43.56	0.00	0.00	59,479	40,766
Single Family Housing	6,258.78	6,592.32	5735.58	17,743,830	12,161,190
Strip Mall	6,419.13	8,222.44	3995.82	9,749,272	6,681,914
Total	19,421.73	22,090.72	15,906.46	46,619,545	31,951,905

3.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Fire Station	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.365560	0.038003	0.191238	0.146013	0.085878	0.010377	0.019239	0.125563	0.001682	0.000832	0.009663	0.001239	0.004712

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165
NaturalGas Unmitigated	1.1969	10.2726	4.6806	0.0653		0.8269	0.8269		0.8269	0.8269		13,056.7553	13,056.7553	0.2503	0.2394	13,136.2165

4.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	34898.1	0.3764	3.2161	1.3686	0.0205		0.2600	0.2600		0.2600	0.2600		4,105.6610	4,105.6610	0.0787	0.0753	4,130.6473
Fire Station	1637.38	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6328	192.6328	3.6900e-003	3.5300e-003	193.8051
Single Family Housing	56151.8	0.6056	5.1748	2.2020	0.0330		0.4184	0.4184		0.4184	0.4184		6,606.0914	6,606.0914	0.1266	0.1211	6,646.2950
Strip Mall	5974.75	0.0644	0.5858	0.4920	3.5100e-003		0.0445	0.0445		0.0445	0.0445		702.9118	702.9118	0.0135	0.0129	707.1896
Apartments Low Rise	12320.4	0.1329	1.1354	0.4832	7.2500e-003		0.0918	0.0918		0.0918	0.0918		1,449.4583	1,449.4583	0.0278	0.0266	1,458.2795
Total		**1.1969**	**10.2726**	**4.6806**	**0.0653**		**0.8269**	**0.8269**		**0.8269**	**0.8269**		**13,056.7553**	**13,056.7553**	**0.2503**	**0.2394**	**13,136.2165**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	34.8981	0.3764	3.2161	1.3686	0.0205		0.2600	0.2600		0.2600	0.2600		4,105.6610	4,105.6610	0.0787	0.0753	4,130.6473
Fire Station	1.63738	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6328	192.6328	3.6900e-003	3.5300e-003	193.8051
Single Family Housing	56.1518	0.6056	5.1748	2.2020	0.0330		0.4184	0.4184		0.4184	0.4184		6,606.0914	6,606.0914	0.1266	0.1211	6,646.2950
Strip Mall	5.97475	0.0644	0.5858	0.4920	3.5100e-003		0.0445	0.0445		0.0445	0.0445		702.9118	702.9118	0.0135	0.0129	707.1896
Apartments Low Rise	12.3204	0.1329	1.1354	0.4832	7.2500e-003		0.0918	0.0918		0.0918	0.0918		1,449.4583	1,449.4583	0.0278	0.0266	1,458.2795
Total		**1.1969**	**10.2726**	**4.6806**	**0.0653**		**0.8269**	**0.8269**		**0.8269**	**0.8269**		**13,056.7553**	**13,056.7553**	**0.2503**	**0.2394**	**13,136.2165**

5.0 Area Detail

5.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	112.9193	1.5788	137.1050	7.2500e-003		2.7700	2.7700		2.7488	2.7488	0.0000	31,961.1318	31,961.1318	0.8435	0.5814	32,159.0861
Unmitigated	2,656.5894	36.1289	3,274.0561	1.2326		441.5063	441.5063		441.4934	441.4934	46,212.1599	19,627.9554	65,840.1153	42.8818	3.6349	67,867.4633

5.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	27.9826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	77.9317					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,546.5772	34.5502	3,137.1096	1.2254		440.7449	440.7449		440.7320	440.7320	46,212.1599	19,380.7059	65,592.8658	42.6462	3.6349	67,615.2650
Landscaping	4.0978	1.5787	136.9465	7.2500e-003		0.7614	0.7614		0.7614	0.7614		247.2495	247.2495	0.2357		252.1984
Total	**2,656.5894**	**36.1289**	**3,274.0561**	**1.2326**		**441.5063**	**441.5063**		**441.4934**	**441.4934**	**46,212.1599**	**19,627.9554**	**65,840.1153**	**42.8818**	**3.6349**	**67,867.4633**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	27.9826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	77.9317					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2.9071	1.3000e-004	0.1586	0.0000		2.0086	2.0086		1.9874	1.9874	0.0000	31,713.8824	31,713.8824	0.6079	0.5814	31,906.8878
Landscaping	4.0978	1.5787	136.9465	7.2500e-003		0.7614	0.7614		0.7614	0.7614		247.2495	247.2495	0.2357		252.1984
Total	**112.9193**	**1.5788**	**137.1050**	**7.2500e-003**		**2.7700**	**2.7700**		**2.7488**	**2.7488**	**0.0000**	**31,961.1318**	**31,961.1318**	**0.8435**	**0.5814**	**32,159.0861**

Appendix 4.4-2

Carbon Monoxide Hotspots

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Oasis Road / Interstate 5 Southbound Ram
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	5 (E)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB Ramps	*	-45	-45	23	23	* AG	219	3.6	.0	25.8
B. Oasis Road	*	-45	-3	30	0	* AG	1430	3.6	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-6	17	1.8
2. Recpt 2	*	-30	12	1.8
3. Recpt 3	*	-30	-12	1.8
4. Recpt 4	*	30	-12	1.8

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	* CONC/LINK (PPM) A	B
1. Recpt 1	*	210.	* .3	* .0	.2
2. Recpt 2	*	111.	* .4	* .0	.4
3. Recpt 3	*	69.	* .5	* .0	.4
4. Recpt 4	*	283.	* .5	* .0	.4

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR 151 - Median Avenue 2020
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S              Z0= 100. CM            ALT=   950. (M)
       BRG= WORST CASE             VD=   .0 CM/S
      CLAS=     7 (G)              VS=   .0 CM/S
      MIXH= 1000. M                AMB=   .0 PPM
     SIGTH=    5. DEGREES         TEMP=  8.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *              EF     H     W
   DESCRIPTION   *   X1    Y1     X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*-----------------------------
A. SR 151        *   150     3  -150    -3 *  AG   1257   4.2     .0  25.8
B. Median Ave    *    -3    -3    -3   105 *  AG    108   4.2     .0  25.8


III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
------------*--------------------
 1. Recpt 1  *    -23      8   1.8
 2. Recpt 2  *    -23     30   1.8
 3. Recpt 3  *    -23     51   1.8
 4. Recpt 4  *    -23     69   1.8
 5. Recpt 5  *    -23     90   1.8
 6. Recpt 6  *     12     90   1.8
 7. Recpt 7  *     12     69   1.8
 8. Recpt 8  *     12     51   1.8
 9. Recpt 9  *     12     30   1.8
10. Recpt 10 *     12      8   1.8
11. Recpt 11 *    -54      8    .5
12. Recpt 12 *    -71      8    .5
13. Recpt 13 *    -71    -12    .5
14. Recpt 14 *    -45    -12    .5
15. Recpt 15 *     -8    -12    .5
16. Recpt 16 *      3    -12    .5
17. Recpt 17 *     21    -12    .5
18. Recpt 18 *     45    -12    .5
19. Recpt 19 *     30      8    .5
20. Recpt 20 *     53      8    .5

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2
```

JOB: SR 151 - Median Avenue 2020
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B
1. Recpt 1	92.	.7	.7	.0
2. Recpt 2	105.	.3	.3	.0
3. Recpt 3	113.	.2	.2	.0
4. Recpt 4	118.	.2	.1	.0
5. Recpt 5	124.	.1	.1	.0
6. Recpt 6	233.	.1	.1	.0
7. Recpt 7	238.	.2	.1	.0
8. Recpt 8	244.	.2	.2	.0
9. Recpt 9	252.	.3	.3	.0
10. Recpt 10	265.	.7	.7	.0
11. Recpt 11	92.	.8	.8	.0
12. Recpt 12	92.	.8	.8	.0
13. Recpt 13	84.	.8	.8	.0
14. Recpt 14	84.	.7	.7	.0
15. Recpt 15	82.	.7	.7	.0
16. Recpt 16	82.	.6	.6	.0
17. Recpt 17	276.	.7	.7	.0
18. Recpt 18	276.	.7	.7	.0
19. Recpt 19	266.	.7	.7	.0
20. Recpt 20	266.	.8	.8	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 151 - Mussel Shoals Ave 2020
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR 151	*	-15	2	15	2	* AG	1452	4.2	.0	25.8
B. Mussel Shoal	*	-2	15	-2	-15	* AG	193	4.2	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	0	3	1.8
2. Recpt 2	*	0	5	1.8
3. Recpt 3	*	0	9	1.8
4. Recpt 4	*	-3	9	.5
5. Recpt 5	*	-3	3	.5
6. Recpt 6	*	-3	5	.5
7. Recpt 7	*	-6	3	.5
8. Recpt 8	*	-5	0	.5
9. Recpt 9	*	0	0	.5
10. Recpt 10	*	0	-3	.5
11. Recpt 11	*	-3	-3	.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: SR 151 - Mussel Shoals Ave 2020
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

*	* PRED	* CONC/LINK
* BRG	* CONC	* (PPM)

RECEPTOR	(DEG)	(PPM)	A	B
1. Recpt 1	222.	.2	.2	.0
2. Recpt 2	220.	.3	.2	.0
3. Recpt 3	213.	.3	.3	.0
4. Recpt 4	149.	.3	.3	.0
5. Recpt 5	131.	.3	.3	.0
6. Recpt 6	137.	.3	.2	.0
7. Recpt 7	126.	.3	.3	.0
8. Recpt 8	51.	.3	.3	.0
9. Recpt 9	42.	.2	.2	.0
10. Recpt 10	322.	.3	.3	.0
11. Recpt 11	42.	.3	.3	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Pine Grove Ave / I-5 Southbound Ramps 20
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S              Z0= 100. CM            ALT=   950. (M)
       BRG= WORST CASE             VD=   .0 CM/S
      CLAS=     7 (G)              VS=   .0 CM/S
      MIXH=  100. M                AMB=   .0 PPM
     SIGTH=    5. DEGREES         TEMP=  8.0 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *              EF     H     W
   DESCRIPTION   *   X1    Y1     X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. I-5 SB Ramps *   -15     2     15     2 *  AG    242   4.2     .0  25.8
B. Pine Grove   *    -2    15     -2   -15 *  AG   1105   4.2     .0  25.8


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
-------------*--------------------
1. Recpt 1   *     -6      3   1.8
2. Recpt 2   *     -6     -2   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  * CONC/LINK
             *  BRG  * CONC  *   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B
-------------*-------*-------*----------
1. Recpt 1   *  132. *    .2 *   .0   .2
2. Recpt 2   *   50. *    .2 *   .0   .2
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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: Pine Grove Ave / I-5 Northbound Ramps 20
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S              Z0= 100. CM            ALT=   950. (M)
       BRG= WORST CASE             VD=   .0 CM/S
      CLAS=     7 (G)              VS=   .0 CM/S
      MIXH=  100. M                AMB=   .0 PPM
     SIGTH=    5. DEGREES         TEMP=  8.0 DEGREE (C)


  II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *              EF     H     W
   DESCRIPTION   *   X1    Y1     X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. I-5 NB Ramps *   -15     2     15     2 *  AG    242   4.2     .0  25.8
B. Pine Grove   *    -2    15     -2   -15 *  AG   1105   4.2     .0  25.8


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
-------------*--------------------
1. Recpt 1   *     30      6   1.8
2. Recpt 2   *     30     -3   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  * CONC/LINK
             *  BRG  * CONC  *   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B
-------------*-------*-------*---------
1. Recpt 1   *  250. *    .2 *   .0   .2
2. Recpt 2   *  264. *    .2 *   .0   .1
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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Oasis Road / I- 5 Northbound Ramp 2020
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	5 (E)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	7.2 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB Ramps	*	-45	-45	23	23	* AG	219	4.2	.0	25.8
B. Oasis Road	*	-45	-3	30	0	* AG	1430	4.2	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-6	17	1.8
2. Recpt 2	*	-30	12	1.8
3. Recpt 3	*	-30	-12	1.8
4. Recpt 4	*	30	-12	1.8
5. Recpt 5	*	30	9	.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1. Recpt 1	*	210.	*	.3	*	.0	.3
2. Recpt 2	*	111.	*	.5	*	.0	.4
3. Recpt 3	*	69.	*	.5	*	.0	.5
4. Recpt 4	*	283.	*	.6	*	.0	.5
5. Recpt 5	*	254.	*	.6	*	.0	.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Mt Gate Rd / I-5 Northbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	5 (E)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB Ramps	*	-45	-45	23	23	* AG	554	5.0	.0	25.8
B. Mt Gate Rd	*	-45	-3	30	0	* AG	280	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	30	17	1.8
2. Recpt 2	*	15	-12	1.8
3. Recpt 3	*	-15	-30	1.8
4. Recpt 4	*	30	-12	1.8
5. Recpt 5	*	30	9	.5
6. Recpt 6	*	-3	-23	.5
7. Recpt 7	*	15	6	.5
8. Recpt 8	*	3	-6	.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Mt Gate Rd / I-5 Northbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK A	B
1. Recpt 1	*	236.	*	.4	*	.3	.0

2. Recpt 2	*	273.	*	.2	* .1	.1
3. Recpt 3	*	40.	*	.3	* .2	.0
4. Recpt 4	*	281.	*	.2	* .0	.1
5. Recpt 5	*	242.	*	.3	* .2	.1
6. Recpt 6	*	19.	*	.3	* .2	.0
7. Recpt 7	*	237.	*	.3	* .3	.0
8. Recpt 8	*	239.	*	.3	* .2	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR 273 - Lake Blvd/SR 299   2030
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S              Z0= 100. CM            ALT=   950. (M)
       BRG= WORST CASE             VD=   .0 CM/S
      CLAS=     7 (G)              VS=   .0 CM/S
      MIXH= 1000. M                AMB=   .0 PPM
     SIGTH=    5. DEGREES         TEMP=  8.0 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)    *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
---------------*-------------------------*-----------------------------
A. SR 273        *   150     3  -150    -3 *  AG   2722   5.0     .0  25.8
B. Lake Blvd     *    -3  -120    -3   105 *  AG   2697   5.0     .0  25.8


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
  RECEPTOR   *    X      Y      Z
------------*--------------------
 1. Recpt 1  *    -23      8   1.8
 2. Recpt 2  *    -23     30   1.8
 3. Recpt 3  *    -23     51   1.8
 4. Recpt 4  *    -23    -45   1.8
 5. Recpt 5  *    -23     90   1.8
 6. Recpt 6  *     12     90   1.8
 7. Recpt 7  *     15    -45   1.8
 8. Recpt 8  *     12     51   1.8
 9. Recpt 9  *     12     30   1.8
10. Recpt 10 *    -30    -75   1.8
11. Recpt 11 *    -54      8    .5
12. Recpt 12 *    -71      8    .5
13. Recpt 13 *    -71    -12    .5
14. Recpt 14 *    -45    -12    .5
15. Recpt 15 *      8    -75    .5
16. Recpt 16 *      3    -12    .5
17. Recpt 17 *     21    -12    .5
18. Recpt 18 *     45    -12    .5
19. Recpt 19 *     30      8    .5
20. Recpt 20 *     53      8    .5
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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2
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JOB: SR 273 - Lake Blvd/SR 299 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B
1. Recpt 1	93.	2.2	1.7	.5
2. Recpt 2	165.	1.3	.4	.9
3. Recpt 3	167.	1.2	.3	.9
4. Recpt 4	15.	1.2	.3	.9
5. Recpt 5	169.	1.2	.2	1.0
6. Recpt 6	189.	1.6	.2	1.4
7. Recpt 7	346.	1.3	.3	1.0
8. Recpt 8	190.	1.6	.3	1.3
9. Recpt 9	191.	1.7	.4	1.3
10. Recpt 10	15.	.9	.3	.7
11. Recpt 11	93.	2.2	1.8	.3
12. Recpt 12	93.	2.2	1.9	.3
13. Recpt 13	84.	2.2	1.9	.3
14. Recpt 14	84.	2.1	1.8	.3
15. Recpt 15	355.	2.0	.3	1.7
16. Recpt 16	355.	2.2	.8	1.5
17. Recpt 17	276.	2.2	1.7	.5
18. Recpt 18	276.	2.0	1.7	.3
19. Recpt 19	266.	2.2	1.8	.4
20. Recpt 20	266.	2.1	1.9	.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Cypress Ave - I-5 Southbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB Ramps	*	-15	2	15	2	* AG	1207	5.0	.0	25.8
B. Cypress	*	-2	15	-2	-15	* AG	3964	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-8	15	1.8
2. Recpt 2	*	-8	9	1.8
3. Recpt 3	*	-8	6	1.8
4. Recpt 4	*	-8	5	.5
5. Recpt 5	*	-8	-9	.5
6. Recpt 6	*	-8	-6	.5
7. Recpt 7	*	-8	-3	.5
8. Recpt 8	*	-5	0	.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Cypress Ave - I-5 Southbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1. Recpt 1	*	150.	*	1.4	*	.3	1.1

2. Recpt 2	*	140. *	1.3 *	.3	1.0
3. Recpt 3	*	121. *	1.2 *	.3	.9
4. Recpt 4	*	119. *	1.2 *	.3	.9
5. Recpt 5	*	40. *	1.4 *	.3	1.1
6. Recpt 6	*	59. *	1.3 *	.3	.9
7. Recpt 7	*	50. *	1.2 *	.3	.9
8. Recpt 8	*	51. *	1.0 *	.3	.8

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Cypress Ave - I-5 Northhbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB Ramps	*	-15	2	15	2	* AG	781	5.0	.0	25.8
B. Cypress	*	-2	15	-2	-15	* AG	4031	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	8	15	1.8
2. Recpt 2	*	8	9	1.8
3. Recpt 3	*	8	6	1.8
4. Recpt 4	*	8	5	.5
5. Recpt 5	*	8	-9	.5
6. Recpt 6	*	8	-6	.5
7. Recpt 7	*	8	-3	.5
8. Recpt 8	*	5	0	.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Cypress Ave - I-5 Northhbound Ramps 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	* PRED CONC (PPM)	* CONC/LINK A	B
1. Recpt 1	*	214.	* 1.4	* .2	1.2

2. Recpt 2	*	226. *	1.4 *	.2	1.2
3. Recpt 3	*	230. *	1.2 *	.2	1.0
4. Recpt 4	*	235. *	1.3 *	.2	1.1
5. Recpt 5	*	314. *	1.5 *	.2	1.3
6. Recpt 6	*	303. *	1.3 *	.2	1.1
7. Recpt 7	*	307. *	1.3 *	.2	1.1
8. Recpt 8	*	306. *	1.1 *	.2	.9

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 151 - Shasta Street 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR 151	*	-15	2	15	2	* AG	1821	5.0	.0	25.8
B. Shasta St	*	-2	15	-2	-15	* AG	242	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-8	3	1.8
2. Recpt 2	*	-8	-3	1.8
3. Recpt 3	*	0	3	1.8
4. Recpt 4	*	8	5	.5
5. Recpt 5	*	2	-6	.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1. Recpt 1	*	124.	*	.4	*	.4	.0
2. Recpt 2	*	51.	*	.5	*	.4	.0
3. Recpt 3	*	222.	*	.4	*	.3	.0
4. Recpt 4	*	233.	*	.5	*	.4	.0
5. Recpt 5	*	325.	*	.5	*	.4	.0

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: SR 151 - I-5 Southbound Ramps
              RUN: Hour 1           (WORST CASE ANGLE)
       POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR 151	*	-30	2	11	2	* AG	182	5.0	.0	25.8
B. I-5 SB Ramps	*	2	-30	2	2	* AG	2391	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-3	3	1.8
2. Recpt 2	*	-2	-2	1.8
3. Recpt 3	*	-6	-2	1.8
4. Recpt 4	*	-9	-2	.5
5. Recpt 5	*	-9	3	.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1. Recpt 1	*	154.	*	.7	*	.0	.6
2. Recpt 2	*	149.	*	.6	*	.0	.6
3. Recpt 3	*	146.	*	.7	*	.0	.7
4. Recpt 4	*	141.	*	.8	*	.0	.8
5. Recpt 5	*	145.	*	.8	*	.0	.7

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 NB, South of Cypress 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5	*	0	120	0	-120	* AG	5018	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	BRG (DEG)	*	PRED CONC (PPM)
1. Recpt 1	*	15	120	1.8	*	188.	*	2.4
2. Recpt 2	*	15	90	1.8	*	189.	*	2.4
3. Recpt 3	*	15	60	1.8	*	190.	*	2.3
4. Recpt 4	*	15	30	1.8	*	191.	*	2.2
5. Recpt 5	*	15	15	1.8	*	192.	*	2.2
6. Recpt 6	*	15	-15	1.8	*	348.	*	2.2
7. Recpt 7	*	15	-30	1.8	*	349.	*	2.2
8. Recpt 8	*	15	-60	1.8	*	350.	*	2.3
9. Recpt 9	*	15	-90	1.8	*	351.	*	2.4
10. Recpt 10	*	15	-120	1.8	*	352.	*	2.4

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 SB, South of Cypress 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB	*	0	120	0	-120	* AG	4250	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	BRG (DEG)	*	PRED CONC (PPM)
1. Recpt 1	*	-15	120	1.8	*	172.	*	2.1
2. Recpt 2	*	-15	90	1.8	*	171.	*	2.1
3. Recpt 3	*	-15	60	1.8	*	170.	*	2.0
4. Recpt 4	*	-15	30	1.8	*	169.	*	1.9
5. Recpt 5	*	-15	15	1.8	*	168.	*	1.9
6. Recpt 6	*	-15	-15	1.8	*	12.	*	1.9
7. Recpt 7	*	-15	-30	1.8	*	11.	*	1.9
8. Recpt 8	*	-15	-60	1.8	*	10.	*	2.0
9. Recpt 9	*	-15	-90	1.8	*	9.	*	2.1
10. Recpt 10	*	-15	-120	1.8	*	8.	*	2.1

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 NB, North of Cypress 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB	*	0	120	0	-120	* AG	5296	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	* BRG (DEG)	* PRED CONC (PPM)
1. Recpt 1	*	15	120	1.8	* 188.	* 2.5
2. Recpt 2	*	15	90	1.8	* 189.	* 2.5
3. Recpt 3	*	15	60	1.8	* 190.	* 2.4
4. Recpt 4	*	15	30	1.8	* 191.	* 2.3
5. Recpt 5	*	15	15	1.8	* 192.	* 2.3
6. Recpt 6	*	15	-15	1.8	* 348.	* 2.3
7. Recpt 7	*	15	-30	1.8	* 349.	* 2.3
8. Recpt 8	*	15	-60	1.8	* 350.	* 2.4
9. Recpt 9	*	15	-90	1.8	* 351.	* 2.5
10. Recpt 10	*	15	-120	1.8	* 352.	* 2.5

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 NB, North of SR 44 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB	*	0	120	0	-120	* AG	5296	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	BRG (DEG)	*	PRED CONC (PPM)
1. Recpt 1	*	15	120	1.8	*	188.	*	2.5
2. Recpt 2	*	15	90	1.8	*	189.	*	2.5
3. Recpt 3	*	15	60	1.8	*	190.	*	2.4
4. Recpt 4	*	15	30	1.8	*	191.	*	2.3
5. Recpt 5	*	15	15	1.8	*	192.	*	2.3
6. Recpt 6	*	15	-15	1.8	*	348.	*	2.3
7. Recpt 7	*	15	-30	1.8	*	349.	*	2.3
8. Recpt 8	*	15	-60	1.8	*	350.	*	2.4
9. Recpt 9	*	15	-90	1.8	*	351.	*	2.5
10. Recpt 10	*	15	-120	1.8	*	352.	*	2.5

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          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: I-5 SB, North of SR 44  2030
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide
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I. SITE VARIABLES

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        U=    .5 M/S              Z0= 100. CM            ALT=   950. (M)
      BRG= WORST CASE             VD=   .0 CM/S
     CLAS=     7 (G)              VS=   .0 CM/S
     MIXH= 1000. M                AMB=   .0 PPM
    SIGTH=    5. DEGREES         TEMP=  8.0 DEGREE (C)
```

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB	*	0	120	0	-120	* AG	4569	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	* BRG (DEG)	* PRED CONC (PPM)
1. Recpt 1	*	-15	120	1.8	* 172.	* 2.2
2. Recpt 2	*	-15	90	1.8	* 171.	* 2.2
3. Recpt 3	*	-15	60	1.8	* 170.	* 2.1
4. Recpt 4	*	-15	30	1.8	* 169.	* 2.0
5. Recpt 5	*	-15	15	1.8	* 168.	* 2.0
6. Recpt 6	*	-15	-15	1.8	* 12.	* 2.0
7. Recpt 7	*	-15	-30	1.8	* 11.	* 2.0
8. Recpt 8	*	-15	-60	1.8	* 10.	* 2.1
9. Recpt 9	*	-15	-90	1.8	* 9.	* 2.2
10. Recpt 10	*	-15	-120	1.8	* 8.	* 2.2

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 NB, North of SR 299 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 NB	*	0	120	0	-120	* AG	4758	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	BRG (DEG)	*	PRED CONC (PPM)
1. Recpt 1	*	15	120	1.8	*	188.	*	2.3
2. Recpt 2	*	15	90	1.8	*	189.	*	2.3
3. Recpt 3	*	15	60	1.8	*	190.	*	2.2
4. Recpt 4	*	15	30	1.8	*	191.	*	2.1
5. Recpt 5	*	15	15	1.8	*	192.	*	2.1
6. Recpt 6	*	15	-15	1.8	*	348.	*	2.1
7. Recpt 7	*	15	-30	1.8	*	349.	*	2.1
8. Recpt 8	*	15	-60	1.8	*	350.	*	2.2
9. Recpt 9	*	15	-90	1.8	*	351.	*	2.3
10. Recpt 10	*	15	-120	1.8	*	352.	*	2.3

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 SB, North of SR 299 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB	*	0	120	0	-120	* AG	4758	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	* BRG (DEG)	* PRED CONC (PPM)
1. Recpt 1	*	-15	120	1.8	* 172.	* 2.3
2. Recpt 2	*	-15	90	1.8	* 171.	* 2.3
3. Recpt 3	*	-15	60	1.8	* 170.	* 2.2
4. Recpt 4	*	-15	30	1.8	* 169.	* 2.1
5. Recpt 5	*	-15	15	1.8	* 168.	* 2.1
6. Recpt 6	*	-15	-15	1.8	* 12.	* 2.1
7. Recpt 7	*	-15	-30	1.8	* 11.	* 2.1
8. Recpt 8	*	-15	-60	1.8	* 10.	* 2.2
9. Recpt 9	*	-15	-90	1.8	* 9.	* 2.3
10. Recpt 10	*	-15	-120	1.8	* 8.	* 2.3

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 NB, North of Twin View Blvd 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB	*	0	120	0	-120	* AG	4952	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	* BRG (DEG)	* PRED CONC (PPM)
1. Recpt 1	*	15	120	1.8	* 188.	* 2.4
2. Recpt 2	*	15	90	1.8	* 189.	* 2.3
3. Recpt 3	*	15	60	1.8	* 190.	* 2.3
4. Recpt 4	*	15	30	1.8	* 191.	* 2.2
5. Recpt 5	*	15	15	1.8	* 192.	* 2.1
6. Recpt 6	*	15	-15	1.8	* 348.	* 2.1
7. Recpt 7	*	15	-30	1.8	* 349.	* 2.2
8. Recpt 8	*	15	-60	1.8	* 350.	* 2.3
9. Recpt 9	*	15	-90	1.8	* 351.	* 2.3
10. Recpt 10	*	15	-120	1.8	* 352.	* 2.4

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 SB, North of Twin View Blvd 2030
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. I-5 SB	*	0	120	0	-120	* AG	4952	5.0	.0	25.8

III. RECEPTOR LOCATIONS AND MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	BRG (DEG)	*	PRED CONC (PPM)
1. Recpt 1	*	-15	120	1.8	*	172.	*	2.4
2. Recpt 2	*	-15	90	1.8	*	171.	*	2.3
3. Recpt 3	*	-15	60	1.8	*	170.	*	2.3
4. Recpt 4	*	-15	30	1.8	*	169.	*	2.2
5. Recpt 5	*	-15	15	1.8	*	168.	*	2.1
6. Recpt 6	*	-15	-15	1.8	*	12.	*	2.1
7. Recpt 7	*	-15	-30	1.8	*	11.	*	2.2
8. Recpt 8	*	-15	-60	1.8	*	10.	*	2.3
9. Recpt 9	*	-15	-90	1.8	*	9.	*	2.3
10. Recpt 10	*	-15	-120	1.8	*	8.	*	2.4

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: SR 151 - I-5 Southbound Ramps
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	WORST CASE	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	100. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SR 151	*	-30	2	11	2	* AG	0	5.0	.0	25.8
B. I-5 SB Ramps	*	2	-30	2	2	* AG	942	5.0	.0	25.8

III. RECEPTOR LOCATIONS

RECEPTOR	*	COORDINATES (M) X	Y	Z
1. Recpt 1	*	-2	-2	1.8
2. Recpt 2	*	-2	-12	1.8
3. Recpt 3	*	-2	-18	1.8
4. Recpt 4	*	-2	-24	.5
5. Recpt 5	*	-2	-30	.5

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	*	BRG (DEG)	*	PRED CONC (PPM)	*	CONC/LINK (PPM) A	B
1. Recpt 1	*	153.	*	.2	*	.0	.2
2. Recpt 2	*	137.	*	.2	*	.0	.2
3. Recpt 3	*	39.	*	.2	*	.0	.2
4. Recpt 4	*	33.	*	.2	*	.0	.2
5. Recpt 5	*	23.	*	.3	*	.0	.3

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 & Cypress Ave - NB On-Ramp
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB On-Ramp	-10	400	10	-400	AG	1062	5.0	.0	86.0

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M) X	Y	Z	PRED CONC (PPM)
1. Recpt 1	40	400	1.8	.0
2. Recpt 2	40	300	1.8	.0
3. Recpt 3	40	200	1.8	.0
4. Recpt 4	40	100	1.8	.0
5. Recpt 5	40	0	1.8	.2
6. Recpt 6	40	-100	1.8	.2
7. Recpt 7	40	-200	1.8	.2
8. Recpt 8	40	-300	1.8	.3
9. Recpt 9	40	-400	1.8	.3

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 & SR 44 - NB Loop On-Ramp
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB On-Ramp	-10	400	10	-400	AG	1062	5.0	.0	86.0

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	COORDINATES (M) X	Y	Z	PRED CONC (PPM)
1. Recpt 1	40	400	1.8	.0
2. Recpt 2	40	300	1.8	.0
3. Recpt 3	40	200	1.8	.0
4. Recpt 4	40	100	1.8	.0
5. Recpt 5	40	0	1.8	.2
6. Recpt 6	40	-100	1.8	.2
7. Recpt 7	40	-200	1.8	.2
8. Recpt 8	40	-300	1.8	.3
9. Recpt 9	40	-400	1.8	.3

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 & SR 44 - SB Direct Off-Ramp 2030
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SB Off Ramp	*	-10	400	10	-400	* AG	1062	5.0	.0	86.0

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	PRED CONC (PPM)
1. Recpt 1	*	-50	400	1.8	*	.0
2. Recpt 2	*	-50	300	1.8	*	.0
3. Recpt 3	*	-50	200	1.8	*	.0
4. Recpt 4	*	-50	100	1.8	*	.0
5. Recpt 5	*	-50	0	1.8	*	.0
6. Recpt 6	*	-50	-100	1.8	*	.0
7. Recpt 7	*	-50	-200	1.8	*	.0
8. Recpt 8	*	-50	-300	1.8	*	.0
9. Recpt 9	*	-50	-400	1.8	*	.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 & SR 44 - SB Loop Off-Ramp 2030
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. SB Off Ramp	*	-10	400	10	-400	* AG	737	5.0	.0	86.0

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	PRED CONC (PPM)
1. Recpt 1	*	-50	400	1.8	*	.0
2. Recpt 2	*	-50	300	1.8	*	.0
3. Recpt 3	*	-50	200	1.8	*	.0
4. Recpt 4	*	-50	100	1.8	*	.0
5. Recpt 5	*	-50	0	1.8	*	.0
6. Recpt 6	*	-50	-100	1.8	*	.0
7. Recpt 7	*	-50	-200	1.8	*	.0
8. Recpt 8	*	-50	-300	1.8	*	.0
9. Recpt 9	*	-50	-400	1.8	*	.0

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: I-5 & SR 273 - NB Off-Ramp 2030
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	.5 M/S	Z0=	100. CM	ALT=	950. (M)
BRG=	.0 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	5. DEGREES	TEMP=	8.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	* TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. NB on-ramp	*	-10	394	10	-394	* AG	737	5.0	.0	84.7

III. RECEPTOR LOCATIONS AND MODEL RESULTS

RECEPTOR	*	COORDINATES (M) X	Y	Z	*	PRED CONC (PPM)
1. Recpt 1	*	49	394	1.8	*	.0
2. Recpt 2	*	49	295	1.8	*	.0
3. Recpt 3	*	49	197	1.8	*	.0
4. Recpt 4	*	49	98	1.8	*	.0
5. Recpt 5	*	49	0	1.8	*	.0
6. Recpt 6	*	49	-98	1.8	*	.0
7. Recpt 7	*	49	-197	1.8	*	.0
8. Recpt 8	*	49	-295	1.8	*	.0
9. Recpt 9	*	49	-394	1.8	*	.1

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Appendix 4.5-1

NOISE IMPACT ANALYSIS

NOISE

IMPACT ANALYSIS

MOUNTAIN GATE AREA PLAN

CITY OF SHASTA LAKE, CA

PREPARED FOR:

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April 29, 2007

INTRODUCTION

This section of the EIR includes a description of ambient noise conditions in the project vicinity, a summary of applicable regulations, and an analysis of potential noise impacts associated with the proposed project. Mitigation measures are recommended, as necessary, to reduce significant noise impacts.

ENVIRONMENTAL SETTING

CONCEPTS AND TERMINOLOGY

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, or unexpected. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave because of a disturbance or vibration.

Amplitude

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic scale. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish a 3 dB change in amplitude as the minimum audible difference perceptible to the average person (US EPA 1971).

Frequency

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (Hz). One Hz equals one cycle per second. The human ear is not equally sensitive to sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all, and the ear is more sensitive to sound in the higher portion of this range than in the lower. To approximate this sensitivity, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 10 dBA to about 140 dBA (US EPA 1971).

Characteristics of Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates at a rate between 3.0 to 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Mobile transportation sources, such as highways, hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance from the source. Noise generated by stationary sources typically attenuates at a rate of approximately 6.0 to 7.5 dBA per doubling of distance from the source (US EPA 1971).

Sound levels can be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise, but are less effective than solid barriers.

Noise Descriptors

The selection of a proper noise descriptor for a specific source is dependent upon the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below (Lipscomb and Taylor 1978).

- Maximum Noise Level (L_{max}): The maximum instantaneous noise level during a specific period of time.

- Minimum Noise Level (L_{min}): The minimum instantaneous noise level during a specific period of time.

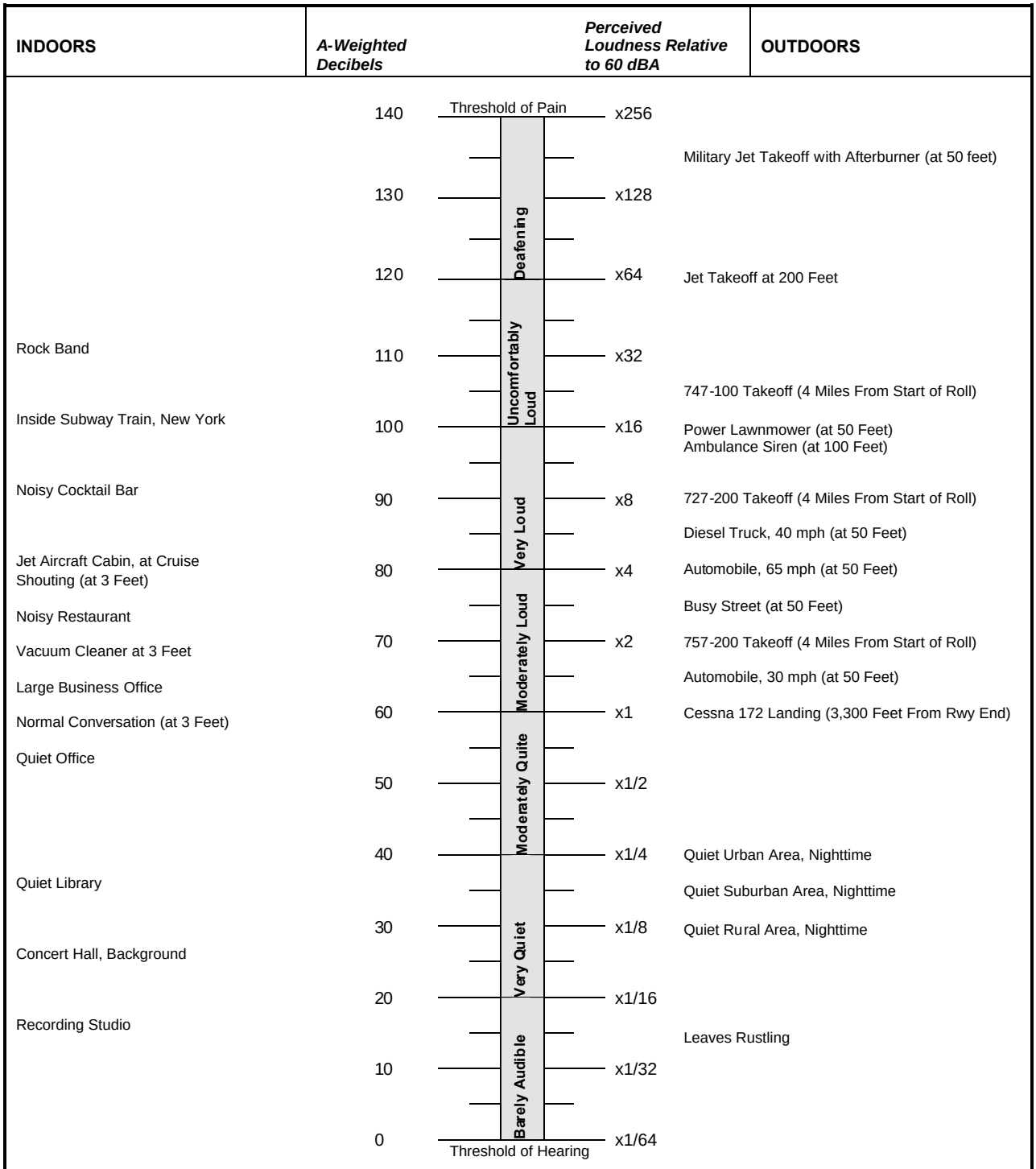
- Energy Equivalent Noise Level (L_{eq}): The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average energy value (in dBA) is calculated.

- Day-Night Noise Level (L_{dn}): The 24-hour L_{eq} with a 10 dBA "penalty" for noise events that occur during the noise-sensitive hours between 10:00 p.m. and 7:00 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours to account for increases sensitivity to noise during these hours.

- Community Noise Equivalent Level (CNEL): The CNEL is similar to the L_{dn} described above, but with an additional 5 dBA "penalty" added to noise events that occur between the hours of 7:00 p.m. to 10:00 p.m. The calculated CNEL is typically approximately 0.5 dBA higher than the calculated L_{dn}.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels. Typical community noise levels are depicted in **Exhibit 1**.



Sources: California Department of Transportation, January 2002, *California Airport Land Use Planning Handbook*; M. David Egan, McGraw Hill, 1972, *Concepts in Architectural Acoustics*; and U.S. Department of Housing and Urban Development, Office of Community Planning and Development, *The Noise Guidebook*.

EXHIBIT 1: TYPICAL COMMUNITY NOISE LEVELS

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment to which one has adapted: the so-called "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged. Regarding increases in A-weighted noise levels, knowledge of the following relationships will be helpful in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.

- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.

- A change in level of at least 5 dB is required before any noticeable change in community response would be expected. An increase of 5 dB is typically considered substantial.

- A 10-dB change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

When evaluating noise impacts, based on the above relationships, it is generally recognized that an increase of greater than 3 dBA is considered potentially significant. However, increases in ambient noise levels need to also take into account the existing noise environment. Consequently, increases in cumulative noise exposure (in CNEL/Ldn) of 5 dBA are generally considered significant in areas where the ambient noise environment is less than 60 dBA. In areas where the ambient noise environment is between 60 and 65 dBA, increases of 3.0 dBA, or greater, would be considered significant. In areas where the ambient noise environment exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant. These thresholds were initially recommended by the Federal Interagency Committee on Noise (FICON) in 1972, based on noise levels at which people typically become increasingly annoyed. These recommendations have since been recognized by various local, state and federal agencies and are the criteria typically used for the analysis of increases in ambient noise levels (FAA, 2000).

EXISTING NOISE-SENSITIVE LAND USES

Noise-sensitive land uses are generally considered to include those uses which would result in noise exposure that could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings, including senior housing, are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as parks, historic sites, cemeteries, and recreation areas are also considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places, where low interior noise levels are essential, are also considered noise-sensitive land uses. Existing noise-sensitive receptors in the vicinity of the project site consist primarily of residential land uses located along the southern boundary of the project site, within the City of Shasta Lake.

AMBIENT NOISE SURVEY

To document the existing noise environment, ambient noise surveys were conducted by AMBIENT Air Quality & Noise Consulting at various locations in the project area. Short-term (10-minute) noise level measurements were conducted using a Larson Davis model 820 sound-level meter placed at a height of approximately 4.5 feet above the ground surface. Based on the measurements conducted, average daytime noise levels (in dBA L_{eq}) in the project area generally range from the lower 40s to upper 60s, dependent primarily on distance from nearby roadways. Measurement locations and corresponding maximum measured daytime noise levels are summarized in **Table 1** and depicted in **Exhibit 2.**

Table 1
Ambient Daytime Noise Levels

	Location	Time	Primary Noise Sources Noted	Measured Noise Level (dBA)		
				Leq	Lmin	Lmax
1	Wonderland Boulevard, 100 feet from Interstate 5	8:15 am-8:25 am	Vehicle traffic on I-5	67.2	52.9	72.3
2	Buena Vista Street and Grand Avenue	9:50am-9:00am	Vehicle traffic on area roadways, children's voices	59.4	44.8	55.3
3	Koch Street and Eugene Street	9:20am-9:30am	Vehicle traffic on area roadways	44.1	39.1	48.3

Noise measurement conducted using a Larson Davis model 820 Type I sound-level meter on January 3, 2007. Measurement locations correspond to those depicted in Exhibit 2.

Ambient noise levels in the plan area are influenced primarily by vehicle traffic on area roadways, primarily Interstate 5 (I-5), as well as trains traveling along the Union Pacific Railroad (UPRR). Noise levels associated with these sources are discussed in more detail, as follows:

Roadway Traffic Noise

Table 2 summarizes the existing traffic noise levels (in dBA CNEL) at 50 feet from the near travel lane centerline for existing traffic conditions. Existing roadway traffic noise levels were calculated for these roadway segments using the Federal Highway Administration (FHWA) traffic noise prediction model. Traffic data used in the analysis were obtained from the traffic analysis prepared for this project. Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Based on the modeling conducted, traffic noise levels along area roadways generally range from the low 50's to the low 60's at 50 feet from the centerline of the near travel lane. Ambient noise levels measured at approximately 100 feet from I-5 measured 67.2 dBA L_{eq}. For major roadways such as I-5, the measured peak-hour noise level is typically representative of average-daily noise levels.

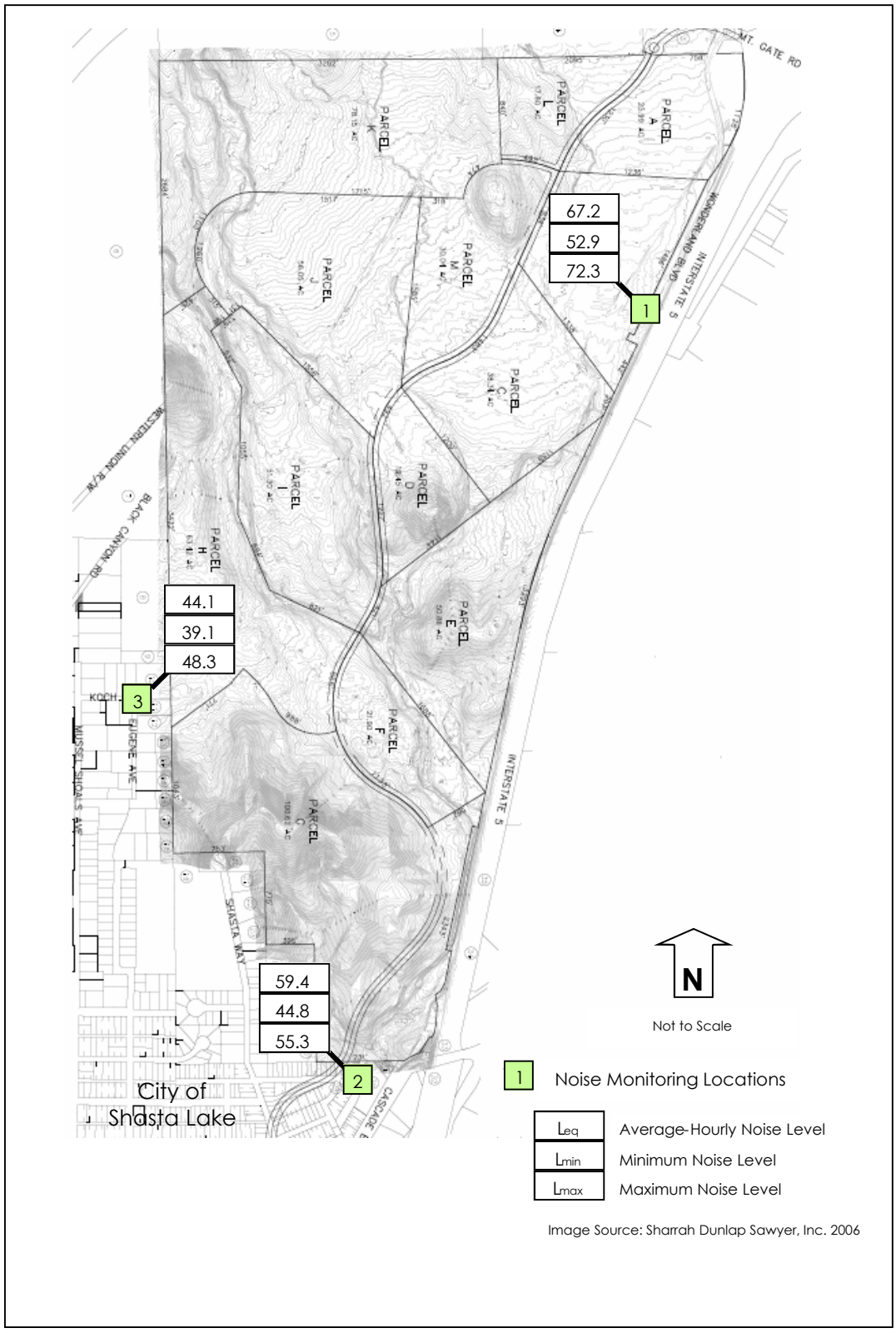


EXHIBIT 2: AMBIENT NOISE ENVIRONMENT

Table 2 Summary of Existing Traffic Noise Levels	
Roadway Segment and Location	**L_{dn}/CNEL (dBA) 50 ft from Near Travel Lane Centerline**
Shasta Dam Boulevard, North Boulevard. to Ashby Road	62.5
Ashby Road, Fort Peck Street to Flower Street	60.2
Montana Avenue, Main Street to Front Street	55.6
Red Bluff Street, Washington Avenue to Grand River Avenue	50.1
Main Street, Washington Avenue to Grand River Avenue	51.3
Mussel Shoals Avenue, Front Street to Shasta Dam Boulevard	56.7
Grand Coulee Boulevard, Fort Peck Street to Shasta Dam Boulevard	56.9
Pine Grove Avenue, Lake Boulevard to Ashby Road	61.7
Cascade Boulevard, Pine Grove Avenue to Deer Creek Avenue	61.3
Pine Grove Avenue, Smith Avenue to Cascade Boulevard	61.6
Traffic noise levels were predicted using the FHWA traffic noise prediction model based on data obtained from the traffic analysis prepared for this project. Predicted noise levels do not take into account shielding provided by intervening structures or noise barriers.	

Union Pacific Railroad

The Union Pacific Railroad (UPRR) extends along the western boundary of the plan area in a general north-south direction. Based on conversations with UP officials, an average of approximately 25 freight trains travel along this track on a daily basis. The number of freight trains traveling along this segment can vary from day to day, depending on demand, and there are currently no hourly limitations during which freight train travel is limited. The UPRR does not anticipated substantial changes in freight train traffic in future years. This track is also used by Amtrak for its Coast Starlight train run. AMTRAC trains currently consist of two trains, which typically travel between the early morning hours of 2:15 and 3:15 a.m. (UPRR 2007, AMTRAK 2007).

The Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Guidelines* (FTA 2006) was used for the calculation of wayside noise levels generated by the trains traveling along the UPRR corridor. Wayside noise levels were calculated based, in part, on average train speeds, train length, and the number of trains traveling during the daytime and nighttime hours. For modeling purposes, freight train travel along the UPRR corridor was assumed to total 25 trains/day equally dispersed throughout the daytime and nighttime hours. AMTRAK trains running during the early morning hours were also included in the calculation. Predicted wayside noise levels at 50 feet from the track centerline and the projected distance to the 60, 65, and 70 dBA CNEL noise contours for the UPRR are summarized in **Table 3**. Based on the modeling conducted, the projected wayside noise levels along the UPRR corridor are estimated at approximately 78 dBA CNEL at 50 feet from the track centerline. The projected 60 dBA CNEL noise contour for the UPRR corridor would extend to a distance of approximately 855 feet from the track centerline. The projected 65 and 70 dBA CNEL noise contours for the UPRR corridor

would extend to distances of approximately 400 and 185 feet from the track centerline, respectively.

Table 3
Existing UPRR Noise Levels

Railway	Wayside Noise Levels (dBA CNEL) at 50 Feet from Track Centerline	Distance from Track Centerline to Predicted Noise Contour (dBA CNEL)		
		60	65	70
Union Pacific Railroad	78	855	400	185

Wayside noise levels take into account freight and passenger trains.

REGULATORY SETTING

STATE OF CALIFORNIA

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The *State of California General Plan Guidelines* (State of California 1998), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. **Table 4** summarizes the acceptable and unacceptable community noise exposure limits for various land use categories, as currently defined by the State of California.

Title 24 of the California Code of Regulations establishes standards governing interior noise levels that apply to all new multifamily residential units in California. These standards require that acoustical studies be performed prior to construction at building locations where the existing CNEL exceeds 60 dBA. Such acoustical studies are required to establish mitigation measures that will limit interior noise levels to 45 dBA CNEL.

City of Shasta Lake

The City of Shasta Lake General Plan contains goals and policies to protect citizens from exposure to excessive noise. The General Plan establishes standards for various land use categories. The standards provide the basis for decisions on determining the compatibility of proposed new land uses and appropriate noise mitigation requirements. The City's noise standards are summarized in **Table 5**. General Plan objectives and policies applicable to the proposed project are summarized in **Table 6** (City of Shasta Lake 1999).

Table 4
State of California
Land Use Compatibility for Community Noise Environments

Land Use	Noise Levels (dBA CNEL/ L_{dn})			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential Uses – Low Density Single Family, Duplex, Mobile Homes	< 60	55 to 70	70 to 75	> 75
Residential – Multi-Family	< 65	60 to 70	70 to 75	> 75
Transient Lodging, Hotels, Motels	< 65	60 to 70	70 to 80	> 80
Schools, Libraries, Churches, Hospitals, Nursing Homes	< 70	60 to 70	70 to 80	> 80
Auditoriums, Concert Halls, Amphitheaters		< 70		>65
Sports Arena, Outdoor Spectator Sports		< 75		>70
Playgrounds, Neighborhood Parks	< 70		67.5 to 75	> 72.5
Golf Courses, Riding Stables, Water Recreation, Cemeteries	< 75		70 to 80	> 80
Office Buildings, Business, Commercial, Professional	< 70	67.5 to 77.5	> 75	
Industrial, Manufacturing, Utilities, Agricultural	< 75	70 to 80	> 75	

Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development should generally not be undertaken.

Source: State of California 2003

Table 5
City of Shasta Lake
Noise-Sensitivity Standards

New Land Use	Outdoor Activity Area (dBA L_{dn})	Interior Activity Area (dBA Ldn/Peak Hour L_{eq})[1]	Notes
All Residential	60-65	45	*2,3,4*
Transient Lodging	65	45	*5*
Hospitals & Nursing Homes	60	45	*6*
Theaters & Auditoriums	-	35	
Churches, Meeting Halls, Schools, Libraries, etc.	60	40	
Office Buildings	65	45	*7*
Commercial Buildings	65	50	*7*
Playgrounds, Parks, etc.	70	-	
Industrial Facilities	65	50	*7*

Notes:

1. *For traffic noise within the City of Shasta Lake, Ldn and peak-hour Leq values are estimated to be approximately similar. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with window and doors in the closed positions.*
2. *Outdoor activity areas for single-family residential uses are defined as backyards. For large parcels or residences with no clearly defined outdoor activity area, the standard shall be applicable within a 100 foot radius of the residence.*
3. *For multi-family residential uses, the exterior noise level standard shall be applied at the common outdoor recreation area, such as at pools, play areas or tennis courts. Where such areas are not provided, the standards shall be applied at individual patios and balconies of the development.*
4. *Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.*
5. *Outdoor activity areas of transient lodging facilities include swimming pool and picnic areas.*
6. *Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.*
7. *Only the exterior spaces of these uses designated for employee or customer relaxation have any degree of sensitivity to noise.*

Source: City of Shasta Lake General Plan, Noise Element Table N-1.

TABLE 6
City of Shasta Lake General Plan Noise Objectives & Policies

Objectives and Policies	Consistent with General Plan?	Analysis
Objectives:		Based on the analysis conducted, noise-sensitive land uses may be exposed to increases in ambient noise levels that could exceed the City's noise standards. Mitigation has been incorporated to require preparation of acoustical analyses prior to approval of onsite development to ensure that appropriate and adequate noise mitigation will be incorporated, as development occurs, to protect nearby noise-sensitive land uses and to ensure that proposed land uses are not developed within incompatible noise environments.
N-1 Protect noise sensitive areas of the City by regulation of new noise-generating development.	Yes, with Mitigation Incorporated.	
N-2 Protect noise sensitive new development from existing and future noise generators by regulations encouraging each to locate within compatible noise environments.	Yes, with Mitigation Incorporated.	
N-3 Protect established noise-generating development from noise sensitive new development.	Yes, with Mitigation Incorporated.	
Policies		
N-a New development shall use appropriate site planning and building design to reduce undesirable noise impacts. The noise sensitivity of land uses as established in *Table N-1* (**Table 1** of this report) shall be used in the location of new development, preparation of general plan amendments and specific plans. The noise exposure level shall be established by reference to the *Noise Contour Map* (on file with the City) or project-specific measurements or calculations. The interpretive guidelines in *Figure N-1* shall not be applied mechanically, but with the degree of flexibility required in each case to achieve a sound and feasible land use decision. However, in no case shall a residential land use be located where the existing noise environment, combined with the measured or calculated noise reduction of the type of structure under consideration, makes it impossible to maintain an interior noise environment at or below 45dBA CNEL.	Yes, with Mitigation Incorporated.	
N-b. The planning and design of improvements in the circulation systems shall consider their noise impacts on adjacent land uses and shall include measures to mitigate significant noise impacts.	Yes, with Mitigation Incorporated.	

Source: City of Shasta Lake 1999

PROJECT IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

Following Appendix G of the State CEQA Guidelines, noise impacts are considered to be significant if implementation of the project considered would result in any of the following:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies.

2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

3. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

4. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

5. For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?

6. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Based on the standards of significance in Appendix G of the CEQA Guidelines, the following criteria were used to determine whether implementation of the proposed project would result in a significant noise impact:

Short-term Construction Noise Impacts: Short-term construction noise impacts would be considered significant if construction-generated noise would result in a substantial increase in ambient noise levels at noise-sensitive receptors during the more noise-sensitive early morning, evening and nighttime hours (i.e., 7:00 p.m. to 7:00 a.m.)

Long-term Traffic Noise Impacts: Long-term traffic noise impacts would be considered significant if the proposed project would contribute to a substantial increase in predicted traffic noise levels that would exceed the City's noise standards for land use compatibility at nearby noise-sensitive land uses (**Table 5**). For purposes of this analysis and in accordance with generally recognized noise standards, increases in predicted traffic noise levels of 5 dBA, or greater, would be considered significant in areas where the ambient noise environment is less than 60 dBA. In areas where the ambient noise environment is between 60 and 65 dBA, increases of 3.0 dBA, or greater, would be considered significant. In areas where the ambient noise environment equals or exceeds 65 dBA, a predicted increase of 1.5 dBA, or greater, would be considered significant. For areas equal to or greater than 70 dBA, increases of greater than 1 dBA would be considered significant. These thresholds were initially recommended by the Federal Interagency Committee on Noise (FICON) in 1972, based on noise levels at which people typically become increasingly annoyed. These recommendations have since been recognized by various local, state and federal agencies and are typically used for the analysis of transportation noise impacts (FAA, 2000).

Long-term Stationary-Source Noise Impacts: Long-term stationary-source noise impacts would be considered significant if predicted noise levels at nearby existing or proposed noise-sensitive land uses would exceed City's noise standards (**Table 5**).

Exposure of Sensitive Receptors or Generation of Excessive Vibration Levels: Short- and long-term vibration impacts would be significant if construction or operation of the proposed project

would result in the exposure of sensitive receptors to or generate excessive vibration levels that would exceed applicable standards.

PROJECT IMPACTS AND MITIGATION MEASURES

Impact 1	**Exposure to Short-term Construction Noise**. Short-term construction-generated noise levels could result in a substantial increase in ambient noise levels at nearby noise-sensitive land uses, including proposed residential uses that are constructed and inhabited before other portions of the project are complete. This would be a **significant** impact.

Construction noise in any one particular area would be temporary and would include noise from activities such as excavations, site preparation, truck hauling of material, pouring of concrete, and use of power hand tools. Construction noise typically occurs intermittently and varies depending on the nature of the construction activities being performed. Noise generated by construction equipment, including excavation equipment, material handlers, and portable generators, can reach high levels for brief periods.

When noise levels generated by construction operations are being evaluated, activities occurring during the more noise-sensitive evening and nighttime hours are of increased concern. Because exterior ambient noise levels typically decrease during the late evening and nighttime hours as community activities (e.g., industrial activities, vehicle traffic) decrease, construction activities performed during these more noise-sensitive periods of the day can result in increased annoyance and potential sleep disruption for occupants of nearby residential dwellings.

The United States Environmental Protection Agency (US EPA) has found that the average noise levels associated with construction activities typically range from approximately 76 dBA to 84 dBA L_{eq}, with intermittent individual equipment noise levels ranging from approximately 75 dBA to more than 88 dBA for brief periods. **Table 7** lists typical uncontrolled noise levels generated by individual pieces of construction equipment at a distance of 50 feet.

Noise from localized point sources (such as construction sites) typically decreases by approximately 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate and assuming no noise shielding from either natural or human-made features (e.g., trees, buildings, fences), outdoor receptors within approximately 1,600 feet of construction sites could experience maximum instantaneous noise levels of greater than 60 dBA when onsite construction-related noise levels exceed approximately 90 dBA at the boundary of the construction site. During development of the proposed project, construction activities occurring during the more noise-sensitive late evening and nighttime hours (i.e., 7 p.m. to 7 a.m.) could result in increased levels of annoyance and potential sleep disruption for occupants of nearby noise-sensitive land uses. As a result, noise-generating construction activities would be considered to have a **significant** short-term impact.

Table 7 Typical Construction Equipment Noise Levels	
Equipment	**Typical Noise Level (dBA Lmax) 50 feet from Source**
Backhoe	80
Compactor	82
Dozer	85
Grader	85
Loader	85
Truck	88
Air Compressor	81
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane, Mobile	83
Generator	81
Impact Wrench	85
Jack Hammer	88
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Sources: Federal Transit Administration 2006	

Mitigation Measure

MM 1 The following measures shall be implemented:

- Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7 a.m. and 7 p.m., Monday through Saturday.

- Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- When not in use, motorized construction equipment shall not be left idling.

- Stationary equipment (e.g., power generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses or sufficiently shielded to reduce noise-related impacts.

  ***Timing/Implementation**: Implemented prior to approval of Tentative Map or Planning Director's Special Permit.*

  ***Enforcement/Monitoring**: City of Shasta Lake.*

With implementation of the above mitigation measure, construction activities would be limited to the daytime hours, excluding activities that would result in a safety concern. Implementation of the proposed mitigation measures, including use of mufflers and shielding of equipment, would reduce construction-generated noise levels by approximately 10 dBA (EPA 1971). With mitigation, this impact would be considered **less than significant**.

Impact 2	**Increases in Long-term Operational Traffic Noise**. Implementation of the proposed project would not result in substantial increases in near-term traffic noise levels along area roadways. This would be a ***less than significant*** impact**.**

Implementation of the proposed land uses would result in increased traffic volumes on some area roadways. The increase in traffic volumes resulting from implementation of the proposed project would, therefore, contribute to predicted increases in traffic noise levels. The FHWA roadway noise prediction model was used to predict traffic noise levels along affected roadways for existing traffic conditions, with and without implementation of the proposed project. Modeling was conducted for roadways anticipated to be primarily affected by the proposed project, based on predicted traffic volumes obtained from the traffic analysis prepared for this project. The project's contribution to traffic noise levels along area roadways was determined by comparing the predicted noise levels with and without project-generated traffic under existing conditions. Predicted traffic noise levels are summarized in **Table 8**.

As depicted in **Table 8**, implementation of the proposed project would result in predicted increases in traffic noise levels along primary affected roadways of less than 1 dBA. Because implementation of the proposed project would not result in a substantial increase in traffic noise levels, this impact would be considered ***less than significant***.

Table 8
Predicted Increases in Traffic Noise Levels
Near-Term Conditions (Year 2010)

Roadway Segment	CNEL (dBA) at 50 feet from Near-Travel-Lane Centerline			
	Without Project	With Project	Predicted Increase	Substantial?
Shasta Dam Boulevard, North Boulevard. to Ashby Road	62.67	62.69	0.02	No
Ashby Road, Fort Peck Street to Flower Street	60.51	60.65	0.14	No
Montana Avenue, Main Street to Front Street	55.69	56.01	0.32	No
Red Bluff Street, Washington Avenue to Grand River Avenue	50.21	50.73	0.52	No
Main Street, Washington Avenue to Grand River Avenue	51.52	52.05	0.53	No
Mussel Shoals Avenue, Front Street to Shasta Dam Boulevard	57.04	57.81	0.77	No
Grand Coulee Boulevard, Fort Peck Street to Shasta Dam Boulevard	59.68	59.71	0.03	No
Pine Grove Avenue, Lake Boulevard to Ashby Road	62.90	62.93	0.03	No
Cascade Boulevard, Pine Grove Avenue to Deer Creek Avenue	61.54	61.72	0.18	No
Pine Grove Avenue, Smith Avenue to Cascade Boulevard	63.01	63.04	0.03	No

Traffic noise levels were predicted using the FHWA Traffic Noise Model based on data obtained from the traffic analysis prepared for this project. Predicted noise levels do not take into account shielding provided by intervening structures or existing noise barriers.

Impact 3	**Exposure of Sensitive Receptors to or Generation of Excessive Stationary-Source Noise Levels**. Exposure to noise levels generated by future stationary sources associated with the proposed commercial land uses could result in a substantial increase in ambient noise levels that could exceed the City's noise standards at noise-sensitive land uses. This impact would be ***potentially significant***.

No major existing stationary noise sources were identified in the project area that would adversely affect proposed onsite land uses. The proposed project, however, includes a mix of various land uses, including residential, neighborhood park, and commercial land uses. These land uses would result in new stationary noise sources that could potentially exceed applicable noise standards at nearby noise-sensitive land uses. Noise levels typically associated with these land uses and associated noise impacts are discussed separately below.

Residential

Noise from proposed residential dwellings would expose other nearby residences (both existing and proposed) to minor intermittent increases in ambient noise levels. Noise typically associated with such development includes lawn and garden equipment, voices, and amplified music. Noise generated from these activities would be intermittent and would primarily occur during the daytime and evening hours and less frequently at night. With the exception of exterior central air-conditioning (AC) units, residential dwellings are typically not considered a major stationary-source of noise. Within higher-density development, noise from AC units can result in increased noise levels within interior building areas that can result in increased levels of annoyance and potential sleep disruption, particularly when building windows are open. Noise generated by residential central air-conditioning units typically average approximately 60 to 70 dBA L_{eq} at 3 feet from the source. Depending on the distance between proposed residential dwellings, noise levels associated with exterior AC units located within 10 feet of residential dwellings could potentially exceed 60 dBA L_{eq}. Assuming an average exterior-to-interior noise reduction of 15 dBA, with windows open, predicted interior noise levels could potentially exceed the City's interior noise standard of 45 dBA L_{eq}. As a result, increased noise levels associated with proposed residential land uses would be considered ***potentially significant***.

Neighborhood Parks

The proposed project includes development of a neighborhood park, as well as various open space areas dispersed throughout the plan area. However, the specific uses to be included in the proposed parks have not yet been identified. Park uses typically include children's play areas, parking areas, and recreational uses such as ball fields. Noise typically associated with play areas and associated vehicle parking areas include the voices of adults and children and the occasional opening and closing of vehicle doors.

The noise-generation potential of onsite recreational uses would be primarily associated with larger ball fields (i.e., soccer fields, baseball field, basketball courts, etc) used for competitive events. Noise levels associated with smaller recreational uses, such as volleyball courts and basketball courts, do not typically involve large numbers of spectators and, as a result, are typically considered minor sources of noise. Noise generated by larger recreational facilities is primarily associated with the cheering and yelling of spectator crowds. Based on noise measurements conducted for similar projects, average hourly exterior noise levels typically associated with day-use soccer fields, basketball and volleyball courts, typically average less

than 60 dBA L_{eq} at approximately 50 feet, with maximum intermittent noise levels of up to approximately 90 dBA L_{max} at 10 feet. Events involving the use of amplified sound systems can generate noise levels of approximately 75 dBA L_{eq} at 50 feet.

Recreational uses involving use of amplified sound systems or activities occurring during the more noise-sensitive evening, nighttime, and early morning hours may result in substantial increases in ambient noise levels at nearby existing or proposed residences which could exceed the City's exterior and interior noise standards. Increases in ambient noise levels during the nighttime hours may result in increased levels of annoyance and sleep disruption. For these reasons, potential increases in ambient noise levels associated with proposed park uses would be considered ***potentially significant***.

Commercial

The proposed project includes development of approximately 30 to 60 acres of commercial land uses near the northeastern portion of the project site. However, the specific types of commercial uses to be developed have not yet been determined. Potential sources of noise associated with these types of land uses can vary substantially. Noise sources commonly associated with such uses can include occasional parking lot activities (e.g., opening and closing of vehicle doors, people talking), loading dock operations (e.g., use of forklifts, hydraulic lifts), trash compactors, and air compressors. Noise commonly associated with commercial land uses, such as idling trucks, vehicle backup alarms, decompression of trailer truck brakes, forklifts, and other material loading and unloading activities, can generate intermittent noise levels of approximately 90 dBA L_{max} at 10 feet. Average-hourly noise levels associated with commercial sources typically range from approximately 60-65 dBA L_{eq} at 50 feet.

Operational noise levels associated with the proposed commercial land uses could potentially exceed the City's exterior and interior noise standards at nearby noise-sensitive receptors. In addition, increases in single-event noise levels, such as backup alarms from material delivery trucks, occurring during evening and nighttime hours could result in increased levels of disturbance and sleep disruption to occupants of nearby residential dwellings. Increased noise levels associated with proposed commercial land uses would be considered **potentially significant**.

Mitigation Measure

MM 3 The following mitigation measures shall be implemented:

Proposed Residential Land Uses

- Residential dwellings shall be equipped with central heating and air conditioning systems to allow closure of windows during inclement weather conditions.
- Exterior air-conditioning units located within 10 feet of adjacent residential dwellings shall be low-noise rated and shielded from direct line-of-sight to adjacent residential dwellings. Shielding may include (but is not limited to) the use of wood fencing, provided no visible air gaps are detectable between individual panels. Use of tongue-and-grove or over-lapping panels is recommended.
- Residential dwellings shall be insulated to exceed Title 24 standards.

Proposed Neighborhood Parks

- Use of amplified public address/sound systems within the proposed park and open space areas shall be prohibited.

- Use of proposed park facilities shall be limited to between the daytime hours of 7:00 a.m. and 10:00 p.m.

- Landscape maintenance activities for the proposed park shall be limited to between the daytime hours of 7:00 a.m. and 10:00 p.m.

Proposed Commercial Land Uses

- The City shall require an acoustical assessment to be performed prior to construction of the proposed commercial land uses. Where acoustical analysis determines that stationary source noise levels would exceed applicable noise standards, the City shall require the implementation of noise attenuation measures sufficient to achieve compliance with applicable noise standards at nearby noise-sensitive land uses. Such measure may include, but are not limited to, the incorporation of setbacks, sound barriers, berms, or equipment enclosures.

  ***Timing/Implementation**: Implemented prior to approval of Tentative Map or Planning Director's Special Permit.*

  ***Enforcement/Monitoring**: City of Shasta Lake.*

Significance After Mitigation

Implementation of the above mitigation measures would substantially reduce predicted noise levels at nearby noise-sensitive receptors. Major noise-generating activities associated with proposed land uses, including use of the proposed park and activities associated with the operation of the proposed commercial land uses would be limited to the less noise-sensitive daytime hours. As a result, increased levels of annoyance and potential sleep disruption to occupant of nearby residential dwellings would be substantially reduced. With noise-reduction features incorporated, predicted noise levels at nearby noise-sensitive land uses would not exceed applicable City noise standards. This impact would be considered ***less than significant***.

Impact 4	**Exposure of Sensitive Receptors to or Generation of Excessive Ground-borne Vibration Levels**. Short-term construction and long-term operation of the proposed land uses would not exceed commonly applied thresholds for the prevention of structural damage or human annoyance. This would be a ***less than significant*** impact.

The effects of ground vibration can vary from no perceptible effects at the lowest levels, low rumbling sounds and detectable vibrations at moderate levels, and slight damage to nearby structures at the highest levels. At the highest levels of vibration, damage to structures is primarily architectural (e.g., loosening and cracking of plaster or stucco coatings) and rarely result in structural damage.

There are no federal, state, or local regulatory standards for vibration. However, various criteria have been established to assist in the evaluation of vibration impacts. For instance, the California Department of Transportation (Caltrans) has developed vibration criteria based on human perception and structural damage risks. For most structures, Caltrans considers a peak particle velocity (ppv) threshold of 0.2 inches per second to be the level at which architectural damage (i.e., minor cracking of plaster walls and ceilings) to normal structures may occur.

Below 0.10 inches per second there is "virtually no risk of 'architectural' damage to normal buildings. Levels above 0.4 inches per second may possibly cause structural damage (Caltrans, 2002). In terms of human annoyance, continuous vibrations in excess of 0.1 inches per second ppv are identified by Caltrans as the minimum level perceptible level for ground vibration. Short periods of ground vibration in excess of 0.2 inches per second can be expected to result in increased levels of annoyance to people within buildings (Caltrans, 2002).

Short-term Construction

Site preparation and building construction activities associated with the proposed project are anticipated to require the use of various types of off-highway equipment (e.g., graders, backhoes, off-highway trucks) that would be expected to result in minor intermittent increases in ground vibration. The ground vibration levels associated with various types of construction equipment are depicted in **Table 9**.

Table 9
Representative Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 feet (in/sec)
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
Caisson Drilling	0.089

Source: U.S. Department of Transportation, 1995

Ground vibration levels associated with site preparation and building construction, as noted in **Table 9**, would result in maximum vibration levels of approximately 0.09 inches per second ppv at 25 feet. Construction activities would not be anticipated to occur within 25 feet of existing structures. Based on the vibration levels noted in **Table 9**, predicted ground vibration levels at nearby structures would, therefore, not be anticipated to exceed the commonly applied minimum thresholds of 0.2 in/sec ppv for structural damage or 0.1 in/sec ppv human annoyance. As a result, ground-borne vibration levels associated with construction activities would be considered ***less than significant***.

Long-term Operation

Long-term operational activities associated with the proposed project would not involve the use of any equipment or processes that would result in potentially significant levels of ground vibration. However, as previously discussed, the proposed project site is located adjacent to the UPRR.

Trains can generate relatively high levels of ground vibration levels, depending on various factors, including train speed and weight, condition of track, and amount of ballast used to support the track. Based on measurements conducted by the California Department of Transportation (Caltrans) the highest ground vibration measurement obtained for a freight train measured 9.1 mm/s (0.36 in/sec) at 3 m (10 ft). Based on this measurement, screening criteria have been developed by Caltrans to estimate maximum anticipated ground vibration levels at varying distances from a railroad track. According to Caltrans, architectural damage due to

train-generated ground vibration may occur for structures located within approximately 25 feet of the track centerline. Based on this same assumption, groundborne vibration levels readily perceptible to humans could occur within approximately 80 feet of track centerlines and increased levels of annoyance would be anticipated to occur at distances up to approximately 200 feet of the track centerline (Caltrans 2002,FTA 2006).

As previously noted, the proposed project site is located within approximately 400 feet of the UPRR. At this distance, onsite land uses would not be exposed to groundborne vibration levels that would result in structural damage or increased levels of annoyance. As a result, long-term exposure to ground-borne vibration would be considered **less than significant**.

Impact 5	**Compatibility of Proposed Land Uses with Projected Onsite Noise Levels**. Projected onsite transportation noise levels at nearby proposed onsite development would exceed the City's noise-sensitivity standards for land use compatibility. As a result, this impact would be considered ***significant*.**

As previously noted, the proposed project includes a mix of various land uses, including residential, park, and commercial uses. Onsite land uses would be primarily affected by I-5, which is located along the eastern boundary of the project site, and the UPRR located near the northern and western site boundaries. Noise contours for these transportation noise sources with relation to the project site are depicted in **Exhibit 3** and discussed separately, as follows:

UPRR

As noted earlier in this report, the UPRR is located at varying distances along the western and northern boundaries of the project site. Proposed residential land uses located nearest the UPRR are located in the northwestern portion of the project site, approximately 400 feet from the UPRR main line. The FTA's *Transit Noise and Vibration Impact Assessment Guidelines* (FTA 2006) was used for the calculation of wayside noise levels generated by the trains traveling along the UPRR corridor. Wayside noise levels were calculated taking into account average train speeds, train length, and the number of trains traveling during the daytime and nighttime hours. Wayside noise levels were calculated assuming an equal distribution of freight train traffic during the daytime and nighttime hours.

As noted earlier in this report (**Table 3**), the projected wayside noise levels along the UPRR corridor are estimated to be approximately 78 dBA CNEL at 50 feet from the track centerline. The projected 60 dBA CNEL noise contour for the UPRR corridor would extend to a distance of approximately 855 feet from the track centerline. At the northwestern corner of the project site, the UPRR passes within approximately 500 feet of the project site. At this location, the 60 dBA CNEL contour of the UPRR would extend approximately 355 feet onto the project site. Based on the modeling conducted, the predicted 65 and 70 dBA CNEL contours of the UPRR would not extent onto the project site. Residential land uses located within the northwestern portion of the project site and within approximately 855 feet of the UPRR track could be exposed to noise levels that would exceed the City's "normally acceptable" noise level of 60 dBA L_{dn}/CNEL.

Interstate 5

For determination of land use compatibility, predicted traffic noise contours (in dBA L_{dn}/CNEL) for Interstate 5 (I-5) were modeled for future cumulative (Year 2030) conditions, with implementation of the proposed project. Traffic noise levels were modeled using the FHWA traffic noise prediction model. **Table 10** summarizes predicted distances to the 60 and 65 dBA L_{dn}/CNEL

contours, as well as the predicted traffic noise level at a distance of approximately 100 feet from the near travel-lane centerline. The predicted noise contour distances do not take into account shielding or reflection of noise from existing terrain or existing/future structures.

Based on the traffic noise modeling conducted, the projected future traffic noise level for I-5 at would be 70.5 dBA CNEL near the eastern boundary of the project site, approximately 100 feet form the near travel-lane of I-5. The projected future 65 and 60 dBA CNEL noise contours of I-5 would extend to approximately 382 and 819 feet from the roadway centerline, respectively. Predicted traffic noise levels at proposed onsite residential land uses located within approximately 819 feet of the centerline of I-5 could, therefore, exceed the City's minimum acceptable noise standard of 60 dBA CNEL (**Table 5**). In addition, proposed commercial land uses located within approximately 181 feet of the I-5 centerline could be exposed to projected traffic noise levels in excess of the City's noise standard of 65 dBA CNEL. Because predicted future traffic noise levels at proposed onsite land uses would be projected to exceed the City's noise standards, this impact would be considered ***potentially significant***.

Table 10
Predicted Transportation Noise Levels
Future (Year 2030) Conditions

Roadway Segment	CNEL at 100 feet from Near Travel-Lane Centerline (dBA CNEL)	Distance from Source Centerline to Predicted Noise Contour (dBA CNEL)		
		60	65	70
Interstate 5, SR 151 to Mt. Gate Boulevard	70.5	819	382	181.2

Traffic noise levels were calculated using the FHWA roadway noise prediction model (FHWA-RD-77-108) based on data obtained from the California Department of Transportation.

Mitigation Measure

MM 3 An acoustical assessment shall be prepared for residential land uses located within 855 feet of the UPRR centerline, residential land uses located within 819 feet of the I-5 centerline, or commercial land uses located within 382 feet of the I-5 centerline. Mitigation measures shall be identified to reduce predicted transportation noise levels at onsite receptors to below the City's acceptable exterior and interior General Plan noise sensitivity standards (**Table 5**). Mitigation measures commonly applied to reduce transportation noise levels may include, but are not limited to, the following:

- Construction of sound barriers to shield onsite land uses from line-of-sight of the noise source,
- Orientation of onsite structures to shield more noise-sensitive land uses from line-of-sight of the noise source or use of open-space areas to provide increased setback distances to noise-sensitive land uses,
- Incorporation of increased insulation and noise-reduction features (e.g., sound-rated windows and doors) in building design and construction

***Timing/Implementation**: Implemented prior to approval of Tentative Map or Planning Director's Special Permit.*

***Enforcement/Monitoring**: City of Shasta Lake.*

Significance After Mitigation

With implementation of the above recommended mitigation measures, predicted exterior noise levels at onsite land uses would be reduced to below the City's noise standards. With mitigation, this impact would be considered ***less than significant***.

CUMULATIVE SETTING, IMPACTS AND MITIGATION MEASURES

CUMULATIVE SETTING

The geographic extent of the cumulative setting for noise consists of the project area, the surrounding areas within the City. Cumulative development conditions would result in increased cumulative roadway noise levels, and would also result in increased noise associated with future development. The primary factor for cumulative noise impact analysis is the consideration of future traffic volumes.

CUMULATIVE IMPACTS AND MITIGATION MEASURES

Impact 7	**Contribution to Cumulative Traffic Noise Levels.** Implementation of the proposed project would not result in a substantial contribution to future cumulative traffic noise levels. This would be a ***less than significant*** impact.

As noted earlier in this report, predicted increases in ambient noise levels attributable to the proposed project at nearby existing offsite receptors would be primarily associated with potential increases in traffic noise levels along area roadways. The FHWA roadway noise prediction model (FHWA 1988) was used to predict traffic noise levels along affected roadways based on data obtained from the traffic analysis prepared for this project. The project's contribution to the cumulative traffic noise levels along area roadways was determined by comparing the predicted noise levels with and without project-generated traffic under cumulative conditions. Predicted cumulative traffic noise levels are summarized in **Table 11**.

Based on the modeling conducted, implementation of the proposed project would result in predicted increases in future traffic noise levels of approximately 4.3 dBA CNEL, or less. Implementation of the proposed project would not contribute to substantial increases in traffic noise levels along area roadways located in the vicinity of existing noise-sensitive land uses. Therefore, this impact would be considered ***less than significant***.

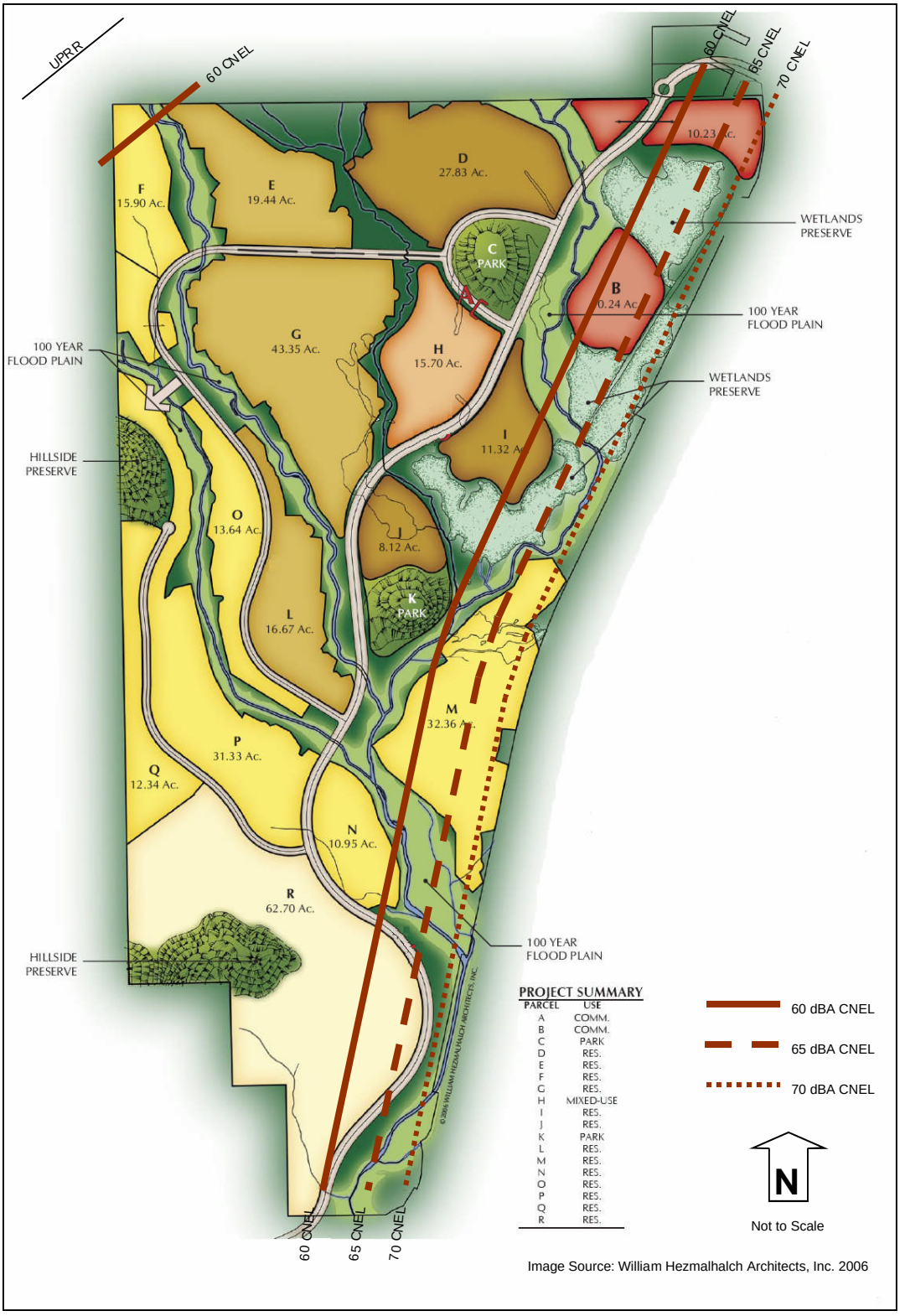


EXHIBIT 3: PREDICTED TRANSPORTATION-SOURCE NOISE CONTOURS

Table 11
Predicted Increases in Traffic Noise Levels
Future Cumulative Conditions (Years 2020 & 2030)

Roadway Segment	CNEL (dBA) at 50 feet from Near-Travel-Lane Centerline							
	Year 2020				Year 2030			
	Without Project	With Project	Predicted Increase	Substantial?	Without Project	With Project	Predicted Increase	Substantial?
Shasta Dam Boulevard, North Boulevard. to Ashby Road	63.64	63.77	0.13	No	63.68	63.82	0.14	No
Ashby Road, Fort Peck Street to Flower Street	60.61	61.79	1.18	No	60.37	61.61	1.24	No
Montana Avenue, Main Street to Front Street	55.78	58.36	2.58	No	55.78	58.36	2.58	No
Red Bluff Street, Washington Avenue to Grand River Avenue	50.32	54.57	4.25	No	50.32	54.57	4.25	No
Main Street, Washington Avenue to Grand River Avenue	51.75	56.04	4.29	No	51.68	55.98	4.30	No
Mussel Shoals Avenue, Front Street to Shasta Dam Boulevard	59.68	61.84	2.16	No	59.68	61.84	2.16	No
Grand Coulee Boulevard, Fort Peck Street to Shasta Dam Boulevard	59.68	59.93	0.25	No	59.68	59.93	0.25	No
Pine Grove Avenue, Lake Boulevard to Ashby Road	63.19	63.52	0.33	No	63.38	63.68	0.30	No
Cascade Boulevard, Pine Grove Avenue to Deer Creek Avenue	62.35	63.35	1.00	No	62.70	63.63	0.93	No
Pine Grove Avenue, Smith Avenue to Cascade Boulevard	63.72	63.89	0.17	No	63.85	64.03	0.18	No

Traffic noise levels were predicted using the FHWA Traffic Noise Model based on data obtained from the traffic analysis prepared for this project. Predicted noise levels do not take into account shielding provided by intervening structures or existing noise barriers.

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APPENDIX A
TRAFFIC NOISE MODELING

Traffic Noise Prediction Modeling

	TRAFFIC DISTRIBUTION PERCENTAGES		
	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

Existing

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 6753 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.49
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	81.8	175.8

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 3974 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.19
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	57.6	123.5

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 1392 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.63
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	61.6

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 387 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 50.07
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 517 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.33
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	0.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 1275 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.67
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	72.2

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD

ADT: 1361 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.95
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 75.4

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 4091 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.73
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 72.9 156.5

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 3666 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.26
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 67.8 145.5

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 3977 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.61
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 71.5 153.6

2010 Without Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 7040 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.67
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 84.1 180.7

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 4280 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.51
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 60.5 129.8

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 1410 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.69
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 62.1

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 400 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 50.21
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL

------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 540 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.52
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 1390 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.04
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 76.4

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2550 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.3 114.3

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 5350 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.90
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 87.0 187.1

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 3910 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.54
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 70.7 151.9

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 5490 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.01
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 88.5 190.4

2010 With Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 7070 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.69
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 84.3 181.2

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 4420 SPEED: 35 ACTIVE HALF WIDTH (FT): 6

SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.65
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 61.8 132.6

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 1520 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.01
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 65.3

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 450 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 50.73
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 52.05
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 1660 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 57.81
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 86.0

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2570 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.71
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.6 114.9

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 5390 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.93
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 87.5 188.1

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 4080 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.72
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 72.7 156.2

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 5530 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.04
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 89.0 191.3

2020 Without Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 8800 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.64
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 97.5 209.7

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 4380 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.61
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 61.4 131.8

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 1440 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.78
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 63.0

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 410 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 50.32
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 570 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.75
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 2550 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.3 114.3

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2550 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.3 114.3

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 5730 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.19
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 91.1 195.9

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 4720 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.35
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 80.1 172.2

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 6460 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.72
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 98.6 212.2

2020 With Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 9080 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.77
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 99.5 214.1

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 5750 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.79
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 73.5 157.9

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 2610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.36
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 93.4

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 1090 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.57
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 52.4

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER

ADT: 1530 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 56.04
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 65.6

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 4190 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.84
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 74.0 159.0

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2700 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.93
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 55.4 118.7

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 6170 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.52
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 95.7 205.8

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 5940 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.35
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 93.3 200.6

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 6730 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.89
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 101.4 218.0

2030 Without Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 8890 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 98.1 211.1

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 4150 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 60.37
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 59.3 127.1

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 1440 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.78
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 63.0

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 410 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 50.32
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 560 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 51.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 0.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 2550 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.3 114.3

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2550 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 53.3 114.3

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 5980 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.38
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 93.7 201.5

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 5110 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 62.70
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 84.4 181.5

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 6670 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.85
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 100.8 216.7

2030 With Project

RUN NAME: SHASTA DAM BLVD, N BLVD TO ASHBY RD
ADT: 9170 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.82
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 100.2 215.5

RUN NAME: ASHBY RD, FT PECK TO FLOWER
ADT: 5520 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.61
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 71.5 153.7

RUN NAME: MONTANA AVE, MAIN TO FRONT
ADT: 2610 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 58.36
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 93.4

RUN NAME: RED BLUFF, WASHINGTON TO GRAND RICE
ADT: 1090 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 54.57
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 52.4

RUN NAME: MAIN, WASHINGTON TO GRAND RIVER
ADT: 1510 SPEED: 35 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 55.98
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 0.0 65.0

RUN NAME: MUSSEL SHOALS, FRONT TO SHASTA DAM BLVD
ADT: 4190 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 61.84
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 74.0 159.0

RUN NAME: GRAND COULEE BLVD, FORT BECK TO SHASTA DAM BLVD
ADT: 2700 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 59.93
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 55.4 118.7

RUN NAME: PINE GROVE, LAKE TO ASHBY
ADT: 6410 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.68
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 98.1 211.1

RUN NAME: CASCADE, PINE GROVE TO DEER CREEK
ADT: 6330 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 63.63
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 97.3 209.3

RUN NAME: PINE GROVE, SHMITH TO CASCADE
ADT: 6950 SPEED: 40 ACTIVE HALF WIDTH (FT): 6
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): .5
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 64.03
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
0.0 0.0 103.6 222.8

CALTRANS YR2005 TRAFFIC VOLUMES

Description	Back Peak Hour	Back Peak Month	Back AADT	Ahead Peak Hour	Ahead Peak Month	Ahead AADT
REDDING, OASIS ROAD	4700	53000	46500	4250	47000	38000
PINE GROVE	4250	47000	38000	3750	41000	33500
JCT. RTE. 151 WEST, PROJECT CITY	3750	41000	33500	3800	31000	24100
MOUNTAIN GATE	3800	31000	24100	4050	28500	21800

	Pk-Hr Summary		
REDDING, OASIS ROAD TO PINE GROVE	4250		
PINE GROVE TO RT 151	3750		
RT 151 TO MT GATE	3800	1.32%	INCREASE OVER PG TO RT151 SEGMENT)

PROJECTED YR 2030 I-5 VOLUMES (OMNIMEANS 2007)	**NB**	**SB**	**TOTAL**
PINE GROVE TO RT 151 (PK-HR AVG)	3097	3084	6181

CALCULATED YR2030 TRAFFIC VOLUMES

RT 151 TO MT GATE (PK-HR AVG)	3138	3125	6,262	[k-factor=1.32}
RT 151 TO MT GATE (ADT)	18,827	18,747	37,574	[k-factor=0.06]

RUN NAME: I5 EXISTING
ADT: 24100 SPEED: 70 ACTIVE HALF WIDTH (FT): 42
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): 1
LEQ/CNEL AT 100 FT FROM NEAR TRAVEL LANE CENTERLINE = 67.7
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *
70 CNEL 65 CNEL 60 CNEL 55 CNEL
------- ------- ------- -------
122.7 252.0 536.8 1153.4

MEASURED NOISE LEVEL AT 100 FEET FROM NTLCL: 67.2
CALIBRATION LEVEL: +0.5
<No Calibration Applied>

RUN NAME: I5 YR2030

ADT: 37574 SPEED: 70 ACTIVE HALF WIDTH (FT): 42
SITE CHARACTERISTICS: SOFT GRADE (PERCENT): 1
CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE = 70.5
* * DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL * *

70 CNEL	65 CNEL	60 CNEL	55 CNEL
181.2	382.0	818.9	1762.1

FTA NOISE PREDICTION
LOCOMOTIVES - FREIGHT

Reference SEL:		104	
Avg. Number of Cars:		75	
Avg. Number of Locomotives:		2	
Speed:		50.00	
Daytime Total Number of Trains		12.00	
Daytime Hourly Avg Number of Trains		0.80	
K: Enter -10 for pass, 0 for DME, or +10 for electric:	0.00	0	
Daytime Leq at 50 feet:		72.44	dBA

Reference SEL:		104	
Avg. Number of Cars:		75	
Avg. Number of Locomotives:		2	
Speed:		50.00	
Nighttime Total Number of Trains:		13.00	
Nighttime Hourly Avg. Number of Trains:		1.44	
K: Enter -10 for pass, 0 for DME, or +10 for electric:	0.00	0	
Nightime Leq at 50 feet:		85.01	dBA
Combined Ldn at 50 feet:		81	dBA

LOCOMOTIVES - PASSENGER (AMTRAK)

Reference SEL:		104	
Avg. Number of Cars:		10	
Avg. Number of Locomotives:		2	
Speed:		50.00	
Nighttime Total Number of Trains:		2.00	
Nighttime Hourly Avg. Number of Trains:		0.22	
K: Enter -10 for pass, 0 for DME, or +10 for electric:	-10.00	0	
Nightime Leq at 50 feet:		66.88	dBA
Combined Ldn at 50 feet:		63	dBA
Shielding		0	
Grade Crossing Within 1/4 mile?		No	
WITH SHIELDING (ENTER RURAL=2.87, LGHT SUBURBAN=3.38, DENS SUBURB=4.19, LGHT URBAN=3.93, DENS URBAN=4.95):	2.87	**78**	

	DISTANCE (FEET)		
PREDICTED LDN AT NEAREST RECEPTOR (WITHOUT SHIELDING)	50	**78**	dBA
DISTANCE TO 70 LDN CONTOUR (FEET):	185		
DISTANCE TO 65 LDN CONTOUR (FEET):	400		
DISTANCE TO 60 LDN CONTOUR (FEET):	855		

Source: Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment.

Appendix 4.6-1

BIOLOGICAL RESOURCE ASSESSMENT, February 2012

BIOLOGICAL RESOURCES ASSESSMENT
FOR THE

±597-ACRE MOUNTAIN GATE AT SHASTA STUDY AREA

CITY OF SHASTA LAKE, SHASTA COUNTY, CALIFORNIA



Prepared for:

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FEBRUARY 2012

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Appendix C. Special-Status Plant Species Known to Occur in the Region of the Mountain Gate at Shasta Study Area
Appendix D. Special-Status Wildlife Species Known to Occur in the Region of the Mountain Gate at Shasta Study Area

BIOLOGICAL RESOURCE ASSESSMENT
FOR THE
±597-ACRE MOUNTAIN GATE AT SHASTA STUDY AREA

INTRODUCTION

Project Background and Location

We conducted a Biological Resources Assessment for the ±597-acre Mountain Gate at Shasta project during the timeframe of 2005-2008. We recently updated that report to review recent California Natural Diversity Data Base information and to determine if site conditions remain the same. The report addresses the biological resources on the Study Area, including discussions on potentially occurring special status plants and wildlife.

The project site is located approximately 8 miles north of Redding and just north of the City of Shasta Lake. It is bounded on the east by Interstate 5 and to the south and southwest by residential and rural residential housing. The north and northwest boundaries adjoin undeveloped land. The project site is situated in Sections 20 and 29 of Township 33 north and Range 4 west on the Project City, California 7.5-minute USGS topographic quadrangles (Figure 1). The latitude and longitude for the approximate center of the project site is 40°41'53" north and 122°20'53" west.

The project site is situated in the foothills of the northwest Coast Range at elevations between 800 and 950 feet above sea level. The majority of the property is foothill woodland but a large component of upland grassland and seasonal wetland occurs on the eastern part of the site. The project site is undeveloped and contains numerous dirt roads and trails. Much of the site is regularly used by local OHV riders. Figure 2 is a 2004 aerial showing the site and surrounding land uses.

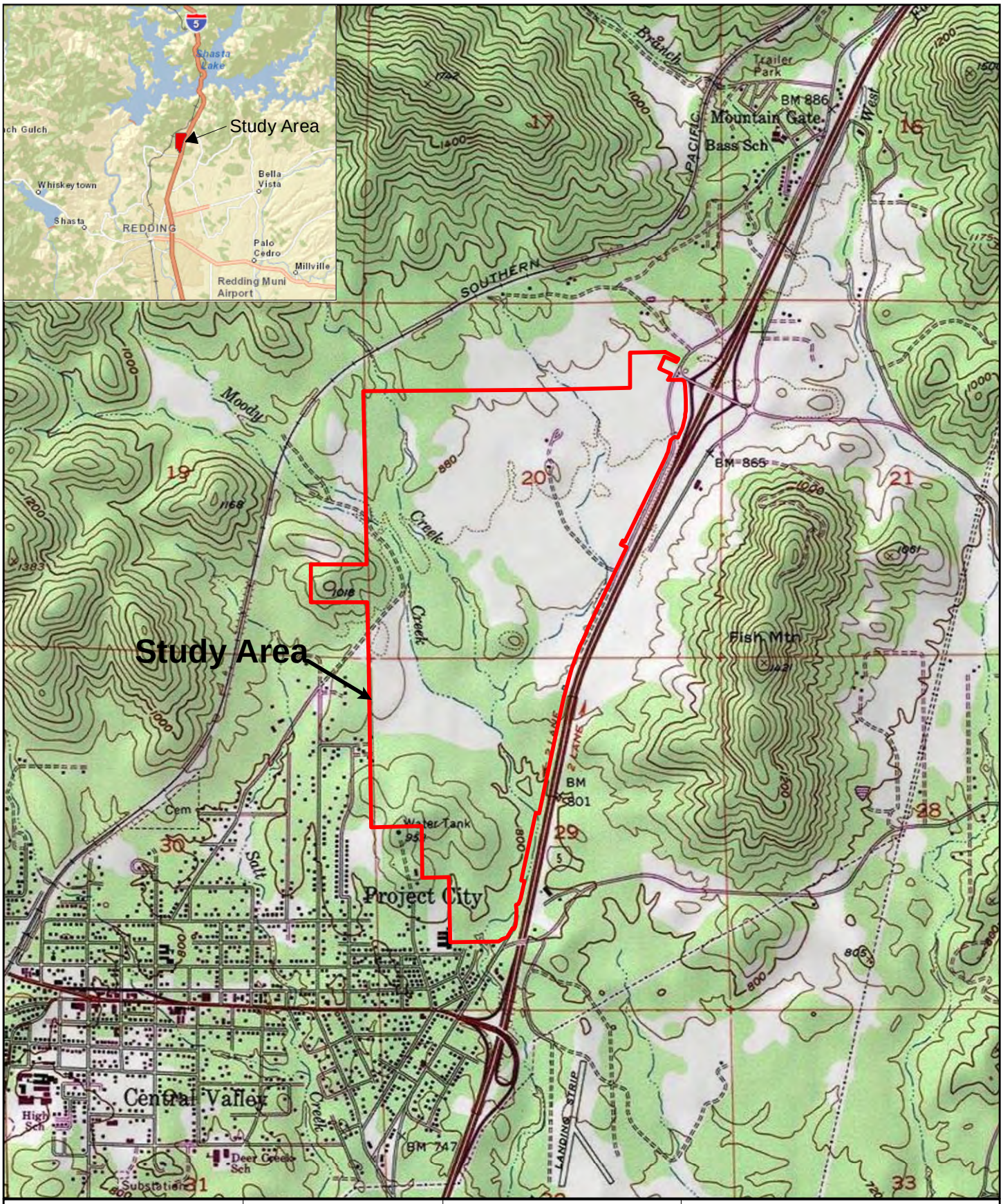
Objectives of Biological Resource Assessment

- Identify and describe the biological communities present in the study area.
- Record plant and animal species observed in the study area.
- Evaluate and identify sensitive resources and special-status plant and animal species that could be affected by project activities.
- Provide conclusions and recommendations.

METHODS

Literature Review

Information used in the initial evaluation of the project site included several color aerial photographs (July 1999, 2002, and April 2004), USGS quadrangle maps for the area, the



Salix consulting, inc.

N

0 1,000 2,000

Scale in Feet

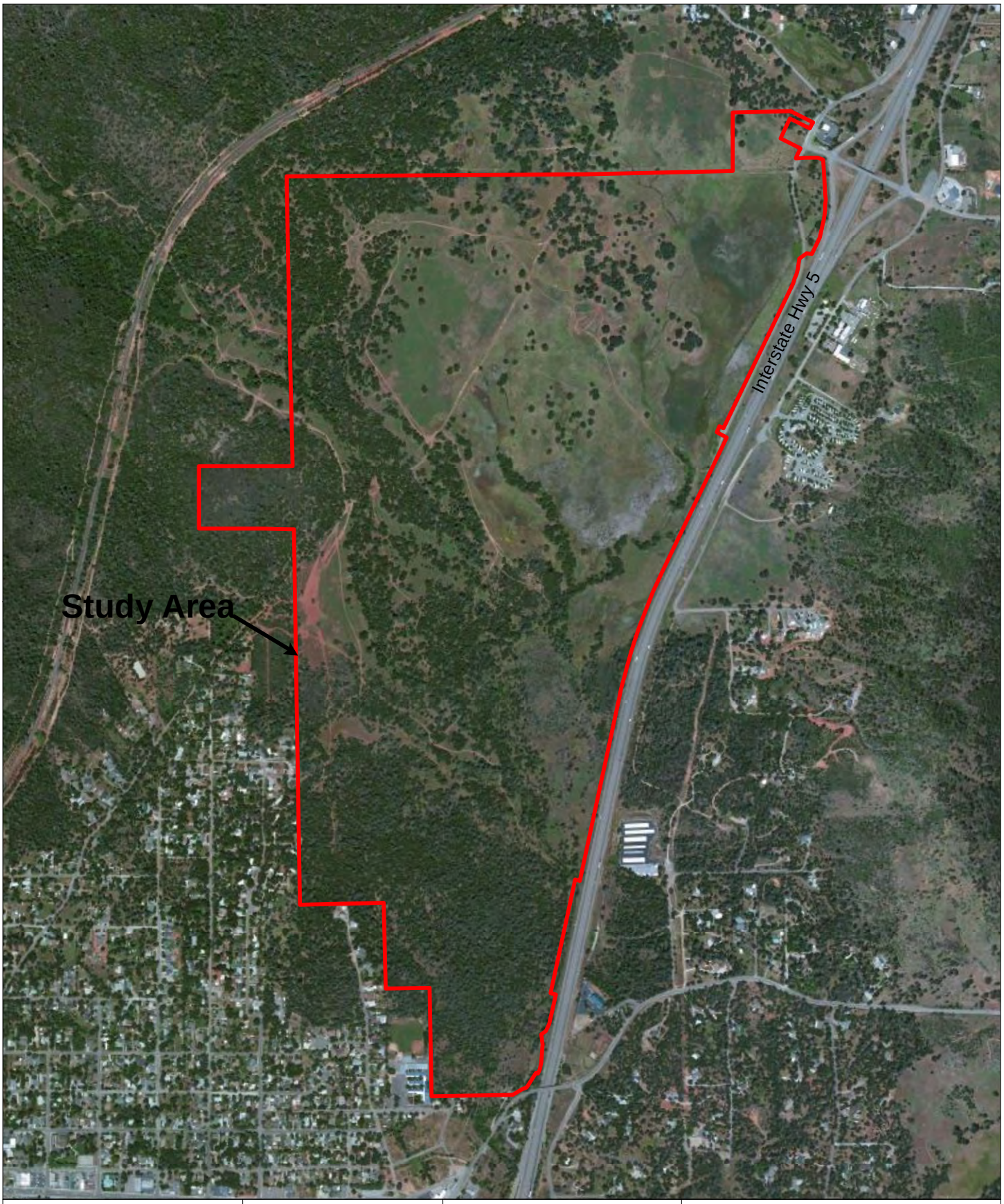
NOTES:
Base map: Project CIty, CA, USGS
7.5 minute topographic quadrangle
Section: 20 & 29, Township: 33N, Range: 4W

Figure 1

SITE & VICINITY MAP

Mountain Gate at Shasta

City of Shasta Lake, Shasta County, California



Salix consulting, inc.

N

0 600 1,200

Scale in Feet

Bing Aerial Photo

Figure 2

AERIAL PHOTO

Mountain Gate at Shasta

City of Shasta Lake, Shasta County, California

Geologic Map of California, Redding Sheet (California Division of Mines and Geology 1962), and the Shasta County Area soil map (USDA, SCS 1974).

The following publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring plant and animal species: *California's Wildlife*, Volumes I-III (Zeiner et al. 1988, 1990a, 1990b), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 1985), *The Peterson Field Guide to the Mammals of North America* (Burt and Grossenheider 1980), *The Sibley Field Guide to Birds of Western North America* (Sibley 2003), *The Peterson Field Guide to Hawks of North America* (Clark and Wheeler 1987), *Jepson Manual; Higher Plants of California* (Hickman 1993), *California Vegetation* (Holland and Keil 1995), *Birds of Northern California* (Fix and Bezener 2000), and *Mammals of the Pacific States* (Ingles 1965).

Special-Status Species Reports

To determine which special-status species could occur on or near the project site and update previous information, Salix Consulting, Inc. queried the California Natural Diversity Data Base (CDFG 2012) and the California Native Plant Society Inventory (CNPS 2012) for reported occurrences of special status fish, wildlife, and plant species in the region surrounding the project site. The nine-quadrangle search included the Project City, Enterprise, Redding, Shasta Dam, Minnesota Mountain, Palo Cedro, Bella Vista, O'Brien, and Bohemotash Mountain quadrangles quadrangles. Salix Consulting biologists also reviewed the following special-status species lists for the project vicinity:

- U.S. Fish and Wildlife Service list of Federal Endangered and Threatened Species for the Project City USGS quadrangle;
- USFWS list of Federal Endangered and Threatened Species for Shasta County; and
- California Department of Fish and Game list of Species of Special Concern.

For the purposes of this report, special status species are those that fall into one or more of the following categories:

- Listed as endangered or threatened under the federal Endangered Species Act (or candidate species, or formally proposed for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated a Species of Special Concern by the California Department of Fish and Game, or
- Ranked 1, 2, 3, or 4, maintained by the California Native Plant Society.

Field Surveys

Initial field surveys of the Study Area were conducted by Jeff Glazner and Pat Britton, in April 2004, November 2004, and January 2005. These surveys were conducted primarily for the wetland delineation. Additional botanical surveys were conducted by Barry Anderson on April 19 and 20, May 19, and June 29, 2006. The primary purpose of these surveys was to locate

special status species that might be present. Biologist Erinn Birmingham conducted an initial wildlife survey on May 19, 2006, and Gaylene Tupen conducted an additional wildlife survey on August 14, 2006. A recent site visit was conducted by Jeff Glazner and Gaylene Tupen on January 24, 2012 to provide updated information on sensitive plant and wildlife resources present on site.

During all field surveys the entire site was evaluated on foot (or by ATV) and all areas of the site were evaluated. Plants and animals observed were recorded, habitat types were determined and the potential for the site to support special status species were also assessed. Appendix A is a list of plant species observed during field surveys, and Appendix B is a list of wildlife observed.

All botanical surveys were conducted floristically according to guidelines for rare plant surveys issued by the California Department of Fish and Game. Each individual plant encountered was identified to the extent necessary to determine whether it was a special status species. Plants unknown to the surveyor were collected and identified in the office using a binocular microscope and standard plant identification manuals. Some specimens were pressed for later identification and these are stored in the North Fork Associates herbarium in Auburn. Plant names follow *The Jepson Manual* (Hickman 1993) and updates by the Jepson Interchange, a web site maintained by the University and Jepson Herbaria of the University of California.

SURVEY AND LITERATURE SEARCH RESULTS

Geology and Soils

The Geologic Map of California, Redding Sheet (1:250,000) shows the presence of Pleistocene non-marine sediments and Devonian and pre-Devonian metavolcanic rocks (California Division of Mines and Geology 1962). Neither is known to support special status plants that are known to occur on limestone, serpentine, and other special geological formations in this area.

Eleven soil units are identified and mapped on the site: Anderson gravelly sandy loam; Auburn loam, 0 to 8 percent slopes; Auburn very stony loam, 8 to 30 percent slopes; Auburn clay loam, 8 to 30 percent slopes, eroded; Churn gravelly loam, deep, 0 to 3 percent slopes; Churn loam, slightly wet, 0 to 3 percent slopes; Churn gravelly loam, 0 to 3 percent slopes; Churn gravelly loam, 3 to 8 percent slopes; Perkins gravelly loam, 8 to 15 percent slopes; Red Bluff loam, 0 to 3 percent slopes; Red Bluff loam, 3 to 8 percent slopes. Soil types are discussed in more detail in the wetland delineation report**.**

Hydrology

Two named creeks including Moody Creek and Rancheria Creek occur within the Study Area. Other unnamed tributaries are also present throughout the site. The source of these creeks is on the south side of Saddle Back, a ridge that separates the site from Shasta Lake. Most of the streams are intermittent and have some groundwater component. The unnamed stream associated with the large wetland area is the eastern portion of the site has a substantial groundwater component. The geotechnical report for the site indicates the presence of unfractured rock under most of the site between 5 and 15 feet deep. The water source for the large wetlands is unknown, but water perched on unfractured rock probably contributes to the wetland hydrology.

Rancheria Creek converges with Moody Creek in the south-central portion of the Study Area. Moody Creek then flows off-site at the southern property boundary and eventually flows into Stillwater Creek, a major tributary to the Sacramento River. Stillwater Creek flows in a southerly direction and into the Sacramento River approximately 20 miles to the south, just north of the City of Anderson.

Both Moody Creek and Rancheria Creek were dry during the July 2006 surveys and all streams were dry by the August 2006 wildlife survey. During the recent January 2012 site visit, Rancheria and Moody creeks were flowing at approximately 5 cubic feet per second. Smaller unnamed drainages throughout the site also had variable amounts of surface flow or had pockets of standing water at the time of the January site visit. Moody and Rancheria creeks are expected to flow throughout much of the rainy season and possibly retain pockets of surface water into the late spring or early summer months, depending on rainfall conditions. However, none of the creeks located on site are expected to retain surface water throughout the dry season.

Biological Communities

Vegetation on the site is a mosaic of foothill woodland and annual grassland. Figure 3 is a habitat map and Figures 4 and 5 include site photos of the property.

Foothill Woodland

Foothill woodland occupies the majority of the project site. Valley oak (*Quercus lobata*), blue oak, and interior live oak are the dominant tree species. Foothill pines are present and are widely scattered throughout the property. Valley oak is more abundant along the open meadows, whereas blue oak, interior live oak and foothill pine are more suited to drier locations. The shrub layer varies from dense to absent depending on factors such as slope and soil depth. Common shrubs include white leaf manzanita, poison oak, toyon, coffeeberry, and buck brush. The herbaceous (non-woody) understory is made up of a combination of ruderal and native species. Abundant herbaceous species observed included hedgehog dogtail grass, crane's-bill geranium, clover, buttercup, sanicula, yellow star-thistle, and blue wildrye. The oak woodland on the project site is typical of such habitats in the region at this elevation.

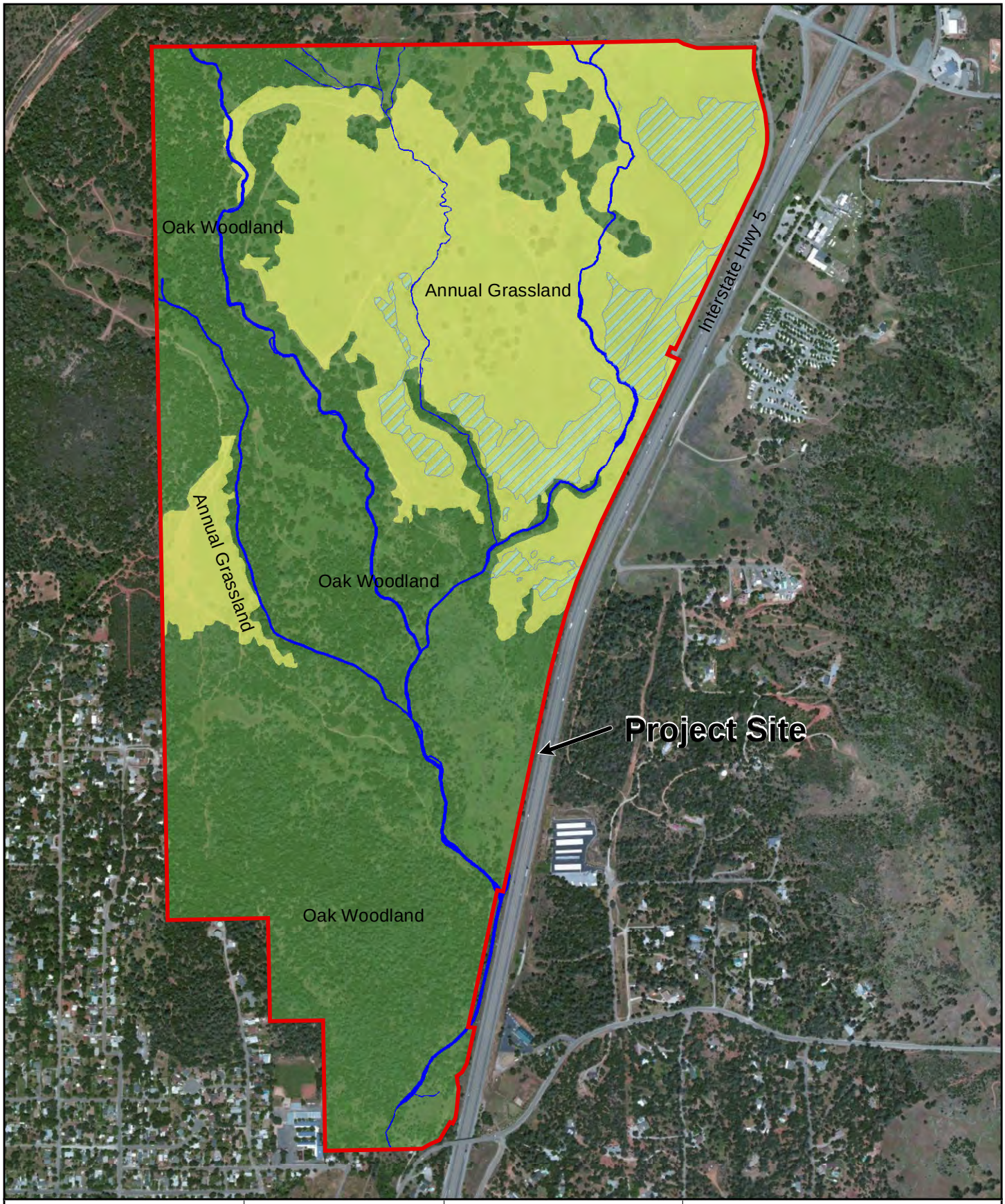
Annual Grassland

The annual grassland occurs primarily in the northern areas and consists of medusa head, soft chess brome, ripgut brome, chicory, yellow star-thistle, and hedgehog dogtail grass. Native species observed included western buttercup, white brodiaea, blue wildrye, and Fitch's spikeweed.

Large areas of herbaceous wetlands are embedded into the annual grassland habitat. These areas appear to be driven by seasonal high groundwater as well as surface runoff. They are dominated by yampah, common velvet grass, dallis grass, iris-leaf rush, Italian ryegrass, and other wetland generalists.

Wildlife

The project site is expected to support a wide diversity of wildlife due to the availability of important habitat features including nesting sites, escape and thermal cover, and a variety of food sources. In addition, ephemeral and intermittent streams located on site provide seasonal



Salix consulting, inc.

N

0 250 500 1,000

Scale in Feet

Study Area - 583 acres
Annual Grassland (~228 acres)
Oak Woodland (~355 acres)
Intermittent Streams
Wetlands

Bing Aerial Photo

Figure 3

HABITAT MAP

Mountain Gate at Shasta

City of Shasta Lake, Shasta County, CA



4a. Annual grassland and foothill woodland.



4b. Typical annual grassland area with foothill woodland in background.



4c. Seasonal wetland (SW-7).



4d. Seasonal wetland (SW-8).

Salix consulting, inc.

Photo Date: April 15 & November 17, 2004 and January 27, 2005

Figure 4

SITE PHOTOS

Mountain Gate at Shasta

City of Shasta Lake, Shasta County, CA



5a. Ephemeral stream. (ES-2) looking northeast toward I-5.



5b. Intermittent stream, Rancheria Creek (1/24/2012)



5c. Intermittent stream, Moody Creek (1/24/2012).

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Figure 5

SITE PHOTOS

Mountain Gate at Shasta

City of Shasta Lake, Shasta County, CA

sources of water for wildlife of the area. Woodland communities, such as those located throughout the site are important for animal cover and provide excellent roosting and nesting opportunities for birds and shelter for mammals. Snags located throughout the site provide nesting cavities for birds such as owls, woodpeckers, and bluebirds. Taller trees of the site provide good nesting habitat for raptors such as great horned owl, red-tailed hawk, and red-shouldered hawk.

The following animals were observed in association with annual grassland of the project site during field surveys associated with this study: California ground squirrel, American robin, Western scrub jay, mourning dove, California quail, spotted towhee, western kingbird, house finch, American crow, sharp-shinned hawk, barn swallow, and turkey vulture. In addition, red-tailed hawks, red-shouldered hawks, and a sharp-shinned hawk were observed flying over both woodland and grassland areas during the various field surveys. Sign of black-tailed hare, mule deer, coyote, Botta's pocket gopher, and other small rodents was observed in grassland and open woodland habitats of the project site. The following animals were observed directly, or evidence of their occurrence was observed within woodland habitats of the project site during the field surveys: western gray squirrel, California towhee, western scrub-jay, oak titmouse, Anna's hummingbird, acorn woodpecker, yellow-rumped warbler, western fence lizard, and coyote.

During the August 14, 2006 site visit, on-site drainages were dry in most locations and therefore no aquatic species were present. Only a small portion of the eastern-most unnamed drainage contained a few inches of standing water at the time of the site visit. Most drainages throughout the site, including the larger Moody and Rancheria creeks, were flowing at the time of the recent January 2012 survey and are expected to flow throughout the rainy season. Portions of the larger drainages have some limited potential to be used on a seasonal basis by anadromous fish species known from the region.

The following species were detected in the vicinity of on-site drainages during the field surveys: black phoebe, raccoon, Sierran treefrog, striped skunk, and mule deer. While no active nests were detected during previous field surveys, numerous taller oaks and pines located throughout the site are expected to provide important seasonal nesting habitat for raptors. A complete list of species observed during the field surveys is provided in Appendix B.

Regulated Habitats

Waters of the U.S.

A wetland delineation on the Mountain Gate at Shasta project site was conducted during 2004-2006. The delineation was verified in May 2008 and is currently valid. The majority of the project site is oak woodland while a large upland/wetland grassland complex occurs along I-5. The site contains two named creeks, Moody and Rancheria Creek that flow north to south through the site and off the site to the south into the City of Shasta Lake. We have mapped a total of 57.54-acres of Waters of the United States, represented by ephemeral streams, intermittent streams, wetland swales and seasonal wetlands.

Streams and Riparian Habitat

The property has several stream channels that are within the jurisdiction of the California Department of Fish and Game. In general, these channels do not have a dense, continuous

canopy of riparian vegetation. What is present consists of scattered willow shrubs and trees and a few scattered cottonwoods. Portions of some channels and floodplains support wetland vegetation. Impacts to these areas would require a permit from CDFG.

Special-Status Species

Appendix C is a list of special status plants that may occur on the project site, and Appendix D is a similar list of special status wildlife. Species requiring habitats not occurring in or around the study area and species occurring far outside the study area are not considered in Appendix C or Appendix D. Field surveys and the best professional judgment of Salix Consulting, Inc. biologists were used to further refine the tables in Appendix C and Appendix D. In general, plants on the CNPS Rank 3 and Rank 4 are not considered further. Table 1 is a list of special status species that occur on the site or that are rated possible or likely to occur. These species are discussed in more detail following the table.

The refined list of special status species in the region of the project site includes 15 plants and 20 animals (Appendix C and Appendix D, respectively). Of the 15 plant species in Appendix C and 20 animal species in Appendix D, seven plants and three animals were determined to either occur onsite or were rated "possible" or "likely" to occur because the site has some areas of suitable habitat or they are known from nearby locations. Several species rated "unlikely" to occur, or having no potential for occurring on site, are listed below due to their high federal or state status. Table 2 is a summary of those species, and discussions for some of the identified species are provided following the table.

Table 1
Special Status Species That Could Occur in the Region Surrounding the Mountain Gate at Shasta Study Area

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
Plants					
Ahart's paronychia *Paronychia ahartii*	-	-	Rank 1B.1	Woodlands and grasslands	Unlikely. Marginal habitat is present.
Bellinger's Meadowfoam *Limnanthes floccosa* subsp. *bellingeriana*	-	-	Rank 1B.2	Mesic areas near wetlands	Possible. Could occur in wetlands.
Four-angled spikerush *Eleocharis quadrangulata*	-	-	Rank 2.2	Marshes (freshwater)	Possible. Could occur in wetlands.
Henderson's bent grass *Agrostis hendersonii*	-	-	Rank 3.2	Moist areas in grasslands, and vernal pools.	Unlikely. Very marginal habitat is present.
Northern clarkia *Clarkia borealis* subsp. *borealis*	-	-	1B.3	Forest and woodland openings	Possible. Suitable upland habitat is present.
Red Bluff dwarf rush *Juncus leiospermus* subsp. *leiospermus*	-	-	1B.1	Seasonal wetlands and vernal pools	Possible. Could occur in wetlands.

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
Woolly meadowfoam *Limnanthes floccosa floccosa*	-	-	2	Cimontane woodland; valley and foothill grassland in wetlands.	Possible. Could occur in wetlands on site.
Silky cryptantha *Cryptantha crinita*	-	-	1B.2	Gravelly streambeds	Possible. Suitable habitat occurs in two of the stream channels.
Invertebrates					
Vernal pool fairy shrimp *Branchinecta lynchi*	FT	-	-	Vernal pools and seasonal wetlands.	None. No suitable aquatic habitat (vernal pools) present on site. Closest occurrences from east side of Redding.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	-	-	Vernal pools and seasonal wetlands.	None. No suitable aquatic habitat (vernal pools) present on site. Closest occurrences from east side of Redding.
Insects					
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	-	-	Elderberry shrubs in woodland and riparian habitats	Unlikely. No suitable habitat (elderberry shrubs) detected during field surveys.
Fish					
Central Valley steelhead *Oncorhynchus mykiss*	FT	-	-	Sacramento River and major tributaries below impassable barriers.	Possible. Seasonal streams may provide some seasonal aquatic habitat. Known from Stillwater Creek Watershed.
Chinook salmon – Central Valley fall/late fall run *Oncorhynchus tshawytscha*	SC	SC/ CSC	-	Sacramento River and major tributaries below impassable barriers.	Possible. Seasonal streams may provide some seasonal aquatic habitat. Historic occurrences in Stillwater Creek Watershed.
Chinook salmon - Central Valley spring-run *Oncorhynchus tshawytscha*	FT	CT	_	Sacramento River and major tributaries below impassable barriers.	Unlikely. Not mapped as occurring in watershed. Known only from mainstem of the Sacramento River and major tributaries.
Chinook salmon - Sacramento River winter run *Oncorhynchus tshawytscha*	FE	CE	_	Main stem of Sacramento River below impassable barriers.	Unlikely. Not mapped as occurring in watershed. Occurs primarily in mainstem of Sacramento River.
Amphibians					
Shasta salamander *Hydromantes shastae*	_	CT	_	Cliff faces and vertical cavern walls associated mainly with limestone outcrops.	Unlikely. No suitable habitat (limestone outcrops) present on site. Isolated populations known from the east and north of the site, near Shasta Lake.

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
California red-legged frog *Rana draytonii*	FT	CSC	-	Deeper pools and streams with emergent or overhanging vegetation	Unlikely. No suitable aquatic habitat present in study area. No known occurrences in project region or county. Located outside of current range.
Foothill yellow-legged frog ***Rana boylii***	-	CSC	-	Partially-shaded shallow rocky streams. Rarely found far from permanent water.	Unlikely. No suitable aquatic habitat (perennial shallow streams) observed within study area.
Reptiles					
Western pond turtle *Emys marmorata marmorata*	-	CSC	-	Permanent aquatic habitats with suitable basking sites and adjacent upland habitat.	Unlikely. No suitable aquatic habitat, including ponds or slow-moving streams or rivers, present on site. May occur in pools in lower-most reaches of Moody Creek.
Birds					
Bald eagle *Haliaeetus leucocephalus*	–	CE	-	Lake margins and rivers. Nests in large old-growth trees near water.	Unlikely. No suitable nesting or foraging habitat present on site. May occasionally fly over site.
American peregrine falcon *Falco peregrinus anatum*	-	CE	CFP	Nests in protected areas along cliffs or ledges usually near water.	Unlikely. No suitable nesting or foraging habitat present on site. May occasionally venture into site.
Purple martin *Progne subis*	-	CSC	-	Summer visitor of woodlands and low-elevation coniferous forests.	Possible. Potential nesting habitat in snags and abandoned woodpecker cavities in woodland areas throughout site.
Bank swallow *Riparia riparia*	–	CT	-	Colonial nester that nests along vertical banks and cliffs with fine-textured or sandy soils near water.	None. No suitable nesting habitat, in the form of vertical banks or cliffs along streams or rivers, located within project site.
Mammals					
Townsend's big-eared bat *Corynorhinus townsendii*	-	CSC	-	Roosts in caves and mines or other human-made structures.	Unlikely. No suitable roosting habitat present on site. May periodically forage on site.
Spotted bat *Euderma maculatum*	-	CSC	-	Roosts in caves, rock crevices and occasionally buildings.	Unlikely. No suitable roosting habitat present on site. May periodically forage on site.

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
Pacific fisher *Martes pennanti pacifica*	FC	SCT/ CSC		Intermediate to large-tree conifer forests and riparian woodlands.	Unlikely. No suitable dense forest habitat present on site. Numerous occurrences to northwest, north and northeast in the vicinity of Shasta Lake.

*Status Codes:

Federal

FE	Federal Endangered
FT	Federal Threatened
FP	Federal Proposed Species
FC	Federal Candidate Species
SC	National Marine Fisheries Service – Candidate

State

CE	California Endangered
CT	California Threatened
CR	California Rare (plants only)
CSC	California Species of Concern
CFP	California Fully Protected
SCE	State candidate (endangered)
SCT	State candidate (threatened)

CNPS

Rank 1B	Rare, Threatened, or Endangered in California
Rank 2	R, T, or E in California, more common elsewhere
	1- Seriously threatened in California
	2- Fairly threatened in California
	3- Not very threatened in California

**Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Plants

The site does contain wetlands and therefore, may support some of the special status plant and animal species known to occupy these habitats. Appendix A is a preliminary list of plant species observed and Appendix B is a preliminary list of wildlife species observed.

Plants

Ahart's paronychia (*Paronychia ahartii*) is an inconspicuous, erect, annual member of the pink family (Caryophyllaceae). It lacks state or federal status, but is on the CNPS Rank 1B. Other members of the genus in California area introduced. Ahart's paronychia differs from these by being very short (less than 2 cm high rather than more than 2 cm) and annual (rather than perennial). It grows in rocky hard packed soil, often at the edges of vernal pools, especially in volcanic uplands. It is found in Butte, Tehama, and Shasta Counties, and it blooms from April to June. No members of the genus *Paronychia* were observed during field surveys. Several common introduced members of the pink family were found on the site.

Bellinger's meadowfoam (*Limnanthes floccosa* subsp. *bellingeriana*) is an annual member of the meadowfoam family (Limnanthaceae). It lacks state or federal status, and is on the CNPS Rank 1B. The current status of this taxon is unclear. It is not included in *The Jepson Manual*, and the Jepson Interchange webpage indicates that it is not an excepted name for a taxon occurring in California, including it in *L. floccosa* subsp. *floccosa* (which is a CNPS Rank 2 species). *The Illustrated Flora of the Pacific States* (Abrams and Ferris, Volume 3, page 49) make *L. bellingeriana*

as synonym of *L. pumila*, which occurs in Oregon. This species is separated from other similar species by small petals, usually smaller than or equal to the sepals. According to the CNPS, Bellinger's meadowfoam occurs in mesic meadows and wetlands in Shasta County. It blooms from April to June. No members of the meadowfoam were found during surveys.

Four-angled spikerush (*Eleocharis quadrangulata*) is a relatively tall, perennial member of the sedge family (Cyperaceae). It lacks state or federal status. It is on the CNPS Rank 2, and is common in eastern North America. It also grows in Oregon. Four-angled spikerush has a square stem unlike most other species. It is taller and has thicker stems than the somewhat similar *E. pachycarpa*. It is found at scattered locations from Tehama and Butte Counties to Merced County, where is grows in marshes and pond margins. Four-angled spike rush fruits during the late summer and early winter. Only the common *E. macrostachya* was found to be present.

Henderson's bent grass (*Agrostis hendersonii*) is an annual member of the grass family (Poaceae). It has no state or federal status. It is on the CNPS Rank 3, which is a watch list for species needing more information. Henderson's bent grass is very similar to the more common *Agrostis microphylla*, but its fruiting bodies are larger and it is restricted to vernal pools and mesic areas. It is found at scattered locations from Shasta County to Merced County. It blooms in April and May. An unidentified perennial bent grass was observed in wetlands on the property. However, this unknown species is a dense-growing perennial and not an annual like Henderson's bent grass.

Northern clarkia (*Clarkia borealis* subsp. *borealis*) is an annual member of the evening-primrose family (Onagraceae). This species lacks state or federal status, but it is on the CNPS Rank 1B. Northern clarkia has unlobed petals, toothed claw, anthers extended beyond the petals, and an erect inflorescence recurved only at the tip. It grows in chaparral, woodland, and forest edges and openings in Trinity and Shasta Counties, and it blooms from June to September. Only the common and widespread *C. purpurea* was observed on the site.

Red Bluff Dwarf Rush (*Juncus leiospermus leiospermus*) is a small, annual member of the family Juncaceae. This species lacks state or federal status, but it is on the CNPS Rank 1B.1. It grows in vernally moist areas in chaparral, cismontane woodland, valley and foothill grasslands. This species blooms from March through May. Individuals of the plant were not detected on site during field surveys.

Silky cryptantha (*Cryptantha crinita*) is a rough-hairy, annual member of the borage family (Boraginaceae). It lacks state or federal status and is on the CNPS Rank 1B. Silky cryptantha has a very dense inflorescence and it typically only one nutlet that is finely granular on the back. It grows in gravelly streambeds in a variety of habitats, and is confined Shasta and Tehama Counties. It blooms in April and May. Several species of the similar genus *Plagiobothrys* were observed, but no members of the genus *Cryptantha* were found.

Wildlife

Due to the absence of suitable aquatic habitat, such as vernal pools, ponds, and perennial streams, several of the federal or state listed species identified in Table 1 were determined to have minimal to no potential for occurring on site. Species with a high federal or state status or those determined to have a reasonable potential for occurring on site are discussed below.

Vernal pool fairy shrimp *(Branchinecta lynchi)*, a federally threatened species, is a small crustacean that occurs in association with a variety of vernal pool habitats. This species has never been found in permanent bodies of water such as riverine habitats. While vernal pool fairy shrimp have been found in large vernal pools, individuals tend to occur in smaller pools often measuring less than 0.05 acres in area (USFWS 2005a). Vernal pool fairy shrimp are adapted to survive the seasonal flooding and drying of the pools in which they live. The average time of maturity of vernal pool fairy shrimp is 41 days, but can be as little as 18 days in warmer pools. After maturing, this species breeds and produces eggs that are dropped to the bottom of the pool. Adult fairy shrimp then die at the end of the wet season after the pool dries out. Remaining eggs are then protected throughout the dry season by a thick outer covering (USFWS 2005a).

The CNDDB (2012) documents eight occurrences of vernal pool fairy shrimp in the broader project region, with all being located east and southeast of Redding on the Millville and Stillwater plains areas. Suitable habitat for vernal pool crustaceans was not observed during field surveys associated with this assessment. Based on the absence of suitable habitat and distance from other known occurrences, vernal pool fairy shrimp is not expected to occur in the Study Area.

Vernal pool tadpole shrimp (*Lepidurus packardii*), a federally endangered species, is a small crustacean that inhabits a wide variety of ephemeral aquatic habitats of the Central Valley (USFWS 2005a). This species has been observed in stock ponds, vernal pools, grass bottom swales, mud-bottomed pools, and other seasonal wetlands containing clear to highly turbid water. It is known to occur in vernal pools ranging in size from seven square feet to 88 acres, with a variety of depths and volumes. The life history of this species is closely tied to the seasonal cycle of the vernal pool that it inhabits and similar to that of vernal pool fairy shrimp (refer to previous discussion). After winter rainwater fills the pool, the population is reestablished from cysts that lie dormant in the dry pool sediments. The species matures at approximately three to four weeks after the pools have been filled. Some cysts hatch immediately, while others remain dormant until the subsequent rainy season.

The CNDDB documents 19 occurrences of vernal pool tadpole shrimp in the broader project region with all being located east and southeast of Redding on the Millville and Stillwater plains areas (CNDDB 2012). Based on the lack of suitable habitat on site and distance from documented occurrences within the region, vernal pool tadpole shrimp is not expected to occur within the study area.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is a federal threatened species. Live elderberry shrubs (*Sambucus nigra caerulea*) are this borer's exclusive host plant. Adult valley elderberry longhorn beetles (VELB) emerge from pupation inside the wood of these shrubs in the spring as their flowers begin to open. Exit holes made by the emerging adults are distinctive small oval openings (approx. ¼-inch width). Adults eat elderberry foliage until about June when they mate. Females lay eggs in crevices in the bark before dying a short time later. Upon hatching the larvae then begin to tunnel into the tree where they will spend one to two years eating the interior wood, which is their sole food source.

The CNDDB documents only two occurrences of VELB within the project region, and the closest documented occurrence is from adjacent to the Sacramento River approximately nine miles south of the project site (CNDDB 2012). No individual elderberry shrubs were detected within the project site during field surveys conducted in 2005, 2006, and 2012, and therefore the

potential for occurrence of VELB was determined to be "unlikely". However, the presence or absence of elderberries within the site, and potential habitat for VELB, could not be conclusively determined due to the size of the project site and dense vegetative cover in some woodland areas, particularly to the south. Because some of the areas could not be thoroughly surveyed during previous surveys, there remains a remote possibility for isolated shrubs to occur on site.

Fall/Late Fall Run Chinook (*Oncorhynchus tshawytscha*) is the largest of the Pacific coast salmon and currently the most abundant of the Central Valley races of salmon. Adult fall run chinook salmon migrate from the ocean upstream into freshwater from July through December and spawn from early October through late December. Migration activity generally increases with seasonal rainstorms. Chinook salmon spawn in low-gradient portions of Central Valley rivers and major tributaries. Peak spawning activity occurs in October and November, although the timing varies from stream to stream. Spawning generally occurs in clean, loose gravel along swift, relatively shallow riffles. Embryo incubation occurs from October through March and juvenile rearing and smolt outmigration occurs from January through June. Timing of outmigration is dependent upon rainfall but the majority of fall-run chinook move downstream to the ocean during the first few months following emergence. After migrating to the ocean, chinook salmon generally mature at three to four years of age.

The CNDDB does not document fall/late fall run Chinook as occurring in the project region (CNDDB 2012). However, this race of salmon has historically been documented as occurring in downstream areas along Stillwater Creek. The National Marine Fisheries Service's (NMFS) *Historic Chinook Salmon Habitat Distribution Table* documents fall run Chinook as historically occurring in Stillwater Creek, to approximately 20 miles upstream of the confluence with the Sacramento River, in the vicinity of Mountain Gate (NMFS 2008). "CalFish" also maps Chinook as currently occurring in Stillwater Creek to approximately the Highway 44 crossing, just east of Redding (CalFish 2012). Provided that there are no impassable barriers downstream of the Study Area, there is some limited potential for individual fish to occur on site throughout the rainy season when flow is present and substantial within the larger on-site drainages.

Essential Fish Habitat (EFH) is defined as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity". The *Magnuson-Stevens Conservation and Management Act* requires that all Federal agencies consult with NMFS on all actions that may adversely affect EFH. As part of preparation of this assessment, NMFS maps were reviewed to determine if any on-site or downstream drainages (Stillwater Creek) are designated as EFH. Through review of appropriate maps for the various races of Chinook salmon in the region, including fall run Chinook, it was determined that none of the on-site drainages or downstream areas along Stillwater Creek are designated as EFH (NMFS 2012).

Central Valley Steelhead (*Oncorhynchus mykiss irideus*) was listed by NMFS in 1998 as threatened because it was determined to be in danger of extinction due to habitat destruction and degradation, as well as other factors. Steelhead is an anadromous form of rainbow trout that emigrates to sea and later returns to freshwater to spawn. Unlike Pacific salmon, not all steelhead die after spawning. Steelhead spawn in winter or early spring after salmon have typically spawned. They often require high water to provide access to upper watershed and spawning and rearing areas. Spawning occurs in clean, loose gravels and swift, shallow water. They generally prefer shallower stream depths and smaller gravel than salmon, but prefer similar water velocities. Embryos hatch in about 30 days and fry usually emerge about 4 to 6 weeks after hatching. Juvenile steelhead usually remain in freshwater for at least one year

before out-migrating to the ocean. While in freshwater, young steelhead are typically found in cool, fast-flowing permanent streams and rivers where riffles predominate over pools and there is suitable riparian and instream cover (NMFS 2009).

The CNDDB does not document Central Valley steelhead as occurring in the project region (CNDDB 2012). However, "CalFish" maps show steelhead as occurring in Stillwater Creek to approximately the Highway 229 crossing, northeast of Redding (CalFish 2012). Provided that there are no impassable barriers downstream of the Study Area, there is some limited potential for individual fish to occur on site during the rainy season when flow is suitable within the larger on-site drainages. Due to the ephemeral nature of the on-site streams, however, there is no summer rearing habitat for steelhead present on site.

Critical Habitat for California Central Valley Steelhead does not occur within the Study Area. However, the mainstem of Stillwater Creek, located downstream of the Study Area is currently designated as Critical Habitat for steelhead (Federal Register Sept. 2, 2005).

Shasta Salamander (*Hydromantes shastae*) is a state threatened species that is endemic to a small area near Shasta Lake, Shasta County. It is known to occur along cliff faces, vertical cavern walls, and in moist caves and rock cracks primarily associated with limestone outcrops. This small (4 to 6 inches total length), stocky salamander has a short tail, webbed feet and flattened body. It is generally dark reddish brown in color above and mottled with grayish green to tan specks. This species of salamander is active at night during fall, winter and spring rains. During the daytime it can be found under surface objects. Adults lay eggs in moist limestone shelters in late summer and brood eggs until hatching in late fall (Zeiner et al. 1988).

While the CNDDB lists numerous occurrences of Shasta salamander in the project region, primarily along rocky outcrops in the vicinity of Shasta Lake, the site lacks the specific habitat required for this species, consisting primarily of limestone caves and outcrops. Focused surveys for Shasta Salamander conducted on a large property directly west of the site in 2010, resulted in no detection of individuals of this species (North State Resources, Inc. 2010). Based on the lack of suitable habitat on site as well as the restricted occurrence of this species, no individuals of Shasta salamander would be expected to occur within the Study Area.

California red-legged frog (*Rana draytoni*), a federally threatened species and California species of special concern, historically ranged from Marin County southward to northern Baja California. This species is still locally abundant within portions of the San Francisco Bay area and along the Central Coast. Only isolated populations of California red-legged frog (CRLF) have been documented in the Sierra Nevada foothills region. Remaining aggregations within the foothills have become fragmented and nearly extirpated due to a variety of factors including habitat loss, expansions of exotic predators, and habitat fragmentation (USFWS 2012). CRLF prefers aquatic habitats with little or no flow, the presence of surface water to at least early June, surface water depths to at least 0.7 meters (2.3 feet), and the presence of fairly sturdy underwater supports such as cattails. The largest densities of this subspecies are typically associated with dense stands of overhanging willows and an intermixed fringe of sturdy emergent vegetation (USFWS 2005). CRLF typically breed from January to July, with peak breeding occurring in February. Eggs are attached to subsurface vegetation, and hatched tadpoles require 11 to 20 weeks to metamorphose.

There are currently no documented occurrences of CRLF within the broader project region (CNDDB 2012). The closest documented occurrences of CRLF are from Tehama County

(occurrence no. 121) in 1986. This occurrence is from approximately 24 miles west of Red Bluff along Sunflower Gulch. Other documented occurrences to the south of the project region are from Butte County in the Plumas and Lassen national forests. During previous surveys no suitable aquatic habitat for CRLF, consisting of permanent streams or pools with adjacent riparian cover, was observed within the study area. Based on the absence of suitable aquatic habitat and the absence of documented occurrences in the broader project region, this species is not expected to occur within the Mountain Gate at Shasta project site.

Foothill yellow-legged frog (*Rana boylei*) is found in partially shaded, shallow rocky streams in a variety of habitats throughout the foothills of the Sierra Nevada. This species is rarely found far from permanent water. Adults often bask on exposed rocks near streams and dive into the water to take refuge beneath rocks when disturbed. Typical diet consists of both aquatic and terrestrial invertebrates. Breeding commences from mid-March to May, depending on local water conditions. Eggs are deposited in clusters and attached to gravel or rocks in moving water near stream margins. Eggs hatch in about 5 days. Tadpoles reach a size of about 2 inches and transform in approximately 3 to 4 months. For aquatic habitats to be considered suitable, surface water must be present in scattered locations for at least 15 weeks to allow for metamorphosis (Zeiner et al. 1988).

The CNDDB documents numerous occurrences of FYLF within the broader project region. However, most of the occurrences are from the north along perennial rocky streams associated with Shasta Lake. No suitable aquatic habitat for FYLF, including perennial or near-perennial streams, was observed within the Study Area. Intermittent and ephemeral creeks observed throughout the site are known to be dry during the summer months of most years. FYLF prefers shallow, rocky, partly-shaded streams with perennial surface flow. Although some of the intermittent streams within the project site may retain small pockets of surface water into the summer months, occurrence of FYLF is considered unlikely to the marginal-quality of habitat available.

Western pond turtle (*Emys marmorata*), a California species of special concern, occurs in association with streams, rivers, and ponds containing suitable cover and basking sites. This subspecies can be associated with both permanent and ephemeral water sources, including perennial and intermittent streams. Suitable basking sites along streams or ponds include partially submerged logs, rocks, mats of floating vegetation, or open streambanks. Suitable upland habitat, such as sandy banks or grassy fields, located adjacent to the aquatic habitat is required for egg-laying. Nesting may take place in a variety of soil types from loose sandy soils to compact soils, and in a variety of habitat types. Eggs are laid from March to August, depending on local climate and water conditions, and incubation occurs for 73 to 80 days (Zeiner et al. 1988).

Potential habitat for western pond turtle is very limited within the project site due to the absence of perennial streams and ponds. Streams and associated pools throughout the site are not expected to retain surface water throughout the dry months during most years. The only areas that have potential to support pond turtles on a periodic basis are the lower most reaches of Moody Creek in areas that retain surface water for longer durations.

Purple martin (*Progne subis*) is an uncommon to rare, local summer resident in low-elevation woodlands of California (Zeiner et al. 1990). They occur in a variety of woodlands, including oak woodland and riparian communities, as well as in low-elevation coniferous forests. Nesting usually takes place in tall, old trees or snags located near water. Nests are constructed

in old woodpecker cavities, but are occasionally constructed in man-made structures such as culverts or under bridges. Purple martins arrive from South America in late March. Breeding then takes place from April to August, with peak activity in June. Depending on site availability, purple martins will sometimes nest colonially. Young of this species fledge at approximately 24 to 31 days (Zeiner et al. 1990).

The CNDDB documents four somewhat recent occurrences of purple martin in the region surrounding the project site. All of the occurrences are associated with blue oak-foothill pine woodland near Shasta Lake. The project site contains marginal-quality nesting habitat in the form of foothill woodland with scattered snags. Based on the proximity to other somewhat recently documented nesting activity in 2007 and the presence of suitable habitat, it is expected that purple martin has a reasonable potential for nesting on site.

RECOMMENDATIONS

Waters of the United States

1. The study area contains waters of the United States. Activities that affect these waters would require a permit from the U.S. Army Corps of Engineers pursuant to Section 404 of the federal Clean Water Act. The project would also need to obtain a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act.

Streams, Pond, and Riparian Habitat

1. Impacts to the bed, bank, or channel of streams or ponds would require a Streambed Alteration Agreement with the California Department of Fish and Game (CDFG). Impacts to the riparian habitat may require a Streambed Alteration Agreement with the CDFG.

Tree Conservation

1. All trees except gray pine (*Pinus sabiniana*), having at least one trunk of ten inches or more DBH (diameter at breast height) are considered protected trees. Subdivisions and other development projects shall be designed to the extent possible to minimize destruction and damage to protected trees. If a protected tree must be removed from a property to facilitate development allowed by zoning, replacement trees shall be provided to compensate for the loss (Shasta Lake Tree Ordinance Chapter 12.36 Tree Conservation).

Special-Status Plants

1. Floristic botanical surveys were conducted during the spring and summer of 2006. These surveys did not locate any special status plant species. Because of the time since the survey, we recommend preconstruction rare plant surveys for each phase of the project as the property develops. There is no need to conduct additional surveys prior to that time.

Special-Status Wildlife

1. While the project site does not provide suitable nesting habitat for any special-status raptors, woodland areas throughout the site are likely to support nesting of other

raptors known from the region, including a variety of hawks and owls. If tree removal activities take place during the associated breeding/nesting season for raptors (typically March 1 through August 31), disturbance of nesting activities could occur. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5. To avoid take of active raptor nests, pre-construction surveys should be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated by CDFG to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal could then proceed.

2. The potential for occurrence of Valley Elderberry Longhorn Beetle (VELB) within the project site was determined to be unlikely based on the lack of observation of elderberry shrubs during numerous field surveys associated with this study (refer to Appendix D). However, the presence or absence of elderberries cannot be conclusively determined due to the size of the project site and dense vegetative cover in woodland areas, particularly in the southern portion of the site. To avoid disturbance of potential habitat for VELB that may occur in dense woodland areas of the site, pre-construction surveys for elderberries should be conducted prior to grading activities. All surveys should occur prior to initiation of any ground disturbance associated with each phase of development. All elderberries with stems at ground level greater than 1 inch diameter are considered potential habitat for VELB and are protected by the Federal Endangered Species Act. Impacts to these shrubs would require a take permit from the United States Fish and Wildlife Service.

3. The potential for occurrence of anadromous fish within the Study Area is considered to be low due to the seasonal nature of the on-site streams, the absence of surface water for a substantial portion of the year, and marginal quality of instream habitat available. However, because fall run Chinook and steelhead are known to occur in the watershed, individuals may venture into on-site drainages throughout the rainy season, provided there are no impassable barriers downstream of the site. Prior to implementation of project activities in the vicinity of on-site drainages, particularly along Moody and Rancheria creeks, NMFS and CDFG should be consulted to determine appropriate measures for avoiding disturbance of potential seasonal habitat for these species.

4. Based on review of NMFS maps it was determined that no areas designated as Essential Fish Habitat for Chinook salmon occur within the Study Area or along the mainstem of Stillwater Creek. Therefore project activities would not result in any direct disturbance of areas qualifying as EFH. The mainstem of Stillwater Creek located east of the Study Area is, however, designated as Critical Habitat for California Central Valley Steelhead and a small portion of the lower-most reach of Stillwater Creek is designated as Critical Habitat for Central Valley Spring-run Chinook Salmon (Federal Register September 2, 2005; NMFS 2009).

4. Based on the presence of suitable habitat and the occurrence of other documented nesting activity within the region, purple martin is expected to have a reasonable potential for nesting in isolated snags and tree cavities within the project site. If construction activities take place at any time during the associated breeding/nesting

season for this species (approximately April through August), disturbance of nesting activities could occur. To avoid direct disturbance of any nesting activity, a pre-construction survey should be conducted by a qualified biologist if ground disturbance activities will take place during the identified nesting season. If purple martins are found to be actively nesting, removal of the identified tree or snag should be avoided until nesting is completed and after the young have fledged. If disturbance of active nests cannot be avoided, then consultation should be initiated by CDFG.

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Appendix A.
Plant Species Observed Within the Mountain Gate at Shasta Study Area

Mountain Gate Meadows Plants Observed

Common Name	Taxon
Agoseris	*Agoseris sp.*
Annual beard grass	*Polypogon monspeliensis*
Annual bluegrass	*Poa annua*
Annual hairgrass	*Deschampsia danthonioides*
Annual knawel	*Scleranthus annuus annuus*
Aquatic buttercup	*Ranunculus aquatilus*
Arroyo willow	*Salix lasiolepis*
Baltic rush	*Juncus balticus*
Bent grass	*Agrostis sp.*
Bermudagrass	*Cynodon dactylon*
Big pod lupine	*Lupinus pachylobus*
Bindweed	*Convolvulus arvensis*
Black locust	*Robinia pseudoacacia*
Bladder parsnip	*Lomatium utriculatum*
Blinks	*Montia fontana*
Blue oak	*Quercus douglasii*
Blue wildrye	*Elymus glaucus*
Blue-eyed grass	*Sisyrinchium bellum*
Bog trefoil	*Lotus pinnatus*
Bractless hedge-hyssop	*Gratiola ebracteata*
Broad-leaf filaree	*Erodium botrys*
Broadleaf pepperweed	*Lepidium latifolium*
Brome	*Bromus sp.*
Brome fescue	*Vulpia bromoides*
Brook spike-primrose	*Epilobium torreyi*
Buck brush	*Ceanothus cuneatus cuneatus*
Bugle hedge-nettle	*Stachys ajugoides ajugoides*
Bulbous bluegrass	*Poa bulbosa vivipara*
Bush lupine	*Lupinus albifrons collinus*
California black oak	*Quercus kelloggii*
California blackberry	*Rubus ursinus*
California brickle-bush	*Brickellia californica*
California buckeye	*Aesculus californica*
California burclover	*Medicago polymorpha*
California button willow	*Cephalanthus occidentalis californicus*
California coffeeberry	*Frangula californica californica*
California goldenrod	*Solidago velutina californica*
California man-root	*Marah fabaceus*

Common Name	Taxon
California melic	*Melica californica*
California pipevine	*Aristolochia californica*
California thistle	*Cirsium occidentale californicum*
California wild grape	*Vitis californica*
California willow dock	*Rumex californicus*
Califronia rose	*Rosa californica*
Cascara sagrada	*Frangula purshiana purshiana*
Chaparral honeysuckle	*Lonicera interrupta*
Cheat grass	*Bromus tectorum*
Chicory	*Cichorium intybus*
Ciliate clover	*Trifolium ciliolatum*
Clasping onion	*Allium amplectens*
Climbing bedstraw	*Galium porrigens tenue*
Clustered field-sedge	*Carex praegracilis*
Common chickweed	*Stellaria media*
Common dandelion	*Taraxacum officinale*
Common fiddlneck	*Amsinckia menziesii*
Common groundsel	*Senecio vulgaris*
Common knotweed	*Polygonum aviculare*
Common madia	*Madia elegans*
Common madia	*Madia elegans vernalis*
Common monkeyflower	*Mimulus guttatus*
Common rush	*Juncus patens*
Common snowberry	*Symphoricarpos albus laevigatus*
Common timothy	*Phleum pratense*
Common velvet grass	*Holcus lanatus*
Common vetch	*Vicia sativa*
Common wood-rush	*Luzula comosa*
Cottontop	*Micropus californicus californicus*
Creeping snowberry	*Symphoricarpos mollis*
Creeping spikerush	*Eleocharis macrostachya*
Curly dock	*Rumex crispus*
Cut-leaf geranium	*Geranium dissectum*
Dallis grass	*Paspalum dilatatum*
Dense-flower spike-primrose	*Epilobium densiflorum*
Dotted smartweed	*Persicaria punctata*
Double-horned downingia	*Downingia bicornuta bicornuta*
Dove's-foot geranium	*Geranium molle*
Downy navarretia	*Navarretia pubescens*
Duckweed	*Lemna sp.*

Common Name	Taxon
English plantain	*Plantago lanceolata*
Few-seed bitter cress	*Cardamine oligosperma*
Fiddle dock	*Rumex pulcher*
Field burrweed	*Soliva sessilis*
Field hedge-parsley	*Torilis arvensis*
Field madder	*Sherardia arvensis*
Fig	*Ficus carica*
Fitch's spikeweed	*Centromadia fitchii*
Flax	*Linum bienne*
Flowering quillwort	*Lilaea scilloides*
Foothill pine	*Pinus sabiniana*
Foxtail barley	*Hordeum murinum*
Fremont cottonwood	*Populus fremontii fremontii*
Fryingpan poppy	*Eschscholzia lobbii*
Gamble weed	*Sanicula crassicaulis*
Glandular cinquefoil	*Potentilla glandulosa*
Glandular hareleaf	*Lagophylla glandulosa*
Goose grass	*Galium aparine*
Grass-pink	*Petrorhagia dubia*
Hairy willow-herb	*Epilobium ciliatum*
Hard-stem tule	*Schoenoplectus acutus occidentalis*
Hartweg's odontostomum	*Odontostomum hartwegii*
Hartweg's tauschia	*Tauschia hartwegii*
Harvest brodiaea	*Brodiaea coronaria coronaria*
Hedge mustard	*Sisymbrium officinale*
Hedgehog dogtail	*Cynosurus echinatus*
Hill lotus	*Lotus micranthus*
Himalayan blackberry	*Rubus discolor*
Hoary coffeeberry	*Frangula californica tomentella*
Hollyleaf redberry	*Rhamnus ilicifolia*
Horseweed	*Conyza canadensis*
Hyssop loosestrife	*Lythrum hyssopifolia*
Indian chickweed	*Mollugo verticillata*
Indian milkweed	*Asclepias eriocarpa*
Interior live oak	*Quercus wislizeni wislizeni*
Iris-leaf rush	*Juncus xiphioides*
Italian ryegrass	*Lolium multiflorum*
Italian thistle	*Carduus pycnocephalus*
Jointed charlock	*Raphanus raphanistrum*
Jointed coyote-thistle	*Eryngium articulatum*

Common Name	Taxon
June centaury	*Zeltnera muehlenbergii*
Keckiella	*Keckiella lemmonii*
Kellogg's yampah	*Perideridia kelloggii*
Klamathweed	*Hypericum perforatum*
Lacepod	*Thysanocarpus curvipes*
Larger water-starwort	*Callitriche heterophylla heterophylla*
Lemmon's ceanothus	*Ceanothus lemmonii*
Little hop clover	*Trifolium dubium*
Mayweed	*Anthemis cotula*
Meadow baby blue-eyes	*Nemophila pedunculata*
Meadow-rue	*Thalictrum fendleri polycarpum*
Mediterranean barley	*Hordeum marinum gussoneanum*
Medusahead	*Taeniatherum caput-medusae*
Mexican rush	*Juncus mexicanus*
Miner's lettuce	*Claytonia parviflora*
Miniature lupine	*Lupinus bicolor*
Monardella	*Monardella sp.*
Morning-glory	*Calystegia occidentalis*
Mosquito bills	*Dodecatheon hendersonii*
Mossy pygmy-weed	*Crassula tillaea*
Moth mullein	*Verbascum blattaria*
Mouse-ear chickweed	*Cerastium glomeratum*
Narrowleaf cottonrose	*Logfia gallica*
Narrow-leaf milkweed	*Asclepias fascicularis*
Narrowleaf mules ears	*Wyethia angustifolia*
Narrow-leaved soap plant	*Chlorogalum angustifolium*
Narrow-leaved willow	*Salix exigua*
Needle-leaved navarretia	*Navarretia intertexta intertexta*
Nightshade	*Solanum parishii*
Nit grass	*Gastridium phleoides*
Nude buckwheat	*Eriogonum nudum*
Oak mistletoe	*Phoradendron serotinum tomentosum*
Oldfield three-awn	*Aristida oligantha*
Oracle oak	*Quercus xmorehus*
Orchard grass	*Dactylis glomerata*
Pacific bluegrass	*Poa secunda secunda*
Pacific ponderosa pine	*Pinus ponderosa*
Pennyroyal	*Mentha pulegium*
Phacelia	*Phacelia hastata hastata*
Pineapple-weed	*Matricaria discoidea*

Common Name	Taxon
Pin-point clover	*Trifolium gracilentum gracilentum*
Plantain	*Plantago erecta*
Pointed rush	*Juncus oxymeris*
Prickly lettuce	*Lactuca serriola*
Prickly sow-thistle	*Sonchus asper*
Prunus	*Prunus sp.*
Purple falsebrome	*Brachypodium distachyon*
Purple milkweed	*Asclepias cordifolia*
Purple needlegrass	*Nassella pulchra*
Purple sanicle	*Sanicula bipinnatifida*
Pussy ears	*Calochortus tolmiei*
Quaking grass	*Briza maxima*
Rattail fescue	*Vulpia myuros*
Rattlesnake weed	*Daucus pusillus*
Red brome	*Bromus madritensis rubens*
Red willow	*Salix laevigata*
Red-stem filaree	*Erodium cicutarium*
Rigid hedge-nettle	*Stachys ajugoides rigida*
Ripgut grass	*Bromus diandrus*
Rose clover	*Trifolium hirtum*
Rough cat's-ear	*Hypochaeris radicata*
Ruby sand-spurrey	*Spergularia rubra*
Rush	*Juncus sp.*
Rusty popcornflower	*Plagiobothrys nothofulvus*
Scarlet pimpernel	*Anagalis arvensis*
Sculptured popcornflower	*Plagiobothrys glyptocarpus glyptocar*
Sedges	*Carex spp.*
Self-heal	*Prunella vulgaris lanceolata*
Sheep sorrel	*Rumex acetosella*
Shining peppergrass	*Lepidium nitidum nitidum*
Short-fruited stork's-bill	*Erodium brachycarpum*
Silver European hairgrass	*Aira caryophyllea*
Skeleton weed	*Chondrilla juncea*
Skullcap	*Scutellaria siphocampyloides*
Slender rush	*Juncus occidentalis*
Slender tarweed	*Madia gracilis*
Slender wild oat	*Avena barbata*
Small quaking grass	*Briza minor*
Small-headed clover	*Trifolium microcephalum*
Smartweed	*Persicaria sp.*

Common Name	Taxon
Smooth brome	*Bromus inermis inermis*
Smooth cat's-ear	*Hypochaeris glabra*
Snowdrop bush	*Styrax redivivus*
Soap plant	*Chlorogalum pomeridianum pomeridi*
Soft chess	*Bromus hordeaceus*
Sonoma hedge-nettle	*Stachys stricta*
Spanish brome	*Bromus madritensis madritensis*
Spanish-clover	*Lotus purshianus purshianus*
Spike-moss	*Selaginella sp.*
Spiny-fruit buttercup	*Ranunculus muricatus*
Sticky calycadenia	*Calycadenia multiglandulosa*
Stipitate popcornflower	*Plagiobothrys stipitatus micranthus*
Straight-beak buttercup	*Ranunculus orthorhynchus bloomeri*
Subterranean clover	*Trifolium subterraneum*
Summer cottonweed	*Epilobium brachycarpum*
Superb mariposa lily	*Calochortus superbus*
Tall flatsedge	*Cyperus eragrostis*
Threadstem madia	*Madia exigua*
Toad rush	*Juncus bufonius*
Tomcat clover	*Trifolium willdenovii*
Toyon	*Heteromeles arbutifolia*
Triphysaria	*Triphysaria versicolor faucibarbata*
Tumble pigweed	*Amaranthus albus*
Turkey mullein	*Croton setigerus*
Valley oak	*Quercus lobata*
Valley spurge	*Chamaesyce ocellata ocellata*
Venus' needle	*Scandix pecten-veneris*
Vernal grass	*Anthoxanthum aristatum*
Vernal pool buttercup	*Ranunculus bonariensis trisepalus*
Vinegar weed	*Trichostema lanceolatum*
Wall bedstraw	*Galium parisiense*
Water cress	*Nasturtium officinale*
Water plantain	*Alisma plantago-aquatica*
Water-primrose	*Ludwigia peploides*
Watson's man-root	*Marah watsonii*
Western buttercup	*Ranunculus occidentalis*
Western clematis	*Clematis ligusticifolia*
Western dwarf mistletoe	*Arceuthobium campylopodum*
Western mannagrass	*Glyceria x occidentalis*
Western marsh cudweed	*Gnaphalium palustre*

Common Name	Taxon
Western poison-oak	*Toxicodendron diversilobum*
Western redbud	*Cercis occidentalis*
White brodiaea	*Triteleia hyacinthina*
White clover	*Trifolium repens*
White nemophila	*Nemophila heterophylla*
Whiteleaf manzanita	*Arctostaphylos viscida*
White-tip clover	*Trifolium variegatum*
Wild hyacinth	*Dichelostemma multiflorum*
Wild mustard	*Sinapis arvensis*
Wild onion	*Allium sp.*
Wild pea	*Lathyrus sp.*
Wild-pea	*Lathyrus angulatus*
Wild-pea	*Lathyrus cicera*
Willow	*Salix sp.*
Willow dock	*Rumex salicifolius*
Winecup clarkia	*Clarkia purpurea*
Winged water-starwort	*Callitriche marginata*
Winter vetch	*Vicia villosa*
Wintercress	*Barbarea orthoceras*
Witchgrass	*Panicum capillare*
Woolly mullein	*Verbascum thapsus*
Woolly sunflower	*Eriophyllum lanatum*
Woolly trefoil	*Lotus humistratus*
Yampah	*Perideridia gairdneri borealis*
Yellow glandweed	*Parentucellia viscosa*
Yellow salsify	*Tragopogon dubius*
Yellow starthistle	*Centaurea solstitialis*

Appendix B.
Wildlife Species Observed Within the Mountain Gate at Shasta Study Area

Appendix B

Animals Observed- Mountain Gate Meadows

Amphibians

Sierran treefrog	*Pseudacris sierra*

Reptiles

Western fence lizard	*Sceloporus occidentalis*

Birds

Turkey vulture	*Cathartes aura*
Sharp-shinned hawk	*Accipiter striatus*
Red-tailed hawk	*Buteo jamaicensis*
California quail	*Callipepla californica*
Mourning dove	*Zenaida macroura*
Anna's hummingbird	*Calypte anna*
Acorn woodpecker	*Melanerpes formicivorus*
Northern flicker	*Colaptes auratus*
Black phoebe	*Sayornis nigricans*
Western kingbird	*Tyrannus verticalis*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Barn swallow	*Hirundo rustica*
Oak titmouse	*Baeolophus inornatus*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
Yellow-rumped warbler	*Dendroica coronata*
Spotted towhee	*Pipilo maculatus*
California towhee	*Pipilo crissalis*
Song sparrow	*Melospiza melodia*
White-crowned sparrow	*Zonotrichia leucophrys*
Dark-eyed junco	*Junco hyemalis*
Western meadowlark	*Sturnella neglecta*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*
House sparrow	*Passer domesticus*

Mammals

Western gray squirrel	*Sciurus griseus*
Black-tailed hare	*Lepus californicus*
California ground squirrel	*Spermophilus beecheyi*
Botta's pocket gopher	*Thomomys bottae*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*
Mule deer	*Odocoileus hemionus*

Appendix C.
Special-Status Plant Species Known to Occur in the Region of the Mountain Gate at Shasta Study Area

Appendix C

Special Status Plants Known to Occur in the Region of Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae				
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: List 2.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	None. This species prefers shady, north-facing slopes.
Asteraceae (Compos				
Ageratina shastensis Shasta ageratina	Fed: - State: - CNPS: List 4.	June-September	Chaparral; lover montane coniferous forest [carbonate].	
Boraginaceae				
Cryptantha crinita Silky cryptantha	Fed: - State: - CNPS: List 1B.2	April-May	Cismontane woodland; lower montane coniferous forest; riparian forest; riparian woodland; valley and foothill grassland; [gravelly streambeds].	Possible. Suitable habitat is present in two o fthe stream channels.
Campanulaceae				
Legenere limosa Legenere	Fed: - State: - CNPS: List 1B.1	April-June	Vernal pools.	None. The site does not have deep vernal pools.
Caryophyllaceae				
Paronychia ahartii Ahart's paronychia	Fed: - State: - CNPS: List 1B.1	April-June	Cismontane woodland; valley and foothill grassland; vernal pools.	Unlikely. Marginal habitat is present.
Fabaceae (Legumin				
Lathyrus sulphureus argillaceus Dubious pea	Fed: - State: - CNPS: List 3.	April-April	Cismontane woodland; lower montane coniferous forest; upper montane coniferous forest.	

Appendix C

Special Status Plants Known to Occur in the Region of Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Juncaceae				
Juncus leiospermus leiospermus Red Bluff dwarf rush	Fed: - State: - CNPS: List 1B.1	March-May	Chaparral; cismontane woodland; valley and foothill grassland; vernal pools; [vernally mesic].	Possible. Suitable habitat is present.
Liliaceae				
Fritillaria eastwoodiae Butte County fritillary	Fed: - State: - CNPS: List 3.2	March-May	Chaparral; cismontane woodland; lower montane coniferous forest (openings); [sometimes serpentinite].	
Limnanthaceae				
Limnanthes floccosa bellingeriana Bellinger's meadowfoam	Fed: - State: - CNPS: List 1B.2	April-June	Cismontane woodland; meadows; [mesic].	Possible. Could occur in wetlands.
Limnanthes floccosa floccosa Woolly meadowfoam	Fed: - State: - CNPS: List 2.	March-June	Cismontane woodland; valley and foothill grassland; [vernally mesic].	
Onagraceae				
Clarkia borealis borealis Northern clarkia	Fed: - State: - CNPS: List 1B.3	June-September	Chaparral; cismontane woodland; lower montane coniferous forest.	Possible. Suitable habitat is present.
Poaceae (Graminea				
Agrostis hendersonii Henderson's bent grass	Fed: - State: - CNPS: List 3.2	April-May	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Very marginal habitat exists on the site.

Appendix C

Special Status Plants Known to Occur in the Region of Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Orcuttia tenuis Slender Orcutt grass	Fed: FT State: CE CNPS: List 1B.1	May-July	Vernal pools.	None. No deep vernal pools are present.
Rosaceae				
Neviusia cliftonii Shasta snow-wreath	Fed: - State: - CNPS: List 1B.2	May-May	Lower montane coniferous forest (carbonate).	None. No suitable habitat is present.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D.
Special-Status Wildlife Species Known to Occur in the Region of the Mountain Gate at Shasta Study Area

Appendix D

Special Status Animals Known to Occur in the Region of Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other: -	Vernal pools and other temporary bodies of water in southern and Central Valley of California. Most common in smaller grass or mud bottomed swales or basalt flow depression pools in unplowed grasslands.	None. No suitable habitat (vernal pools) present on site. Closest documented occurrences are from east of Redding, in the Palo Cedro/Millville area.
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: FE State: - Other: -	Found in vernal pools in the Central Valley of California and in the San Francisco Bay area. Inhabits vernal pools with clear to highly turbid water.	None. No suitable habitat (vernal pools) present on site. Closest documented occurrences are from east of Redding, in the Palo Cedro/Millville area.
Shasta crayfish *Pacifastacus fortis*	Fed: FE State: FE Other: -	Cool, clear waters of spring-fed lakes, rivers, and streams with volcanic rubble substrates. Only in the Pit River, Fall River, and Hat Creek watersheds.	None. Occurs in Pit River Basin and two tributary systems. No suitable aquatic habitat present on site. Site located outside of species' range.
Insects			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: FT State: - Other: *	Requires host plant, elderberry (Sambucus spp.) for most of its life cycle. Shrubs must have stem diameters at ground level of 1.0 inch or greater and shrubs must be found less than 3,000 feet in elevation.Typically riparian and upland associated.	Unlikely. No suitable habitat (elderberry plants) observed on site. Closest known occurrence is from the northern side of Redding, in the riparian corridor along the Sacramento River.
Fish			
Steelhead, Central Valley ESU *Oncorhynchus mykiss irideus*	Fed: FT State: - Other: -	Occurs below man-made impassable barriers in the Sacramento and San Joaquin rivers and tributaries. Adults migrate from ocean to natal freshwater streams to spawn. Yuba River has essentially the only remaining wild steelhead fishery in Central Valley.	Possible. Known from Stillwater Creek watershed. Could occur on seasonal basis in on-site drainages if no impassable barriers located downstream
Chinook salmon - Central Valley spring-run ES *Oncorhynchus tshawytscha*	Fed: FT State: CT Other: *	Occurs in water bodies with cool, fast-flowing water and gravel suitable for spawning. Found primarily in 4 tributaries of the Sacramento River: Butte Creek, Big Chico Creek, Deer Creek, and Mill Creek.	None. No suitable aquatic habitat present on site. Known from the main stem of the Sacramento River, below Keswick Dam, and major tributaries.
Chinook salmon - Central Valley fall/late fall-r *Oncorhynchus tshawytscha*	Fed: FC State: CSC Other: *	Spawns in the Sacramento and San Joaquin Rivers and their tributaries January thru March/April and typically on the valley floor and lower foothills. Spawning typically follows arrival at natal stream, migration begins in October.	Possible. Historically has occurred in Stillwater Creek watershed. Could occur on seasonal basis in on site drainages with sufficient flow.

Appendix D

Special Status Animals Known to Occur in the Region of Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site
Chinook salmon - Sacramento winter run ESU *Oncorhynchus tshawytscha*	Fed: FE State: CE Other: -	One of 4 runs that spawns in upper Sacramento River and Battle Creek. They return to the upper Sacramento River in the winter but delay spawning until the spring and summer.	None. No suitable aquatic habitat present on site. Known only from the main stem of the Sacramento River, downstream of Keswick Dam.
Amphibians			
Shasta salamander *Hydromantes shastae*	Fed: - State: CT Other:	Cool, moist ravines and valleys, usually near limestone outcrops and quarries.	Unlikely. No suitable habitat observed on site. Primarily associated with limestone fissures and caverns. Isolated populations known from the east and north of the site, near Shasta Lake.
California red-legged frog *Rana draytonii*	Fed: FT State: CSC Other: -	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	None. No suitable aquatic habitat present on site. No documented occurrences in project region or in Shasta County. Closest known occurrence is from Tehama County.
Foothill yellow-legged frog *Rana boylii*	Fed: - State: CSC Other: *	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. No suitable aquatic habitat (permanent or near-permanent surface water along rocky streams) observed on site.
Reptiles			
Northwestern pond turtle *Actinemys marmorata marmorata*	Fed: - State: CSC Other: *	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires suitable basking sites and upland habitat for egg laying.	Unlikely. No suitable aquatic habitat (perennial surface water and deep pools) present within project site. May occur on occasion in lower reaches of Moody Creek.
Birds			
Bald eagle *Haliaeetus leucocephalus*	Fed: - State: CE Other: CFP	Occurs along shorelines, lake margins, and rivers. Nests in large, old-growth or dominant trees with open branches.	Unlikely. No suitable habitat (large bodies of water with adjacent tall trees) present on site. Species occurring to the north in association with Shasta Lake may periodically venture into site.
American peregrine falcon *Falco peregrinus anatum*	Fed: - State: CE Other: *	Nests on cliffs, banks, dunes, mounds, and tall man-made structures.	Unlikely. No suitable nesting habitat located within project site. May occasionally venture through project site.

Appendix D

Special Status Animals Known to Occur in the Region of Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site
Northern spotted owl *Strix occidentalis caurina*	Fed: FT State: CSC Other: -	Dense, old growth, multi-layered, mixed conifer, redwood, and Douglas fir habitats with large trees and snags. Sea level to 7,600 feet.	None. Requires dense, old-growth conifer forests with multi-layered anopy for roosting. No suitable roosting habitat present on site.
Purple martin *Progne subis*	Fed: - State: CSC Other: *	Breeds in riparian woodland, oak woodland, open coniferous forests. Secondary cavity nester. Requires nest sites close to open foraging areas of water or land.	Possible. Potential nesting habitat located in woodland areas throughout site. Several documented occurrences north of site in vicinity of Shasta Lake.
Bank swallow *Riparia riparia*	Fed: - State: CT Other: *	Colonial nester near riparian and oher lowland habitats. Requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, and lakes.	Unlikely. No suitable nesting habitat (vertical banks along streams or rivers) observed within project site.
Mammals			
Spotted bat *Euderma maculatum*	Fed: - State: CSC Other: -	Inhabits a variety of habitats from arid deserts and grasslands to mixed conifer forests, prefers open pine forests set in rocky terrain. Females may favor ponderosa pine forests during reproduction. Forages in open habitat.	Unlikely. No suitable roosting habitat present on site. May periodically venture through project site when foraging.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Fed: - State: CSC Other: *	Found in a variety of habitats. Most common in mesic sites with forest or woodland component. Roosting and maternity sites in caves, mines, lava tubes, tunnels, and buildings. Gleans insects from brush or trees and feeds along habitat edges.	Unlikely. No suitable roosting habitat present on site. May periodically venture through project site when foraging.
Pacific fisher *Martes pennanti pacifica*	Fed: FC State: CSC Other: *	Occurs in intermediate to large-tree stage coniferous forests and riparian woodlands with a high percent level of canopy closure.	Unlikely. No suitable forested habitat present on site. Known to occur at higher elevations in large areas of mature, dense coniferous forest.

Appendix D

Special Status Animals Known to Occur in the Region of Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site

***Status**

Federal:	State:	Other:
FE - Federal Endangered	CE - California Endangered	Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.
FT - Federal Threatened	CT - California Threatened	
FPE - Federal Proposed Endangered	CR - California Rare	
FPT - Federal Proposed Threatened	CC - California Candidate	
FC - Federal Candidate	CFP - California Fully Protected	
FPD - Federal Proposed for Delisting	CSC - California Species of Special Concern	WL - CDFG Watch List

Appendix 4.6-2

BIOLOGICAL RESOURCE ASSESSMENT, September 2006

BIOLOGICAL RESOURCE ASSESSMENT
FOR THE
±583-ACRE MOUNTAIN GATE MEADOWS PROJECT SITE

CITY OF SHASTA LAKE, SHASTA COUNTY, CALIFORNIA

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September 25, 2006

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Appendix A. Plant Species Occurring on the Mountain Gate Meadows Property, April 2004-June 2006
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BIOLOGICAL RESOURCE ASSESSMENT
FOR THE
±583-ACRE MOUNTAIN GATE MEADOWS PROJECT SITE

INTRODUCTION

In 2004 and 2005, North Fork Associates conducted a biological constraints analysis for the ±583-acre Mountain Gate Meadows project site in the city of Shasta Lake, Shasta County, California. This Biological Resource Assessment is a more in-depth update of the constraints analysis, and is based in part on the results of additional field surveys.

The project site is located approximately 8 miles north of Redding and just north of the city of Shasta Lake. It is bounded on the east by Interstate 5 and to the south and southwest by residential and rural residential housing. The north and northwest boundaries adjoin undeveloped land. The project site is situated in Sections 20 and 29 of Township 33 north and Range 4 west on the Project City, California 7.5-minute USGS topographic quadrangles (Figure 1). The latitude and longitude for the approximate center of the project site is 40°41'53" north and 122°20'53" west.

The project site is situated in the foothills of the northwest Coast Range at elevations between 800 and 950 feet above sea level. The majority of the property is foothill woodland but a large component of upland grassland and seasonal wetland occurs on the eastern part of the site. The project site is undeveloped and contains numerous dirt roads and trails. Much of the site is regularly used by local OHV riders. Figure 2 is a 2004 aerial showing the site and surrounding land uses.

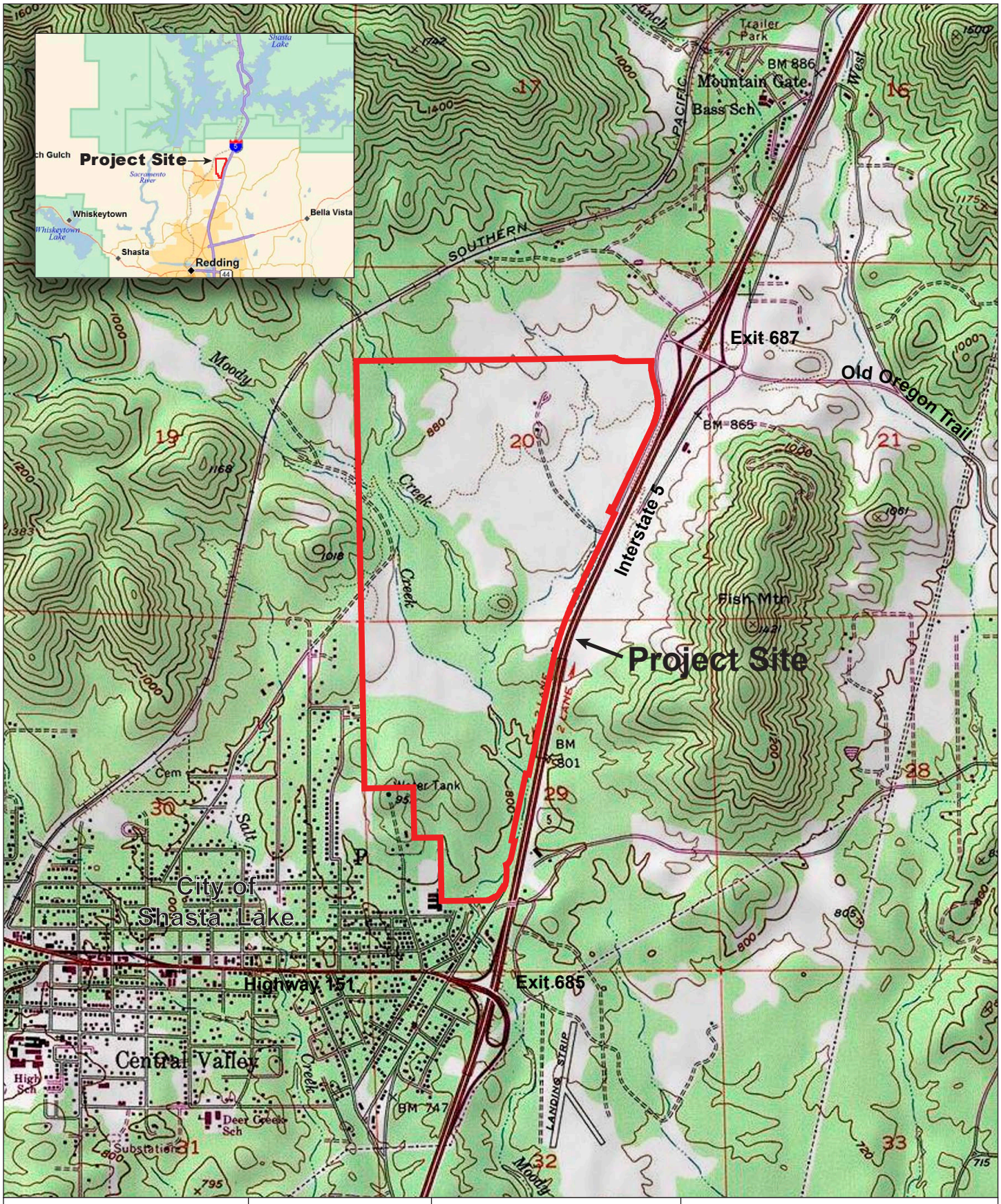
The purpose of this resource is to update the December 2005 constraints assessment and provide more detail about the biological resources on the site, including a more detailed discussion of special status plants and potential for special status wildlife species to occur.

METHODS

Literature and Information Review

Information used in the initial evaluation of the project site included several color aerial photographs (July 1999, 2002, and April 2004), USGS quadrangle maps for the area, the Geologic Map of California, Redding Sheet (California Division of Mines and Geology 1962), and the Shasta County Area soil map (USDA, SCS 1974).

The following publications were reviewed to provide information on life history, habitat requirements, distribution, and conservation status of regionally occurring plant and animal species: *California's Wildlife*, Volumes I-III (Zeiner et al. 1988, 1990a, 1990b), *A Field Guide to Western Reptiles and Amphibians* (Stebbins 1985), *The Peterson Field Guide to the Mammals of North America* (Burt and Grossenheider 1980), *The Sibley Field Guide to Birds of Western North America* (Sibley 2003), *The Peterson Field Guide to Hawks of North America* (Clark and Wheeler 1987), *Jepson Manual; Higher Plants of California* (Hickman 1993), *California Vegetation* (Holland and Keil 1995), *Birds of Northern California* (Fix and Bezener 2000), and *Mammals of the Pacific States* (Ingles 1965).



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N

0 1000 2000

Approximate scale in feet

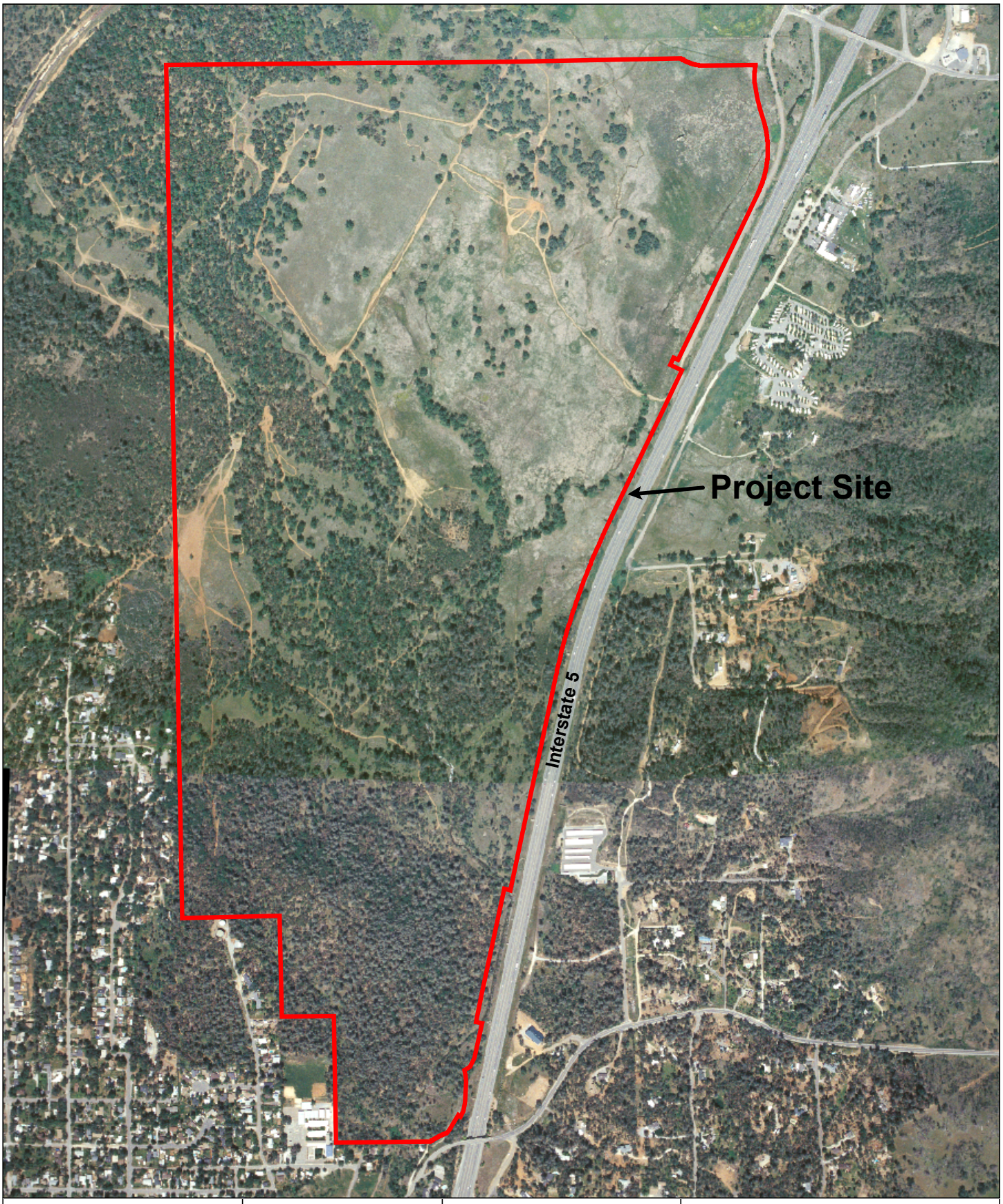
NOTES:
Base map: Project City, CA, USGS
7.5 minute topographic quadrangle

Figure 1

SITE & VICINITY MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA



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N

0 250 500 1,000

Scale in Feet

Photo Date: April 9, 2004

Figure 2

AERIAL PHOTO

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA

Special Status Species Review

To determine which special-status species could occur on or near the project site, North Fork Associates queried the California Natural Diversity Data Base (CDFG 2006) and the California Native Plant Society Inventory (CNPS 2006) for reported occurrences of special status fish, wildlife, and plant species in the region surrounding the project site. The nine-quadrangle search included the Project City, Enterprise, Redding, Shasta Dam, Minnesota Mountain, Palo Cedro, Bella Vista, O'Brien, and Bohemotash Mountain quadrangles quadrangles. North Fork Associates biologists also reviewed the following special-status species lists for the project vicinity:

- U.S. Fish and Wildlife Service list of Federal Endangered and Threatened Species for the Project City USGS quadrangle;
- USFWS list of Federal Endangered and Threatened Species for Shasta County; and
- California Department of Fish and Game list of Species of Special Concern.

For the purposes of this report, special status species are those that fall into one or more of the following categories:

- Listed as endangered or threatened under the federal Endangered Species Act (or candidate species, or formally proposed for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated a Species of Special Concern by the California Department of Fish and Game, or
- Occurring on Lists 1, 2, 3, or 4, maintained by the California Native Plant Society.

Field Assessment

The initial field surveys were conducted by Jeff Glazner and Pat Britton in April 2004, November 2004, and January 2005. These surveys were conducted primarily for the wetland delineation. Additional botanical surveys were conducted by Barry Anderson on April 19 and 20, May 19, and June 29, 2006. The primary purpose of these surveys was to locate special status species that might be present. Biologist Erinn Birmingham conducted an initial wildlife survey on May 19, 2006, and Gaylene Tupen conducted an additional wildlife survey on August 14, 2006.

The entire site was evaluated on foot (or by ATV) and all areas of the site were evaluated. Plants and animals observed were recorded, habitat types were determined and the potential for the site to support special status species were also assessed. Appendix A is a list of plant species observed during field surveys, and Appendix B is a list of wildlife observed.

All botanical surveys were conducted floristically according to guidelines for rare plant surveys issued by the California Department of Fish and Game. Each individual plant encountered was identified to the extent necessary to determine whether it was a special status species. Plants unknown to the surveyor were collected and identified in the office using a binocular

microscope and standard plant identification manuals. Some specimens were pressed for later identification and these are stored in the North Fork Associates herbarium in Auburn. Plant names follow *The Jepson Manual* (Hickman 1993) and updates by the Jepson Interchange, a web site maintained by the University and Jepson Herbaria of the University of California.

RESULTS

Geology and Soils

The Geologic Map of California, Redding Sheet (1:250,000) shows the presence of Pleistocene non-marine sediments and Devonian and pre-Devonian metavolcanic rocks (California Division of Mines and Geology 1962). Neither is known to support special status plants that are known to occur on limestone, serpentine, and other special geological formations in this area.

Eleven soil units are identified and mapped on the site: Anderson gravelly sandy loam; Auburn loam, 0 to 8 percent slopes; Auburn very stony loam, 8 to 30 percent slopes; Auburn clay loam, 8 to 30 percent slopes, eroded; Churn gravelly loam, deep, 0 to 3 percent slopes; Churn loam, slightly wet, 0 to 3 percent slopes; Churn gravelly loam, 0 to 3 percent slopes; Churn gravelly loam, 3 to 8 percent slopes; Perkins gravelly loam, 8 to 15 percent slopes; Red Bluff loam, 0 to 3 percent slopes; Red Bluff loam, 3 to 8 percent slopes. Soil types are discussed in more detail in the wetland delineation report**.**

Hydrology

Two named creeks occur on the site, Moody Creek and Rancheria Creek. Other unnamed tributaries are also present. The source of these creeks is on the south side of Saddle Back, a ridge that separates the site from Shasta Lake. Most of the streams are intermittent and have some groundwater component. The unnamed stream associated with the large wetlands has a substantial groundwater component. Both Moody Creek and Rancheria Creek were dry during the July 2006 surveys. All streams were dry by the August 2006 wildlife survey. There is no permanent water on the project site.

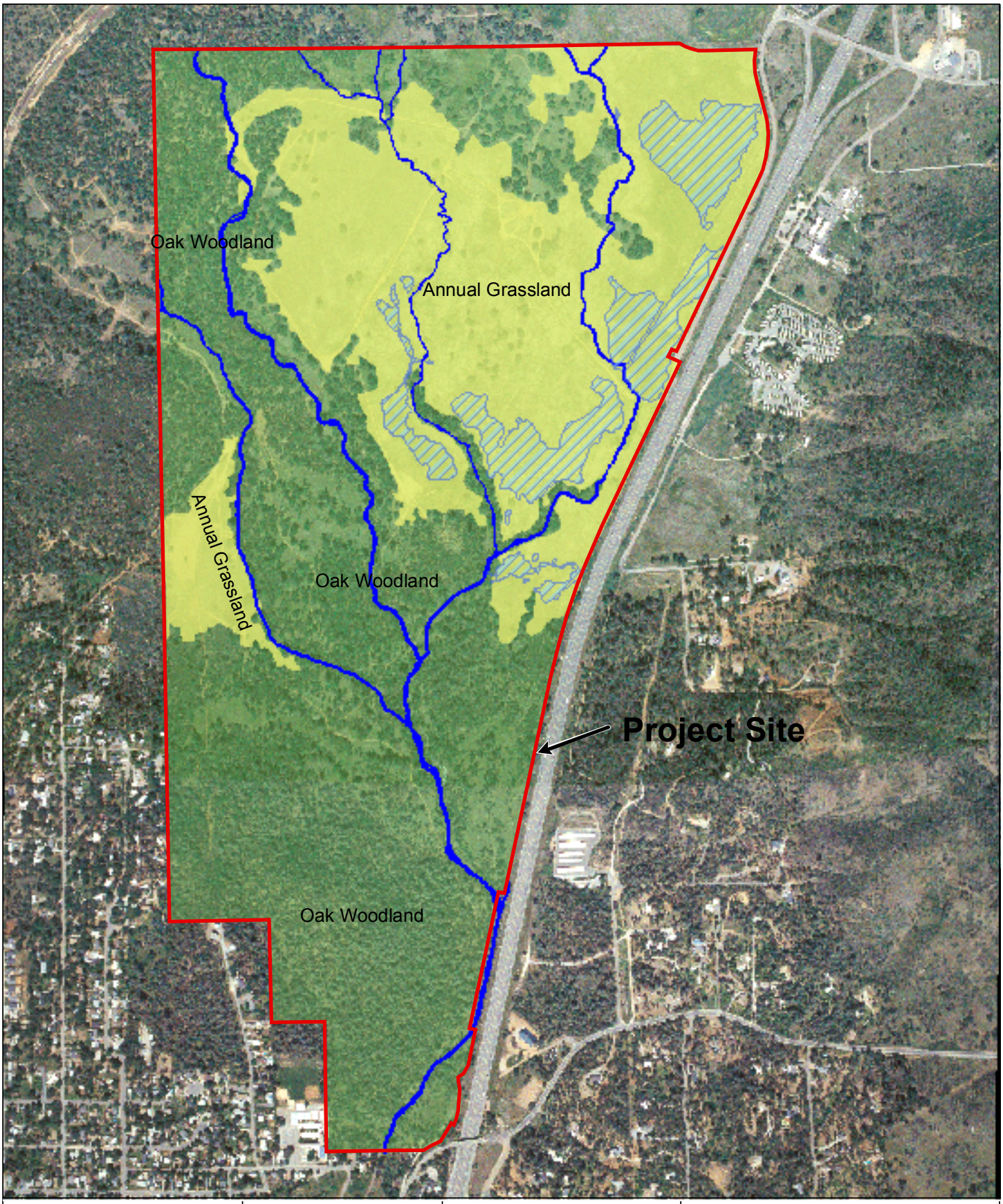
The geotechnical report for the site indicates the presence of unfractured rock under most of the site between 5 and 15 feet deep. The water source for the large wetlands is unknown, but water perched on unfractured rock probably contributes to the wetland hydrology.

Vegetation and Wildlife Habitats

Vegetation on the site is a mosaic of foothill woodland and annual grassland. Figure 3 is a habitat map and Figures 4 and 5 include site photos of the property.

Foothill Woodland

Foothill woodland occupies the majority of the project site. Valley oak (*Quercus lobata*), blue oak, and interior live oak are the dominant tree species. Foothill pines are present and are widely scattered throughout the property. Valley oak is more abundant along the open meadows, whereas blue oak, interior live oak and foothill pine are more suited to drier locations. The shrub layer varies from dense to absent depending on factors such as slope and soil depth. Common shrubs include white leaf manzanita, poison oak, toyon, coffeeberry, and buck brush. The herbaceous (non-woody) understory is made up of a combination of ruderal and native species. Abundant herbaceous species observed included hedgehog dogtail grass,



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N

0 250 500 1,000

Scale in Feet

- Study Area - 583 acres
- Annual Grassland (~228 acres)
- Oak Woodland (~355 acres)
- Intermittent Streams
- Wetlands

Figure 3

HABITAT MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA



4a. Annual grassland and foothill woodland.

4b. Typical annual grassland area with foothill woodland in background.





4c. Seasonal wetland (SW-7).

4d. Seasonal wetland (SW-8).



north fork associates

Photo Date: April 15 & November 17, 2004 and January 27, 2005

Figure 4

SITE PHOTOS
Mountain Gate Meadows
City of Shasta Lake, Shasta County, CA



5a. Ephemeral stream. (ES-2) looking northeast toward I-5.



5b. Intermittent stream. (IS-2).



5c. Intermittent stream. Moody Creek.

north fork associates

Photo Date: April 15, 2004 & January 27, 2005

Figure 5

SITE PHOTOS
Mountain Gate Meadows
City of Shasta Lake, Shasta County, CA

crane's-bill geranium, clover, buttercup, sanicula, yellow star-thistle, and blue wildrye. The oak woodland on the project site is typical of such habitats in the region at this elevation.

Annual Grassland

The annual grassland occurs primarily in the northern areas and consists of medusa head, soft chess brome, ripgut brome, chicory, yellow star-thistle, and hedgehog dogtail grass. Native species observed included western buttercup, white brodiaea, blue wildrye, and Fitch's spikeweed.

For this report, large areas of herbaceous wetlands are embedded into the annual grassland habitat. These areas appear to be driven by seasonal high groundwater as well as surface runoff. They are dominated by yampah, common velvet grass, dallis grass, iris-leaf rush, Italian ryegrass, and other wetland generalists.

Wildlife

The project site is expected to support a wide diversity of wildlife due to the availability of important habitat features including nesting sites, escape and thermal cover, and a variety of food sources. In addition, ephemeral and intermittent streams located on site provide both seasonal and year-round sources of water for wildlife of the area. Woodland communities, such as those located throughout the site are important for animal cover and provide excellent roosting and nesting opportunities for birds and shelter for mammals. Snags located throughout the site provide nesting cavities for birds such as owls, woodpeckers, and bluebirds. Taller trees of the site provide good nesting habitat for raptors such as great horned owl, red-tailed hawk, and red-shouldered hawk.

The following animals were observed in association with annual grassland of the project site during field surveys associated with this study: California ground squirrel, American robin, Western scrub jay, mourning dove, western kingbird, house finch, American crow, barn swallow, and turkey vulture. In addition, two red-tailed hawks were observed flying over grassland areas of the site throughout the field survey. Sign of black-tailed hare, mule deer, coyote, Botta's pocket gopher, and other small rodents was observed in grassland and open woodland habitats of the project site. The following animals were observed directly, or evidence of their occurrence was observed within woodland habitats of the project site during the field survey: western gray squirrel, California towhee, western scrub-jay, oak titmouse, Anna's hummingbird, acorn woodpecker, yellow-rumped warbler, western fence lizard, and coyote. At the time of the August 14, 2006 site visit, on-site drainages were dry in most locations and therefore no aquatic species were present. Only a small portion of the eastern-most unnamed drainage contained a few inches of standing water at the time of the site visit. The following species were detected in the vicinity of ephemeral and intermittent streams of the site during the field surveys: black phoebe, raccoon, Pacific treefrog, and striped skunk. While no active nests were detected during the field survey, numerous taller oaks and pines located throughout the site are expected to provide important seasonal nesting habitat for raptors. A complete list of species observed during the August 14, 2006 site visit is provided in Appendix B.

Waters of the United States

A wetland delineation on the ±583-acre Mountain Gate Meadows project site was conducted from April 2004 through January 2005. The majority of the project site is oak woodland while a

large upland/wetland grassland complex occurs along I-5. The site contains two named creeks, Moody and Rancheria Creek that flow north to south through the site and off the site to the south into the City of Shasta Lake. We have mapped total of 48.74-acres of Waters of the United States, represented by ephemeral streams, intermittent streams, wetland swales and seasonal wetlands. The wetland delineation was submitted to the Corps of Engineers for verification in July 2005.

Streams and Riparian Habitat

The property has several stream channels that are within the jurisdiction of the California Department of Fish and Game. In general, these channels do not have a dense, continuous canopy of riparian vegetation. What is present consists of scattered willow shrubs and trees and a few scattered cottonwoods. Portions of some channels and floodplains support wetland vegetation. Impacts to these areas would require a permit from CDFG.

Special Status Species

Appendix C is a list of special status plants that may occur on the project site, and Appendix D is a similar list of special status wildlife. Species requiring habitats not occurring in or around the study area and species occurring far outside the study area are not considered in Appendix C or Appendix D. Field surveys and the best professional judgment of North Fork Associates biologists were used to further refine the tables in Appendix C and Appendix D. In general, plants on the CNPS List 3 and List 4 are not considered further. Table 1 is a list of special status species that occur on the site or that are rated possible or likely to occur. These species are discussed in more detail following the table.

The refined list of special status species in the region of the project site includes 11 plants and 12 animals (Appendix C and Appendix D, respectively). Of the 11 plant species in Appendix C and 12 animal species in Appendix D, 7 plants and one animal occur or have some potential to occur because the site has some areas of suitable habitat or they are known from nearby locations. Table 2 is a summary of those species, and they are discussed in more detail in the paragraphs following the table.

Table 1
Special Status Species That Could Occur on the Project Site

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
Plants					
Ahart's paronychia *Paronychia ahartii*	-	-	List 1B.1	Woodlands and grasslands	Unlikely. Marginal habitat is present.
Bellinger's Meadowfoam *Limnanthes floccosa* subsp. *bellingeriana*	-	-	List 1B.2	Mesic areas near wetlands	Possible. Could occur in wetlands.
Four-angled spikerush *Eleocharis quadrangulata*	-	-	List 2.2	Marshes (freshwater)	Possible. Could occur in wetlands.
Henderson's bent grass *Agrostis hendersonii*	-	-	List 3.2		Unlikely. Very marginal habitat is present.

Species	Fed	State	CNPS	Habitat	Potential for Occurrence
Northern clarkia *Clarkia borealis* subsp. *borealis*	-	-	1B.3	Forest and woodland openings	Possible. Suitable upland habitat is present.
Red Bluff dwarf rush *Juncus leiospermus* subsp. *leiospermus*	-	-	1B.1	Seasonal wetlands and vernal pools	Possible. Could occur in wetlands.
Silky cryptantha *Cryptantha crinita*	-	-	1B.2	Gravelly streambeds	Possible. Suitable habitat occurs in two of the stream channels.
Birds					
Cooper's hawk *Accipiter cooperi*	--	CSC		Dense stands of oak woodland, riparian forest or other forested habitats near water.	Likely. Suitable nesting and foraging habitat occurs throughout the western and southern portions of the project site.

Status Codes:

Federal	FE	Federal Endangered
	FT	Federal Threatened
	FP	Federal Proposed Species
State	CE	California Endangered
	CT	California Threatened
	CR	California Rare (plants only)
	CSC	California Species of Concern
CNPS	List 1B	Rare or Endangered in California
	List 2	R and E in California, more common elsewhere

The site does contain wetlands and therefore, may support any of the special status plant and animal species that they may contain. Appendix A is a preliminary list of plant species observed and Appendix B is a preliminary list of wildlife species observed.

Plants

Ahart's paronychia (*Paronychia ahartii*) is an inconspicuous, erect, annual member of the pink family (Caryophyllaceae). It lacks state or federal status, but is on the CNPS List 1B. Other members of the genus in California area introduced. Ahart's paronychia differs from these by being very short (less than 2 cm high rather than more than 2 cm) and annual (rather than perennial). It grows in rocky hard packed soil, often at the edges of vernal pools, especially in volcanic uplands. It is found in Butte, Tehama, and Shasta Counties, and it blooms from April to June. No members of the genus *Paronychia* were observed during field surveys. Several common introduced members of the pink family were found on the site.

Bellinger's meadowfoam (*Limnanthes floccosa* subsp. *bellingeriana*) is an annual member of the meadowfoam family (Limnanthaceae). It lacks state or federal status, and is on the CNPS List 1B. The current status of this taxon is unclear. It is not included in *The Jepson Manual*, and the Jepson Interchange webpage indicates that it is not an excepted name for a taxon occurring in California, including it in *L. floccosa* subsp. *floccosa* (which is a CNPS List 2 species). *The Illustrated Flora of the Pacific States* (Abrams and Ferris, Volume 3, page 49) make *L. bellingeriana*

as synonym of *L. pumila*, which occurs in Oregon. This species is separated from other similar species by small petals, usually smaller than or equal to the sepals. According to the CNPS, Bellinger's meadowfoam occurs in mesic meadows and wetlands in Shasta County. It blooms from April to June. No members of the meadowfoam were found during surveys.

Four-angled spikerush (*Eleocharis quadrangulata*) is a relatively tall, perennial member of the sedge family (Cyperaceae). It lacks state or federal status. It is on the CNPS List 2, and is common in eastern North America. It also grows in Oregon. Four-angled spikerush has a square stem unlike most other species. It is taller and has thicker stems than the somewhat similar *E. pachycarpa*. It is found at scattered locations from Tehama and Butte Counties to Merced County, where is grows in marshes and pond margins. Four-angled spike rush fruits during the late summer and early winter. Only the common *E. macrostachya* was found to be present.

Henderson's bent grass (*Agrostis hendersonii*) is an annual member of the grass family (Poaceae). It has no state or federal status. It is on the CNPS List 3, which is a watch list for species needing more information. Henderson's bent grass is very similar to the more common *Agrostis microphylla*, but its fruiting bodies are larger and it is restricted to vernal pools and mesic areas. It is found at scattered locations from Shasta County to Merced County. It blooms in April and May. An unidentified perennial bent grass was observed in wetlands on the property. However, this unknown species is a dense-growing perennial and not an annual like Henderson's bent grass.

Northern clarkia (*Clarkia borealis* subsp. *borealis*) is an annual member of the evening-primrose family (Onagraceae). This species lacks state or federal status, but it is on the CNPS List 1B. Northern clarkia has unlobed petals, toothed claw, anthers extended beyond the petals, and an erect inflorescence recurved only at the tip. It grows in chaparral, woodland, and forest edges and openings in Trinity and Shasta Counties, and it blooms from June to September. Only the common and widespread *C. purpurea* was observed on the site.

Silky cryptantha (*Cryptantha crinita*) is a rough-hairy, annual member of the borage family (Boraginaceae). It lacks state or federal status and is on the CNPS List 1B. Silky cryptantha has a very dense inflorescence and it typically only one nutlet that is finely granular on the back. It grows in gravelly streambeds in a variety of habitats, and is confined Shasta and Tehama Counties. It blooms in April and May. Several species of the similar genus *Plagiobothrys* were observed, but no members of the genus *Cryptantha* were found.

Wildlife

Of the twelve special-status species identified as occurring in the project region (refer to Appendix D), only Cooper's hawk was determined to have a reasonable potential for occurring on site based on the presence of suitable habitat. Remaining species listed in Appendix D were excluded from further consideration due to the site lacking required habitats such as vernal pools, perennial streams or pools, or limestone outcroppings.

Cooper's hawk (*Accipiter cooperii*), a California species of special concern, is a breeding resident throughout most woodland habitats of California. Breeding takes place in dense-canopied trees from foothill pine-oak woodlands up to ponderosa pine forest. Nesting sites are usually located near water. This species hunts in broken woodland and habitat edges, where they catch small birds in the air. They prefer nesting sites in riparian growths of deciduous trees, as in canyon bottoms and on river flood plains, although live oaks are often used. Breeding takes place from

March through August, with peak activity occurring in May and June. Cooper's hawk nests are often constructed in deciduous trees in crotches approximately 20 to 50 feet above ground. The nest is a stick platform lined with bark. This species incubates eggs for about 35 days, and young are fledged between 30 to 34 days. Young birds often remain in the vicinity of the nest after they fledge while they are learning to hunt.

Cooper's hawk was not observed on site during the field assessment portion of this study. However, suitable foraging and nesting habitat for the species occurs throughout woodland areas of the site, particularly in the western and southern portions of the site. This species prefers nesting in riparian woodland habitats, but is also known to nest in live oaks. The project site is therefore expected to provide good-quality habitat for this species.

Tree Conservation

All trees (except gray pine (*Pinus sabiniana*), having at least one trunk of ten inches or more DBH (diameter at breast height) are considered protected trees. Subdivisions and other development projects shall be designed to the extent possible to minimize destruction and damage to protected trees. If a protected tree must be removed from a property to facilitate development allowed by zoning, replacement trees shall be provided to compensate for the loss (Shasta Lake Tree Ordinance Chapter 12.36 Tree Conservation).

RECOMMENDATIONS

1) The site has habitats that are waters of the United States. Impacts to these areas will require a permit from the U.S. Army Corps of Engineers. The type and extent of the permit needed will depend on the extent of impacts.
2) Impacts to waters of the United States also require a water quality certification from the Regional Water Quality Control Board pursuant to Section 401 of the federal Clean Water Act.
3) Impacts to streams and riparian habitat will require a streambed alteration agreement from the California Department of Fish and Game.
4) Floristic botanical surveys were conducted during the spring and summer of 2006. These surveys did not locate any special status plant surveys, and no further surveys are recommended.
5) Based on the presence of suitable nesting and foraging habitat, Cooper's hawk is expected to have a reasonable potential for occurring at the project site. Project implementation could therefore result in disturbance of breeding and nesting of this species if construction occurs at any time during the typical breeding season (approximately March 1 through August 31). Nesting of other raptors known from the region, including red-shouldered hawk and great horned owl, could also be adversely affected if construction takes place during the identified breeding/nesting season. Take of any active raptor nest is prohibited under Fish and Game Code Section 3503.5. To avoid take of active raptor nests, pre-construction surveys should be conducted by a qualified biologist no more than 30 days prior to initiation of proposed development activities. Survey results should then be submitted to CDFG. If active raptor nests are found on or immediately adjacent to the site, consultation should be initiated by CDFG

to determine appropriate avoidance measures. If no nesting is found to occur, necessary tree removal could then proceed.

6) The potential for occurrence of Valley Elderberry Longhorn Beetle (VELB) within the project site was determined to be unlikely based on the lack of observation of elderberry shrubs during field surveys associated with this study (refer to Appendix D). However, the presence or absence of elderberries could not be conclusively determined due to the size of the project site and dense vegetative cover in woodland areas, particularly in the southern portion of the site. To avoid disturbance of potential habitat for VELB that may occur in dense woodland areas of the site, pre-construction surveys for elderberries should be conducted prior to any ground disturbance in these areas. All elderberries with stems at ground level greater than 1 inch diameter are considered potential habitat for VELB and are protected by the Federal Endangered Species Act. Impacts to these shrubs would require a take permit from the United States Fish and Wildlife Service.

7) The site has trees that are protected by the Shasta Lake Tree Ordinance. A tree survey should be conducted within the development area, and the project should comply with the tree ordinance.

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Appendix A
Plants Occurring on the Mountain Gate Meadows Property, April 2004 – June 2006

Appendix A

Plants Occurring on the Mountain Gate Meadows Property

Ferns and Allies

Selaginellaceae

Selaginella sp.	Spike-moss

Gymnosperms

Pinaceae

Pinus ponderosa	Pacific ponderosa pine
Pinus sabiniana	Foothill pine

Angiosperms - Dicots

Amaranthaceae

**Amaranthus albus*	Tumble pigweed

Anacardiaceae

Toxicodendron diversilobum	Western poison-oak

Apiaceae

Daucus pusillus	Rattlesnake weed
Eryngium articulatum	Jointed coyote-thistle
Lomatium utriculatum	Bladder parsnip
Perideridia gairdneri subsp. borealis	Yampah
Perideridia kelloggii	Kellogg's yampah
Sanicula bipinnatifida	Purple sanicle
Sanicula crassicaulis	Gamble weed
**Scandix pecten-veneris*	Venus' needle
Tauschia hartwegii	Tauschia
**Torilis arvensis*	Field hedge-parsley

Apocynaceae

Asclepias cordifolia	Purple milkweed
Asclepias eriocarpa	Indian milkweed
Asclepias fascicularis	Narrow-leaf milkweed

Aristolochiaceae

Aristolochia californica	California pipevine

Asteraceae

Agoseris sp.	Agoseris
**Anthemis cotula*	Mayweed
Brickellia californica	California brickle-bush
Calycadenia multiglandulosa	Sticky calycadenia
**Carduus pycnocephalus*	Italian thistle
**Centaurea solstitialis*	Yellow star-thistle
Centromadia fitchii	Fitch's spikeweed
**Chondrilla juncea*	Skeleton weed
**Cichorium intybus*	Chicory

Cirsium occidentale var. californicum	California thistle
Conyza canadensis	Horseweed
Eriophyllum lanatum	Woolly sunflower
Gnaphalium palustre	Western marsh cudweed
Grindelia camporum var. camporum	Great Valley gumweed
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
**Lactuca serriola*	Prickly lettuce
Lagophylla glandulosa	Glandular hareleaf
**Logfia gallica*	Narrow-leaved filago
Madia elegans	Common madia
Madia elegans subsp. vernalis	Common madia
Madia exigua	Threadstem madia
Madia gracilis	Slender tarweed
**Matricaria discoidea*	Pineapple-weed
Micropus californicus subsp. californicus	Slender cottonweed
**Senecio vulgaris*	Common groundsel
Solidago californica	California goldenrod
**Soliva sessilis*	Soliva
**Sonchus asper subsp. asper*	Prickly sow-thistle
**Taraxacum officinale*	Dandelion
**Tragopogon dubius*	Goat's beard
Wyethia angustifolia	Narrowleaf mules ears

Boraginaceae

Amsinckia menziesii	Common fiddlneck
Plagiobothrys glyptocarpus var. glyptocarpus	Sculptured popcornflower
Plagiobothrys nothofulvus	Rusty popcornflower
Plagiobothrys stipitatus var. micranthus	Stipitate popcornflower

Brassicaceae

Barbarea orthoceras	Winter cress
Cardamine oligosperma	Few-seed bitter cress
**Lepidium latifolium*	Broad-leaf peppergrass
Lepidium nitidum var. nitidum	Peppergrass
**Nasturtium officinale*	Water cress
**Raphanus raphanistrum*	Jointed charlock
**Sinapis arvensis*	Charlock
**Sisymbrium officinale*	Hedge mustard
Thysanocarpus curvipes	Lacepod

Callitrichaceae

Callitriche heterophylla var.. heterophylla	Larger water-starwort
Callitriche marginata	Winged water-starwort

Campanulaceae

Downingia bicornuta var. bicornuta	Double-horned downingia

Caprifoliaceae

Lonicera interrupta	Chaparral honeysuckle
Symphoricarpos albus var. laevigatus	Common snowberry
Symphoricarpos mollis	Creeping snowberry

Caryophyllaceae

**Cerastium glomeratum*	Mouse-ear chickweed

**Petrorhagia dubia*	Grass-pink
**Scleranthus annuus subsp. annuus*	Annual knawel
**Spergularia rubra*	Ruby sand-spurrey
**Stellaria media*	Common chickweed

Convolvulaceae

Calystegia occidentalis	Morning-glory
**Convolvulus arvensis*	Bindweed

Crassulaceae

**Crassula tillaea*	Mossy pygmy-weed

Cucurbitaceae

Marah fabaceus	California man-root
Marah watsonii	Watson's man-root

Ericaceae

Arctostaphylos viscida	Whiteleaf manzanita

Euphorbiaceae

Chamaesyce ocellata subsp. ocellata	Valley spurge
Croton setigerus	Turkey mullein

Fabaceae

Cercis occidentalis	Western redbud
**Lathyrus angulatus*	Wild-pea
**Lathyrus cicera*	Wild-pea
Lathyrus sp.	Wild pea
Lotus humistratus	Woolly trefoil
Lotus micranthus	Hill lotus
Lotus pinnatus	Bog trefoil
Lotus purshianus var. purshianus	Spanish-clover
Lupinus albifrons var. collinus	Bush lupine
Lupinus bicolor	Miniature lupine
Lupinus pachylobus	Big pod lupine
**Medicago polymorpha*	California burclover
**Robinia pseudoacacia*	Black locust
Trifolium ciliolatum	Ciliate clover
**Trifolium dubium*	Little hop clover
Trifolium gracilentum var. gracilentum	Pin-point clover
**Trifolium hirtum*	Rose clover
Trifolium microcephalum	Small-headed clover
**Trifolium repens*	White clover
**Trifolium subterraneum*	Subterranean clover
Trifolium variegatum	White-tip clover
Trifolium willdenovii	Tomcat clover
**Vicia sativa*	Common vetch
**Vicia villosa*	Hairy vetch

Fagaceae

Quercus douglasii	Blue oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak
Quercus morehus	Oracle oak
Quercus wislizeni	Interior live oak

Gentianaceae

Zeltnera muehlenbergii	June centaury

Geraniaceae

**Erodium botrys*	Broad-leaf filaree
**Erodium brachycarpum*	Short-fruited stork's-bill
**Erodium cicutarium*	Red-stem filaree
**Geranium dissectum*	Cut-leaf geranium
**Geranium molle*	Crane's-bill geranium

Hydrophyllaceae

Nemophila heterophylla	White nemophila
Nemophila pedunculata	Meadow baby blue-eyes
Phacelia hastata subsp. hastata	Phacelia

Hypericaceae

**Hypericum perforatum*	Klamathweed

Lamiaceae

**Mentha pulegium*	Pennyroyal
Monardella sp.	Monardella
Prunella vulgaris var. lanceolata	Self-heal
Scutellaria siphocampyloides	Skullcap
Stachys ajugoides var. ajugoides	Bugle hedge-nettle
Stachys ajugoides var. rigida	Rigid hedge-nettle
Stachys stricta	Sonoma hedge-nettle
Trichostema lanceolatum	Vinegar weed

Linaceae

**Linum bienne*	Flax

Lythraceae

**Lythrum hyssopifolium*	Hyssop loosestrife

Molluginaceae

**Mollugo verticillata*	Indian chickweed

Moraceae

**Ficus carica*	Fig

Myrsinaceae

**Anagalis arvensis*	Scarlet pimpernel

Onagraceae

Clarkia purpurea	Clarkia
Epilobium brachycarpum	Summer cottonweed
Epilobium ciliatum	Hairy willow-herb
Epilobium densiflorum	Dense-flower spike-primrose
Epilobium torreyi	Brook spike-primrose
Ludwigia peploides	Water-primrose

Papaveraceae

Eschscholzia lobbii	Fryingpan poppy

Plantaginaceae

Plantago erecta	Plantain
**Plantago lanceolata*	English plantain

Polemoniaceae

Navarretia intertexta subsp. intertexta	Needle-leaved navarretia
Navarretia pubescens	Downy navarretia

Polygonaceae

Eriogonum nudum	Wild buckwheat
Persicaria punctata	Dotted smartweed
Persicaria sp.	Smartweed
**Polygonum aviculare*	Common knotweed
**Rumex acetosella*	Sheep sorrel
Rumex californicus	California willow dock
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock
Rumex salicifolius	Willow dock

Portulacaceae

Claytonia parviflora	Claytonia
Montia fontana	Blinks

Primulaceae

Dodecatheon hendersonii	Mosquito bills

Ranunculaceae

Clematis ligusticifolia	Western clematis
Ranunculus aquatilus	Aquatic buttercup
Ranunculus bonariensis var. trisepalus	Vernal pool buttercup
**Ranunculus muricatus*	Spiny-fruit buttercup
Ranunculus occidentalis	Western buttercup
Ranunculus orthorhynchus var. bloomeri	Straight-beak buttercup
Thalictrum fendleri var. polycarpum	Meadow-rue

Rhamnaceae

Ceanothus cuneatus var. cuneatus	Buck brush
Ceanothus lemmonii	Lemmon's ceanothus
Rhamnus californica subsp. californica	California coffeeberry
Rhamnus ilicifolia	Hollyleaf redberry
Rhamnus purshiana	Cascara sagrada
Rhamnus tomentella subsp. tomentella	Hoary coffeeberry

Rosaceae

Heteromeles arbutifolia	Toyon
Potentilla glandulosa	Glandular cinquefoil
**Prunus sp.*	Prunus
Rosa californica	Califronia rose
**Rubus discolor*	Himalayan blackberry
Rubus ursinus	California blackberry

Rubiaceae

Cephalanthus occidentalis var. californicus	California button willow
**Galium aparine*	Goose grass
**Galium parisiense*	Wall bedstraw
Galium porrigens var. tenue	Climbing bedstraw
**Sherardia arvensis*	Field madder

Salicaceae

Populus fremontii subsp. fremontii	Fremont cottonwood
Salix exigua	Narrow-leaved willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Salix sp.	Willow

Sapindaceae

Aesculus californica	California buckeye

Scrophulariaceae

Gratiola ebracteata	Bractless hedge-hyssop
Keckiella lemmonii	Keckiella
Mimulus guttatus	Common monkeyflower
**Parentucellia viscosa*	Parentucellia
Triphysaria versicolor subsp. faucibarbata	Triphysaria
**Verbascum blattaria*	Moth mullein
**Verbascum thapsus*	Woolly mullein

Solanaceae

Solanum parishii	Nightshade

Styracaceae

Styrax officinalis var. redivivus	Snowdrop bush

Viscaceae

Arceuthobium occidentale	Foothill-pine dwarf mistletoe
Phoradendron villosum	Oak mistletoe

Vitaceae

Vitis californica	California wild grape

Angiosperms -Monocots

Alismataceae

Alisma plantago-aquatica	Water plantain

Araceae

Lemna sp.	Duckweed

Cyperaceae

Carex praegracilis	Clustered field-sedge
Carex spp.	Sedges
Cyperus eragrostis	Tall flatsedge
Eleocharis macrostachya	Creeping spikerush
Schoenoplectus acutus var. occidentalis	Hard-stem tule

Iridaceae

Sisyrinchium bellum	Blue-eyed grass

Juncaceae

Juncus balticus	Baltic rush
Juncus bufonius	Toad rush
Juncus mexicanus	Mexican rush
Juncus occidentalis	Slender rush
Juncus oxymeris	Pointed rush

Juncus patens	Common rush
Juncus sp.	Rush
Juncus xiphioides	Iris-leaf rush
Luzula comosa	Common wood-rush

Juncaginaceae

Lilaea scilloides	Flowering quillwort

Liliaceae

Allium amplectens	Clasping onion
Allium sp.	Wild onion
Calochortus superbus	Mariposa lily
Calochortus tolmiei	Pussy ears
Chlorogalum angustifolium	Narrow-leaved soap plant
Chlorogalum pomeridianum var. pomeridianum	Soap plant
Odontostomum hartwegii	Hartweg's odontostomum

Poaceae

Agrostis sp.	Bent grass
**Aira caryophyllea*	Silver European hairgrass
**Anthoxanthum aristatum*	Vernal grass
Aristida oligantha	Oldfield three-awn
**Avena barbata*	Slender wild oat
**Brachypodium distachyon*	False-brome
**Briza maxima*	Quaking grass
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus inermis ssp. inermis*	Smooth brome
**Bromus madritensis subsp. madritensis*	Spanish brome
**Bromus madritensis subsp. rubens*	Red brome
Bromus sp.	Brome
**Bromus tectorum*	Cheat grass
**Cynodon dactylon*	Bermuda grass
**Cynosurus echinatus*	Hedgehog dogtail
**Dactylis glomerata*	Orchard grass
Deschampsia danthonioides	Annual hairgrass
Elymus glaucus	Blue wildrye
**Gastridium ventricosum*	Nit grass
Glyceria occidentalis	Northwestern mannagrass
**Holcus lanatus*	Common velvet grass
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum*	Foxtail barley
**Lolium multiflorum*	Italian ryegrass
Melica californica	California melic
Nassella pulchra	Purple needlegrass
Panicum capillare	Witchgrass
**Paspalum dilatatum*	Dallis grass
**Phleum pratense*	Common timothy
**Poa annua*	Annual bluegrass
**Poa bulbosa*	Bulbous bluegrass
Poa secunda subsp. secunda	One-sided bluegrass
**Polypogon monspeliensis*	Annual beard grass

**Taeniatherum caput-medusae*	Medusa-head
**Vulpia bromoides*	Brome fescue
**Vulpia myuros*	Rattail fescue

Themidaceae

Brodiaea coronaria subsp. coronaria	Harvest brodiaea
Dichelostemma multiflorum	Wild hyacinth
Triteleia hyacinthina	White brodiaea

Appendix B
Wildlife Observed at Mountain Gate Meadows Project Site, April 2004 – August 2006

Appendix B
Wildlife Observed at Mountain Gate Meadows

Amphibians

Pacific chorus frog	*Pseudacris regilla*

Reptiles

Western fence lizard	*Sceloporus occidentalis*

Birds

Turkey vulture	*Cathartes aura*
Red-tailed hawk	*Buteo jamaicensis*
Mourning dove	*Zenaida macroura*
Anna's hummingbird	*Calypte anna*
Acorn woodpecker	*Melanerpes formicivorus*
Black phoebe	*Sayornis nigricans*
Western kingbird	*Tyrannus verticalis*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Barn swallow	*Hirundo rustica*
Oak titmouse	*Baeolophus inornatus*
American robin	*Turdus migratorius*
Northern mockingbird	*Mimus polyglottos*
Yellow-rumped warbler	*Dendroica coronata*
California towhee	*Pipilo crissalis*
Song sparrow	*Melospiza melodia*
White-crowned sparrow	*Zonotrichia leucophrys*
House finch	*Carpodacus mexicanus*
Lesser goldfinch	*Carduelis psaltria*
House sparrow	*Passer domesticus*

Mammals

Western gray squirrel	*Sciurus griseus*
Black-tailed hare	*Lepus californicus*
California ground squirrel	*Spermophilus beecheyi*
Botta's pocket gopher	*Thomomys bottae*
Coyote	*Canis latrans*
Raccoon	*Procyon lotor*
Striped skunk	*Mephitis mephitis*
Mule deer	*Odocoileus hemionus*

Appendix C

Special Status Plants Species Occurring in the Region Around Mountain Gate Meadows

Appendix C

Special Status Plant Species Occurring in the Region Around Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Boraginaceae				
Cryptantha crinita Silky cryptantha	Fed: - State: - CNPS: List 1B.2	April-May	Cismontane woodland; lower montane coniferous forest; riparian forest; riparian woodland; valley and foothill grassland; [gravelly streambeds].	Possible. Suitable habitat is present in two o fthe stream channels.
Campanulaceae				
Legenere limosa Legenere	Fed: - State: - CNPS: List 1B.1	April-June	Vernal pools.	None. The site does not have deep vernal pools.
Caprifoliaceae				
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: List 2.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	None. This species prefers shady, north-facing slopes.
Caryophyllaceae				
Paronychia ahartii Ahart's paronychia	Fed: - State: - CNPS: List 1B.1	April-June	Cismontane woodland; valley and foothill grassland; vernal pools.	Unlikely. Marginal habitat is present.
Cyperaceae				
Eleocharis quadrangulata Four-angled spikerush	Fed: - State: - CNPS: List 2.2	May-September	Marshes and swamps (freshwater).	Possible. Could occur in wetlands on the site.
Juncaceae				
Juncus leiospermus leiospermus Red Bluff dwarf rush	Fed: - State: - CNPS: List 1B.1	March-May	Chaparral; cismontane woodland; valley and foothill grassland; vernal pools; [vernally mesic].	Possible. Suitable habitat is present.

Appendix C

Special Status Plant Species Occurring in the Region Around Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Limnanthaceae				
Limnanthes floccosa bellingeriana Bellinger's meadowfoam	Fed: - State: - CNPS: List 1B.2	April-June	Cismontane woodland; meadows; [mesic].	Possible. Could occur in wetlands.
Onagraceae				
Clarkia borealis borealis Northern clarkia	Fed: - State: - CNPS: List 1B.3	June-September	Chaparral; cismontane woodland; lower montane coniferous forest.	Possible. Suitable habitat is present.
Poaceae				
Agrostis hendersonii Henderson's bent grass	Fed: - State: - CNPS: List 3.2	April-May	Valley and foothill grassland (mesic); vernal pools.	Unlikely. Very marginal habitat exists on the site.
Orcuttia tenuis Slender Orcutt grass	Fed: FT State: CE CNPS: List 1B.1	May-July	Vernal pools.	None. No deep vernal pools are present.
Rosaceae				
Neviusia cliftonii Shasta snow-wreath	Fed: - State: - CNPS: List 1B.2	May-May	Lower montane coniferous forest (carbonate).	None. No suitable habitat is present.

Appendix C

Special Status Plant Species Occurring in the Region Around Mountain Gate Meadows

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
List 1A - Extinct
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 2 - Plants rare, threatened, or endangered in California, more common elsewhere
List 3 - Plants about which more information is needed, a review list
List 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

Appendix D

Special Status Wildlife Occurring in the Region Around Mountain Gate Meadows

Appendix D

Special Status Wildlife Occuring in the Region Around Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site
Invertebrates			
Vernal pool fairy shrimp *Branchinecta lynchi*	Fed: FT State: - Other: -	Vernal pools and other temporary bodies of water.	None. No suitable habitat (vernal pools) present on site. Closest documented occurrences are from east of Redding, in the Palo Cedro/Millville area.
Vernal pool tadpole shrimp *Lepidurus packardi*	Fed: FE State: - Other: -	Found in vernal pools in the Central Valley of California and in the San Francisco Bay area. Inhabits vernal pools with clear to highly turbid water.	None. No suitable habitat (vernal pools) present on site. Closest documented occurrences are from east of Redding, in the Palo Cedro/Millville area.
Insects			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Fed: FT State: - Other: -	Riparian and other habitats with blue elderberries (Sambucus mexicana). Prefers shrubs with stems 1 to 5 inches in diameter.	Unlikely. No suitable habitat (elderberry plants) observed on site. Closest known occurrence is from the northern side of Redding, in the riparian corridor along the Sacramento River.
Fish			
Chinook salmon - spring-run *Oncorhynchus tshawytscha*	Fed: FT State: CT Other: *	Found primarily in 4 tributaries of the Sacramento River: Butte Creek, Big Chico Creek, Deer Creek and Mill Creek Occur in water bodies with cool, fast-flowing water and gravel suitable for spawning.	None. No suitable aquatic habitat present on site. Known from the main stem of the Sacramento River, below Keswick Dam, and major tributaries.
Chinook salmon - winter run *Oncorhynchus tshawytscha*	Fed: FE State: CE Other:	Spawns in upper Sacramento River and Battle Creek. Migrate upstream in winter, holdover during summer in cold pools, and spawn in fall	None. No suitable aquatic habitat present on site. Known only from the main stem of the Sacramento River, downstream of Keswick Dam.
Amphibians			
Shasta salamander *Hydromantes shastae*	Fed: - State: CT Other:	Cool, moist ravines and valleys, usually near limestone outcrops and quarries.	Unlikely. No suitable habitat observed on site. Primarily associated with limestone fissures and caverns. Isolated populations known from the east and north of the site, near Shasta Lake.

Appendix D

Special Status Wildlife Occuring in the Region Around Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site
Foothill yellow-legged frog *Rana boylii*	Fed: - State: CSC Other: -	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. No suitable aquatic habitat (permanent or near-permanent surface water along rocky streams) observed on site.
Reptiles			
Northwestern pond turtle *Clemmys marmorata marmorata*	Fed: - State: CSC Other: -	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying.	Unlikely. No suitable aquatic habitat (perennial surface water and deep pools) present within project site.
Birds			
Bald eagle *Haliaeetus leucocephalus*	Fed: FT State: CFP Other: *	Occurs along shorelines, lake margins,and rivers. Nests in large, old-growth or dominant trees with open branches.	Unlikely. No suitable habitat (large bodies of water with adjacent tall trees) present on site. Species occurring to the north in association with Shasta Lake may periodically venture into site.
Cooper's hawk *Accipiter cooperii*	Fed: - State: CSC Other: -	Occurs in open to interrupted woodland. Nests primarily in deciduous riparian habitat with a dense canopy.	Possible. Suitable foraging and nesting habitat present on site.
Bank swallow *Riparia riparia*	Fed: - State: CT Other: *	Colonial nester near riparian and oher lowland habitats. Requires vertical banks or cliffs with fine-textured, sandy soils near streams, rivers, and lakes.	Unlikely. No suitable nesting habitat (vertical banks along streams or rivers) observed within project site.
Mammals			
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Fed: - State: CSC Other: -	Found in all but subalpine and alpine habitats. Roosts in limestone caves, lava tubes, mines, and buildings.	Unlikely. No suitable roosting habitat present on site. May periodically venture through project site when foraging.
Pacific fisher *Martes pennanti pacifica*	Fed: FC State: CSC Other:	Occurs in intermediate to large-tree stage coniferous forests and riparian woodlands with a high percent level of canopy closure.	Unlikely. No suitable forested habitat present on site. Known to occur at higher elevations in large areas of mature, dense coniferous forest.

Appendix D

Special Status Wildlife Occuring in the Region Around Mountain Gate Meadows

	Status*	Habitat	Probability on Project Site

***Status**	Federal:	State:	Other:
	FE - Federal Endangered	CE - California Endangered	Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.
	FT - Federal Threatened	CT - California Threatened	
	FPE - Federal Proposed Endangered	CR - California Rare	
	FPT - Federal Proposed Threatened	CC - California Candidate	
	FC - Federal Candidate	CFP - California Fully Protected	
	FPD - Federal Proposed for Delisting	CSC - California Species of Special Concern	

Appendix 4.6-3

WETLAND DELINEATION

WETLAND DELINEATION
FOR THE
±583-ACRE MOUNTAIN GATE MEADOWS PROJECT

CITY OF SHASTA LAKE, SHASTA COUNTY, CALIFORNIA

Submitted to:

U.S. Army Corps of Engineers, Regulatory Branch
Redding Field Office
152 Hartnell
Redding, CA 96002
(530) 223-9534

On behalf of:

Premier Homes
8205 Sierra College Boulevard, Suite 100
Roseville, CA 95661
(916) 789-9715

Prepared by:

north fork associates
110 Maple Street, Ste. 100, Auburn, California 95603
(530) 887-8500

July 29, 2005

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WETLAND DELINEATION
FOR THE
±583-ACRE MOUNTAIN GATE MEADOWS PROJECT

INTRODUCTION

On behalf of Premier Homes, North Fork Associates has prepared this wetland delineation report for an approximately 583-acre project site in the City of Shasta Lake, Shasta County, California. The project site is located approximately 8 miles from downtown Redding. It is bounded on the east by Interstate 5 and to the south and southwest by residential and rural residential housing. The north and northwest boundaries adjoin undeveloped land. The project site is situated in Sections 20 and 29 of Township 33 north and Range 4 west on the Project City, California 7.5-minute USGS topographic quadrangles (Figure 1). The latitude and longitude for the approximate center of the project site is 40.69556° north and 122.34893° west.

The project site is situated in the foothills of the northwest Coast Range at elevations between 800 and 950 feet above sea level. The majority of the property is oak woodland but a large component of upland and wetland grassland occurs in the eastern areas (Figure 2). The project site is undeveloped and is used by local OHV riders. Dirt roads and trails occur throughout the site.

Directions to site: Take Wonderland Boulevard exit off of Interstate 5 north , approximately 8 miles north of Redding, and turn left (west), continue over the freeway overpass, turn left (south) onto a frontage road. The project site is located along the west side of Interstate 5 from the Wonderland Boulevard exit south to the near the city of Shasta Lake.

APPLICANT'S INFORMATION

Applicant

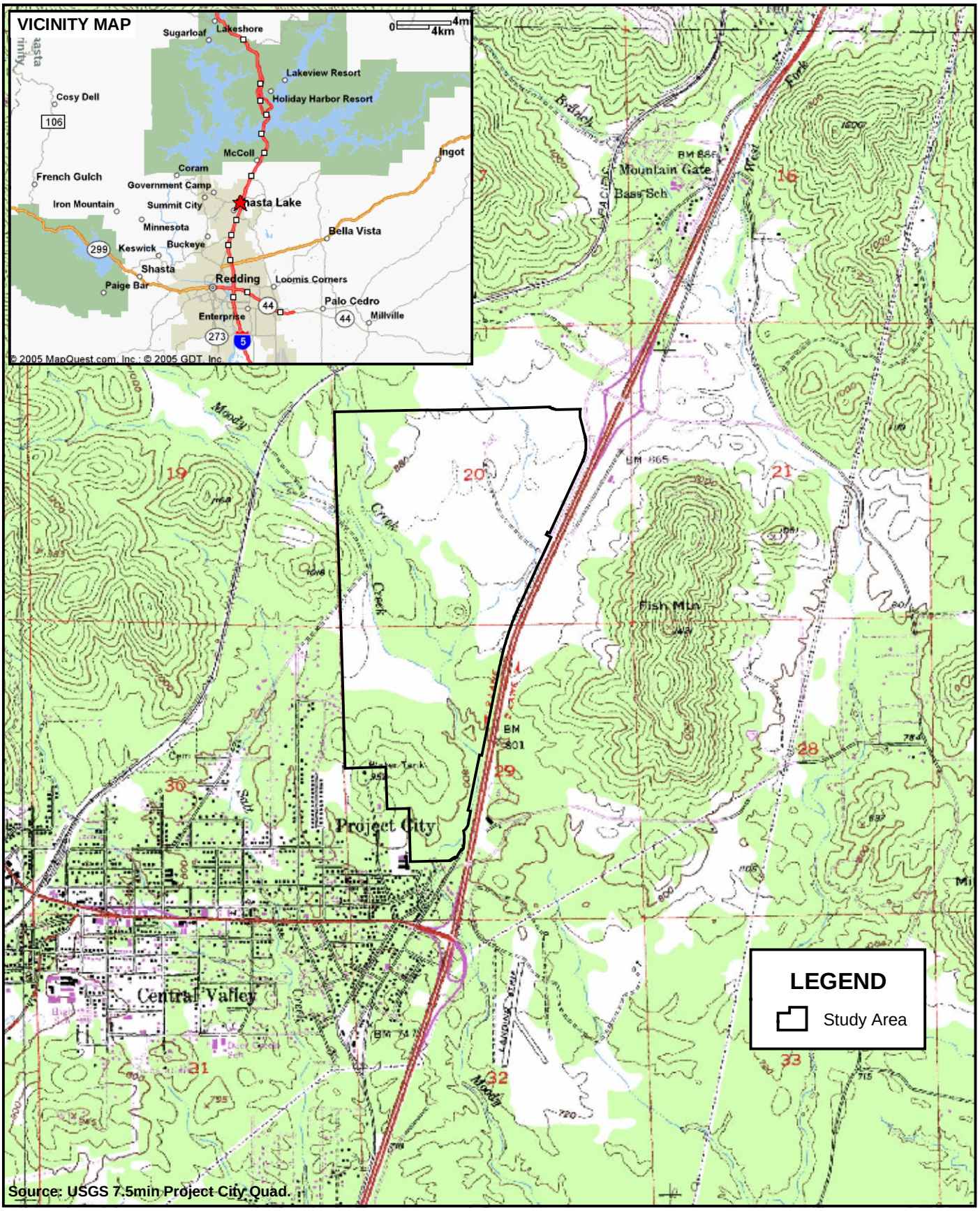
Premier Homes
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Contact: Milo Terzich

Delineator

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Contact: Jeff Glazner

METHODS

Before conducting the delineation, North Fork biologists reviewed soil information from the *Soil Survey of Shasta County Area, California*. In the field, a Munsell Color (2000) chart was used to determine moist soil colors. We also reviewed several aerial photographs of the site.



north fork associates

0 1,000 2,000 Feet

Scale 1:24000
1in = 2,000ft

Figure 1

SITE & VICINITY MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA



north fork associates

0 500 1,000 Feet

Scale 1:12000
1in = 1,000ft

Figure 2

AERIAL PHOTO

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA

Map Document: (I:\Projects\ACTIVE BIO SERVICES PROJECTS\Mountain Gate Mead NR04-048\Mtn_Gate_GIS\Aerial Map.mxd) 5/20/2005

Topographic information for the site includes the Project City, California 7.5-minute USGS topographic quadrangles and recent detailed topographic map (2-foot contour interval) provided by Sharrah Dunlap Sawyer Inc. Jeff Glazner conducted an initial site assessment in April 2004, Jeff Glazner and Kevin Thomas began the formal wetland delineation in November 2004 and Jeff Glazner and Pat Britton completed the delineation in January 2005. Mapping was done in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual*. Numerous soil test pits were dug throughout the project site, particularly in the eastern areas, and three parameter sampling points were taken at 35 representative locations (data sheets are presented in Appendix A).

Plants species (common name, scientific name and wetland status) observed during the delineation are presented in Appendix B. Scientific names follow *The Jepson Manual* (Hickman 1993), as updated by the Jepson Interchange, an online database maintained by the University and Jepson Herbaria of the University of California. The wetland status for species observed was taken from Reed (1988).

Boundary and position data was collected with a Trimble GeoXT global positioning system (sub-meter GPS) to obtain location information for sample points, wetland areas, property corners and other features. The GPS field data was corrected using the nearest available base station. The topographic map provided by Sharrah Dunlap Sawyer Inc. was used as the basemap for the wetland delineation map and is presented as Appendix C. Appendix D contains a CD ROM with the electronic files in ArcGIS shape format.

WEATHER

Weather summary data was taken from the National Weather Forecast Office, Sacramento, CA (http://www.wrh.noaa.gov). Generally, weather at the project site is Mediterranean with hot dry summers and cool rainy winters. Nearly all the precipitation falls as rain. Rainfall levels during April – September 2004 were below normal while October 2004 – January 2005 levels were above normal.

RESULTS

Vegetation

Vegetation on the Mountain Gate Meadows project site consists primarily of oak woodland, annual grassland habitat. Large herbaceous wetland areas occur in the western area. Riparian corridors are barely represented.

Oak woodlands occupy the majority of the project site, with valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), and interior live oak (*Quercus wislizeni*) as the dominant tree species. Foothill pines (*Pinus sabiniana*) are present and are widely scattered throughout the property. Valley oaks are more abundant along the open meadows, whereas blue oaks, interior live oaks and foothill pines are more suited in the uplands. The shrub layer varies from dense to absent depending on factors such as slope and soil depth. Common shrubs include white leaf manzanita (*Archtostaphylos viscida*), poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), coffeeberry (*Rhamnus tomentella*) and buck brush (*Ceanothus cuneatus*). The herbaceous (non-woody) understory is made up of a combination of ruderal and native species. Dominant herbaceous species observed included hedgehog dogtail grass (*Cynosurus echinatus*), crane's-bill geranium (*Geranium molle*), clover (*Trifolium sp.*), buttercup (*Ranunculus sp.*), sanicula

(*Sanicula sp*.), yellow star-thistle (*Centaurea solstitialis*), and blue wildrye (*Elymus glaucus*). The oak woodland on the project site is typical of such habitats in the region at this elevation.

The annual grasslands found on the property consists of medusa head (*Taeniatherum caput-medusae*), soft chess brome (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), chicory (*Cichorium intybus*), yellow star-thistle (*Centaurea solstitialis*), and hedgehog dogtail grass (*Cynosurus echinatus*). Although a few native herbaceous species are found within this community type, the majority of plants observed are better adapted to frequent disturbance regimes and persist long afterwards. Native species observed included California buttercup (*Ranunculus californica*), western buttercup (*Ranunculus occidentalis*), white brodiaea (*Triteleia hyacinthina*), and blue wildrye (*Elymus glaucus*).

Hydrology

The project site is located in the West Fork of Stillwater Creek and Churn Creek planning watershed units. The majority of water drains from the site to the south through a series of unnamed intermittent and ephemeral streams and wetland swales into Rancheria and Moody Creek. Moody Creek heads south off the project site and eventually deposits into Stillwater Creek approximately 3 miles to the southeast. A small area along the southwestern boundary of the project site drains to the west and southwest and into Salt Creek. Salt Creek heads south and eventually deposits into Churn Creek approximately 5 miles to the south. Water in both Churn Creek and Moody Creek eventually ends up in the Sacramento River.

Drainage patterns on the property flow primarily in a south and southeast direction. Intermittent and ephemeral streams converge into a single stream that parallels Interstate 5 before flowing south off the property. The grassland areas along I-5 appear to be areas of seasonally high groundwater. Portions of these grasslands are wetlands and are very different from the woodland components of the property. These areas all drain south and into the creek system.

Soils

Eleven soil units are identified and mapped on the site: Anderson gravelly sandy loam; Auburn loam, 0 to 8 percent slopes; Auburn very stony loam, 8 to 30 percent slopes; Auburn clay loam, 8 to 30 percent slopes, eroded; Churn gravelly loam, deep, 0 to 3 percent slopes; Churn loam, slightly wet, 0 to 3 percent slopes; Churn gravelly loam, 0 to 3 percent slopes; Churn gravelly loam, 3 to 8 percent slopes; Perkins gravelly loam, 8 to 15 percent slopes; Red Bluff loam, 0 to 3 percent slopes; Red Bluff loam, 3 to 8 percent slopes .

Auburn soils are loamy, Lithic Inceptisols derived from amphibolite schist. They are usually well drained with moderate permeability. The A horizon is roughly nine inches deep, with colors between 7.5YR and 5YR and chromas between 2 and 6. The B horizon is similar in color and is about 9 to 14 inches deep. Small mottles may occur in the upper portion of the profile of this primarily upland soil. Bedrock usually occurs at 14 to 24 inches.

Anderson soils consist of loamy-skeletal, mixed, active, nonacid, thermic Typic Xerofluvents. They are somewhat excessively drained soils that formed in recent alluvium from mixed sources. A representative surface layer is brown, medium acid gravelly sandy loam about 14 inches thick. In places theses soils are subject to flooding for short periods during winter.

Churn soils consist of fine-loamy, mixed, superactive, thermic Ultic Haploxeralfs. They are well drained and moderately well drained soils that formed in alluvium from mixed sources. Churn

soils have a shallow A horizon, usually up to nine inches below the surface, underlain by a dense clay layer.

Perkins soils consist of fine-loamy, mixed superactive, thermic Mollic Haploxeralfs. They are very deep, well drained soils that formed in alluvium derived from mixed rock sources. Perkins soils are on terraces and have slopes of 0 to 30 percent.

Red Bluff soils consist of fine, kaolinitic, thermic Ultic Palexeralfs. They are well drained and moderately well drained soils. Red Bluff soils are on terraces and have 0 to 9 percent slopes. The A horizon ranges from 6-15 inches, brown to yellowish red in color, underlain by clay to heavy clay loam.

WATERS OF THE UNITED STATES

Waters of the United States on the Mountain Gate Meadows project site consist of four categories including Ephemeral and Intermittent Streams (other waters), and Seasonal Wetland and Wetland Swale (wetlands) for a total of 48.74-acres (Table 1). The site does not support any vernal pools.

Table 1
Waters of the United States

Type	Acreage
Other Waters:	
Ephemeral stream	0.52
Intermittent Stream	8.21
Wetlands:	
Wetland Swale	1.36
Seasonal Wetland	38.65
Total Waters of the United States	**48.74**

Ephemeral Stream

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow. On the project site, ephemeral streams are represented by rocky channels that lack hydrophytic vegetation. We have mapped 9 of these features and a representative example can be viewed in Figures 3.

Intermittent Stream

An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow. On the project site, intermittent streams are represented by rocky channels that flow for at least half of the year and generally support sparse hydrophytic vegetation such as willows. The two primary intermittent drainages are named creeks on the Project City USGS; Moody Creek and Rancheria



Ephemeral stream. (ES-2)
Looking northeast toward I-5.



Intermittent stream. (IS-2)

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Photo Date(s): January 27, 2005

Figure 3

SITE PHOTOS

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California



Seasonal wetland. (SW-8)

Intermittent stream. Moody Creek.





Seasonal wetland. (SW-7)

north fork associates

Photo Date(s): April 15 & November 17, 2004

Figure 4

SITE PHOTOS

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California

Creek. These two creeks are similar in nature on the project site and are represented in Figures 3 and 4. We have mapped 7 Intermittent Streams on the project site.

Wetland Swale

Wetland swales are areas through which water may flow during periods of rainfall, but not with enough duration or intensity to produce the bed-and-bank morphology more typical of stream channels. Wetland swales support a high degree of hydrophytic vegetation cover, often similar to what grows in nearby seasonal wetlands. The Mountain Gate Meadows project site supports several wetland swales, typically connecting seasonal wetlands.

Seasonal Wetland

Seasonal wetlands are areas of seasonal saturation that support hydrophytic vegetation. On this project site, most of these areas are on low-gradient slopes trending to the south. Others are depressional within sloped areas. These areas do not support a vernal pool flora and hence were not classified as such.

Hydrology of the seasonal wetlands appears to be groundwater driven. We did not confirm this with backhoe pits however our observations over the seasons indicate wetness at the surface greater than would be expected based on the areas landforms. They are represented in Figure 4. The large wetlands along I-5 appear to have well drained soils in the upper part but exhibit redoximorphic characteristics. We discovered a corresponding soil/plant pattern for many of these areas. The yampah (*Perideridia kelloggii*) edge followed closely the edge of hydric soils. Yampah is a NL (Not Listed) species but clearly behaves as a wetland species in this area. Other dominant species in the wetlands are velvet grass (*Holcus lanatus*), pennyroyal (*Mentha pulegium*), coyote thistle (*Eryngium castrens*e), and iris-leaf rush (*Juncus xiphioides*). Edge species tend to be Dallis grass (*Paspalum dilatatum*) and Italian ryegrass (*Lolium multiflorum*). Chicory (*Cichorium intybus*) is abundant in the grassland areas and occurs outside the wetlands. It represents a good upland species in these areas.

SUMMARY

A wetland delineation on the ±583-acre Mountain Gate Meadows project site was conducted from April 2004 through January 2005. The majority of the project site is oak woodland while a large upland/wetland grassland complex occurs along I-5. The site contains two named creeks, Moody and Rancheria Creek that flow through the project site and off the site to the south. We have mapped total of 48.74-acres of Waters of the United States, represented by ephemeral streams, intermittent streams, wetland swales and seasonal wetlands.

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Appendix A
Wetland Data Sheets

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/17/04
Applicant: Premier Homes
Sample Point: 1
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20+29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Taeniantherum caput-medusae	45	NL	*Bromus diandrus*	10	NL
Cichorium intybus	35	NL	*Convolvulus arvensis*	10	NL

Percentage of dominant species that are OBL, FACW, or FAC: 0%
Remarks:

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/4 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Gravelly loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

No evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Waters of the U.S.: ☐ Yes ☑ No
Wetland: ☐ Yes ☑ No
Remarks:

Upland location near northern property line.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Applicant: Premier Homes
Investigators: JG, KT
County: Shasta
Quad(s): **Project City**
Date: 11/17/04
Sample Point: 2
State: California
Section 20+29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Cichorium intybus	40	NL	*Taeniantherum caput-medusae*	5	NL
Festuca sp.	50	FAC	*Juncus sp.*	5	FACW

Percentage of dominant species that are OBL, FACW, or FAC: 50%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Gravelly loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Lacks evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Lower on gradient but lacks evidence of seasonal saturation.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/17/04
Applicant: Premier Homes
Sample Point: 3
Investigators: KT, JG
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Cichorium intybus	25	NL	*Juncus sp.*	5	FACW
Poacaeae (unknown)	50	FAC			
Paspalum dilatatum	20	FAC			

Percentage of dominant species that are OBL, FACW, or FAC: 66%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Faint mottles, gravelly loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Lacks evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland data point near wetland edge.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/17/04
Applicant: Premier Homes
Sample Point: 4
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Perideridia kelloggii	60	NL	*Juncus. sp*	10	FACW
Paspalum dilatatum	20	FAC	*Carex sp.*	5	FACW
			Unknown	5	FACW

Percentage of dominant species that are OBL, FACW, or FAC: 50%
Remarks: Near upper edge of Perideridia.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slpes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: 7.5 YR 3/2.5 Mottle Color: 5 YR 4/6

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☑ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
Mottles.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Evidence seasonal saturation.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No

Remarks:
Edge of seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/17/04
Applicant: Premier Homes
Sample Point: 5
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Paspalum dilatatum	60	FAC	*Juncus sp.*	10	FACW
Perideridia kelloggii	20	NL			

Percentage of dominant species that are OBL, FACW, or FAC: 50%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: 7.5 YR 3/2.5 Mottle Color: 5 YR 4/6
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☑ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Evidence of prolonged saturation.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No
Remarks:
Seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Applicant: Premier Homes
Investigators: JG/PB
County: Shasta
Quad(s): **Project City**
Date: 1/27/05
Sample Point: 6
State: California
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Cichorium intybus	50	NL	*Juncus occidentallis*	5	FACW
Poaceae (unknown)	25	FAC	*Perideridia kelloggii*	10	NL
			Taeninantherum caput-medusae	10	NL

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 yr 4/3 Mottle Color: N/A

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☑ Concretions
- ☐ Other

Remarks:

Clayey loam, Mg staining.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☑ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks. Currently raining.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison point to #7.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 7
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Juncus xiphioides	25	OBL	*Cichorium intybus*	10	NL
Paspalum dilatatum	25	FAC	*Mentha puligum*	5	OBL
Perideridia kelloggii	25	NL	*Rumex crispus*	5	FACW-
			Poaceae (unknown)	5	FAC

Percentage of dominant species that are OBL, FACW, or FAC: 66%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/2 Mottle Color: 5 YR 4/6

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water: surface

Primary Indicators:

- ☐ Inundated
- ☑ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No

Remarks:

Upper limit of seasonal wetland along I-5.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 8
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33N Range 4W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Chickorium intybus	60	NL	*Juncus occidentallis*	10	FACW
Poaceae (unknown)	25	FAC	*Holcus lanatus*	5	FAC

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/3 Mottle Color: faint

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks. Heavy rains during evaluation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Suspect area between large wetland area. Lacks evidence of prolonged saturation.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 9
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Taeniantherum caput-medusae	85	NL	*Juncus occidentalis*	10	FACW
			Cichorium intybus	5	NL

Percentage of dominant species that are OBL, FACW, or FAC: 0 %
Remarks:

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☐ Yes	☑ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison point to 10.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows Date: 1/27/05
Applicant: Premier Homes Sample Point: 10
Investigators: JG/PB County: Shasta State: California
Quad(s): **Project City** Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Paspalum dilatatum	45	FAC	*Juncus occidentalis*	10	FACW
Holcus lanatus	20	FAC	*Cichorium intybus*	5	NL
Mentha pulgeum	20	OBL			

Percentage of dominant species that are OBL, FACW, or FAC: 100 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/2 Mottle Color: 5 YR 4/6
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
Clayey loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water: to surface
Primary Indicators:

- ☐ Inundated
- ☑ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Evidence of prolonged seasonal saturation. Above average rainfall in recent weeks.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No Waters of the U.S.: ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No Wetland: ☑ Yes ☐ No
Remarks:
Upper edge of seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 11
Investigators: JG
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Perideridia kelloggii	35	NL	*Paspalum dilatatum*	15	FAC
Holcus lanatus	35	FAC	*Deschampsia sp.*	10	FACW
			Phleum pratense	5	FACU

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Yampah 5' tall. Dense vegetation through this area.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 10 YR 2/2 Mottle Color: Faint

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Organic. Clay loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Moist to surface - recent rains. Marginal evidence of prolonged seasonal saturation.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No

Remarks:

Seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 12
Investigators: JG
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Poaceae (unknown)	60	FAC	*Mentha pulgium*	5	OPN
			Paspalum dilatatum	15	FAC
			Cyperus erigrostis	5	FACW
			Chickorium intybus	5	NL
			Rumex pulcher	5	FAC+
			Taeniantherum caput-medusae	5	NL

Percentage of dominant species that are OBL, FACW, or FAC: 100 %
Remarks:

Mix of species.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☑ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Lacks conclusive evidence of prolonged seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Suspect area based on vegetation. Slope(+/- 5%) and probably too steep to allow for prolonged saturation. Data point taken just below wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/26/05
Applicant: Premier Homes
Sample Point: 13
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Taeninantherum caput-medusa	90	NL	*Cichorium intybus*	5	NL
			Juncus occidentalis	5	FACW

Percentage of dominant species that are OBL, FACW, or FAC: 0 %
Remarks:
Upland vegetation.

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/2 Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
Clayey loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Waters of the U.S.: ☐ Yes ☑ No
Wetland: ☐ Yes ☑ No
Remarks:
Upland comparison to point 14.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/26/05
Applicant: Premier Homes
Sample Point: 14
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Juncus xiphioides	55	OBL	*Holcus lanatus*	5	FAC
Juncus occidentalis	20	FACW			
Carex sp.	20	FAC+			

Percentage of dominant species that are OBL, FACW, or FAC: 100%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/2 Mottle Color: 5 YR 4/6

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Saturated to surface. Above normal rainfall in recent weeks.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No			
Hydric Soils Present?	☑ Yes	☐ No	Waters of the U.S.:	☑ Yes	☐ No
Wetland Hydrology Present?	☑ Yes	☐ No	Wetland:	☑ Yes	☐ No

Remarks:

Seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: PRemier Homes
Sample Point: 15
Investigators: JG
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Eryngium castrense	40	FACW	*Cichorium intybus*	5	NL
			Poaceae sp.	10	FAC
			Ranunculus occidentalis	15	FACW
			Juncus oxymeris	15	FACW
			Mentha pulgeum	15	OBL

Percentage of dominant species that are OBL, FACW, or FAC: 100%
Remarks:

Coyote thistle is visually dominant in wetland area.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/2.5 Mottle Color: 5 YR 4/6

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☑ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Soil moist from recent rains. Evidence of near surface seasonal saturation - inferred from soil & vegetation.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No

Remarks:

Seasonal wetland. Slight depressional area.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 16
Investigators: JG
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Poaceae sp.	60	FACW	*Juncus occidentalis*	trace	FACW
Cichorium intybus	35	NL	*Mentha pulgium*	5	OBL
			Verbascum blattaria	trace	FACW
			Rumex pulcher	trace	FAC+
			Paspalum dilatatum	trace	FAC

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn loam, slightly wet, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 4/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clayey loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Soil moist from recent rains. Lacks evidence of prolonged near surface saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison to 15.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 17
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Mentha pulegium	30	OBL	*Rumex crispus*	15	FACW-
Lolium multiflorum	30	FAC+	*Chickorium intybus*	15	NL
			Eryngium sp.	5	FACW
			Rumex pulcher	5	FAC+
			Polygonium arenastrum	trace	FAC

Percentage of dominant species that are OBL, FACW, or FAC: 100 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 3/2.5 Mottle Color: 5 YR 4/6
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☑ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
Gravelly clay loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Deppression adjacent to stream, likely catches high flows.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No
Remarks:
Seasonal wetland near intermittent stream.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 18
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Lolium multiflorum	45	FAC*	*Lactuca serriola.*	trace	FAC
Taeniantherum caput-medusae	45	NL	*Rumex sp.*	10	FAC+
			Epilobium densiflorum	trace	OBL
			Cichorium intybus	Trace	NL

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Faint mottling, loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Upland topography no evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison to point 17.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Applicant: Premier Homes
Investigators: JG, KT
County: Shasta
Quad(s): **Project City**
Date: 11/18/04
Sample Point: 19
State: California
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Eryngium castrense	25	FACW	*Poaceae (grass)*	10	FAC
Mentha pulegium	20	OBL	*Juncus xiphioides*	15	OBL
			Juncus occidentalis	10	FACW
			Paspalum dilatatum	5	FAC
			Plantago lancedata	trace	FAC-
			Perideridia sp.	5	VARIES

Percentage of dominant species that are OBL, FACW, or FAC: 100%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 3/2 Mottle Color: 5 YR 5/8

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Clay loam.

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Evidence of seasonal saturation.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☑ Yes ☐ No
Hydric Soils Present? ☑ Yes ☐ No
Wetland Hydrology Present? ☑ Yes ☐ No

Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☑ Yes ☐ No

Remarks:

Seasonal wetland.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 20
Investigators: JG, KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Taeninentherum caput-medusae	35	NL	*Cichorium intybus*	10	NL
Poaceae (unknown)	20	FAC	*Hypericum perforatum*	trace	NL
Cynosurus echinatus	20	NL	*Paspalum dilatatum*	5	FAC
			Juncus occidentalis	10	FACW

Percentage of dominant species that are OBL, FACW, or FAC: 33%
Remarks:
Cichory prevalent at wetland edge.

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 4/3 Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
Gravelly clay loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Lacks evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☑ No
Hydric Soils Present? ☐ Yes ☑ No
Wetland Hydrology Present? ☐ Yes ☑ No
Waters of the U.S.: ☐ Yes ☑ No
Wetland: ☐ Yes ☑ No
Remarks:
Upland comparison point to #19.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows Date: 11/18/04
Applicant: Premier Homes Sample Point: 21
Investigators: JG, KT County: Shasta State: California
Quad(s): **Project City** Section Township N Range W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Juncus xiphioides, Eleocharis macrostachya, Mentha pulegium in stream channel

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Chum gravelly loam, 0 to 3 percent slopes

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

No soil data taken.

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Relatively flat topo allows water to sit in stream bed.

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☐ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☐ No	Waters of the U.S.: ☑ Yes	☐ No
Wetland Hydrology Present?	☐ Yes	☐ No	Wetland: ☐ Yes	☑ No

Remarks:

Highly vegetated Intermittent stream.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11-18-04
Applicant: Premier Homes
Sample Point: 22
Investigators: JG/KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Trifolium hirtum	30	NL	*Plantago lanceolata*	5	FAC-
Taeninantherum caput-medusae	35	NL	*Bromus diandrus*	10	NL
			Bromus hordeaceus	10	FACU-
			Cynosurus echinatus	5	NL
			Ranunculus occidentalis	5	FACW

Percentage of dominant species that are OBL, FACW, or FAC: 0%
Remarks:

Large annual grassland area.

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, 0 to 3 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 4/4 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Loamy.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Soil moist from recent rains. No evidence of seasonal saturation.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☐ Yes	☑ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Low spot in large grassland area.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 23
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Poaceae (unknown)	30	FAC	*Eryngium sp.*	10	FACW
Lolium sp.	10	FAC*	*Juncus occidentallis*	10	FACW
			Centromadia fitchii	10	NL
			Rumex pulcer	10	FAC+
			Ranunculus sp.	10	NL
			Trifolium sp.	10	VARIES

Percentage of dominant species that are OBL, FACW, or FAC: 100 %
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Red Bluff loam, 3 to 8 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 YR 4/4 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water: surface

Primary Indicators:

- ☐ Inundated
- ☑ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks. Currently raining.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Suspect area lacks wetland hydrology.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 24
Investigators: KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Perideridia, Rumex, Mimulus - many interior live oak along boundary.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Anderson gravelly sandy loam

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

No data taken, rocky streambed

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

20 ft. wide intermittent stream

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☐ Yes ☑ No
Remarks:

Intermittent stream. Near intersection of stream and OHV trail

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/26/05
Applicant: Premier Homes
Sample Point: 25
Investigators: PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Poaceae (unknown)	100	FAC			

Percentage of dominant species that are OBL, FACW, or FAC: 100%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Red Bluff loam, 3 to 8 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5YR4/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Sheet flow into upland swale creates ephemeral drainage below. Currently raining.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison point to 26. This location is just above beginning of cut channel. Lacks bed and bank morphology.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/26/05
Applicant: Premier Homes
Sample Point: 26
Investigators: PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Red Bluff loam, deep, 0 to 3 percent slopes.

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Narrow channel flowing at <1 cfs from current rain.

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☐ Yes ☑ No
Remarks:
Ephemeral stream data point located at top of channel.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/26/05
Applicant: Premier Homes
Sample Point: 27
Investigators: PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Stream lacks riparian component. Oak woodland habitat to stream edge.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Churn gravelly loam, deep, 0 to 3 percent slopes.

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Rocky stream bed.

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Flowing ~20 cfs. Ordinary high water mark ~ 20 ft / across.

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☐ Yes ☑ No
Remarks:

Unnamed intermittent stream.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 28
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Poaceae (unknown)	60	FAC	*Eryngium sp.*	5	FACW
unknown seedlings	30	FAC	*Centromadia fitchii*	5	NL

Percentage of dominant species that are OBL, FACW, or FAC: 100%
Remarks:

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Red Bluff loam, 3 to 8 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 4/6 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Coarse gravelly loam.

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water: 3"

Primary Indicators:

- ☐ Inundated
- ☑ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks. Ground saturated from current rainfall.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Meadow area suspect on photo.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 29
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:
Upland vegetation adjacent.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Auburn loam, 0 to 8 percent slopes.

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:
No soil data taken.

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:
Offsite water. Channelized. 4 ft wide. Flowing at ~5 cfs.

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☐ Yes ☑ No
Remarks:
Ephemeral stream.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows Date: 11/18/04
Applicant: Premier Homes Sample Point: 30
Investigators: JG County: Shasta State: California
Quad(s): **Project City** Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Salix species, Cephalanthus occidentalis, Vitis californica, Populus freemontii, Cynodon dactylon present.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Anderson gravelly sandy loam.

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Flowing (+/- 1 cfs).

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No Waters of the U.S.: ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No Wetland: ☐ Yes ☑ No
Remarks:

Intermittent streambed adjacent to I-5. Channelized. 20' wide rocky.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 31
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Taeniantherum caput-medusae	40	NL	*Bromus hordeaceus*	10	NL
Poaceae (unknown)	40	FAC	*Bromus diandrus*	10	NL

Percentage of dominant species that are OBL, FACW, or FAC: 50 %
Remarks:

Upland vegetation.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Auburn very stoney loam, 8 to 30 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5YR 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☐ No ☑ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Topographic swale just above beginning of ephemeral drainage lacks bed & bank.
Sheet flow into upland swale create ephemeral stream below.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison point to # 32.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 32
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %
Remarks:

Flows through grassland and oak woodland.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Auburn very stoney loam, 8 to 30 percent slopes.

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:
Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:
Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Lots of rain in last few days.
Drainage becomes 4-5ft wide before confluence of major creek.
Sheet flow develops cut channel with minimal scouring/trickle flow < 1 cfs.

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No
Waters of the U.S.: ☑ Yes ☐ No
Wetland: ☐ Yes ☑ No
Remarks:

Ephemeral drainage.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadoes
Date: 11/18/04
Applicant: Premier Homes
Sample Point: 33
Investigators: KT
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status

Percentage of dominant species that are OBL, FACW, or FAC: %

Remarks:

Plantain, Ficus, Rubis discolor, Selagenella, wild grape, Salix sp. present.

Wetland Vegetation ☐ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Auburn very stony loam, 8 to 30 percent slopes

Mottled? ☐ Yes ☐ No Gleyed? ☐ Yes ☐ No Matrix Color: Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

No soil data taken.

Wetland Soils ☐ YES ☐ NO

HYDROLOGY

Inundated? Yes ☐ No ☐ Saturated? Yes ☐ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Wetland Hydrology ☐ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present? ☐ Yes ☐ No
Hydric Soils Present? ☐ Yes ☐ No Waters of the U.S.: ☑ Yes ☐ No
Wetland Hydrology Present? ☐ Yes ☐ No Wetland: ☐ Yes ☑ No

Remarks:

Intermittent stream with rocky stream bottom. Flowing water. Substantially channelized. Near to I-5.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 34
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Mentha pulegium	85	OBL	*Rumex crispus*	5	FACW-
			Perideridia sp.	trace	FAC
			Epilobium densiflorum	10	OBL

Percentage of dominant species that are OBL, FACW, or FAC: 100 %
Remarks:

Cephalanthus occidentallis patchy.

Wetland Vegetation ☑ YES ☐ NO

SOILS

Map Unit Name (Series/Phase): Auburn very stoney loam, 8 to 30 percent slopes.

Mottled? ☑ Yes ☐ No Gleyed? ☐ Yes ☑ No Matrix Color: 5 YR 4/2 Mottle Color: 5 YR 4/6

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☑ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☑ YES ☐ NO

HYDROLOGY

Inundated? Yes ☑ No ☐ Saturated? Yes ☑ No ☐ Depth of/to Free Water:

Primary Indicators:

- ☑ Inundated
- ☑ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Linear depressional wetland. Water from off site. When raining water sits. When high water event from offsite runs ephemerally.

Wetland Hydrology ☑ YES ☐ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☑ Yes	☐ No			
Hydric Soils Present?	☑ Yes	☐ No	Waters of the U.S.:	☑ Yes	☐ No
Wetland Hydrology Present?	☑ Yes	☐ No	Wetland:	☑ Yes	☐ No

Remarks:

Seasonal wetland in drainage.

ROUTINE WETLAND DETERMINATION FORM

Project/Site: Mountain Gate Meadows
Date: 1/27/05
Applicant: Premier Homes
Sample Point: 35
Investigators: JG/PB
County: Shasta
State: California
Quad(s): **Project City**
Section 20 + 29 Township 33 N Range 4 W
Atypical Situation? ☐ Yes ☑ No Potential Problem Area? ☐ Yes ☑ No Normal Circumstances? ☑ Yes ☐ No

VEGETATION

Dominant Plant Species	% Cover	Status	Non-Dominant Plant Species	% Cover	Status
Geranium molle	70	NL	*Carduus pycnocephalus*	10	NL
			Poaceae (unknown)	15	FAC
			Quercus douglasii	5	NL

Percentage of dominant species that are OBL, FACW, or FAC: 0%
Remarks:

Wetland Vegetation ☐ YES ☑ NO

SOILS

Map Unit Name (Series/Phase): Auburn very stoney loam, 8 to 30 percent slopes.

Mottled? ☐ Yes ☑ No Gleyed? ☐ Yes ☑ No Matrix Color: 7.5 yr 3/3 Mottle Color:

Redoximorphic Features:

- ☐ Gleyed or Low Chroma Colors
- ☐ Low Chroma w/ Mottles
- ☐ Aquic Moisture Regime
- ☐ Listed on Local Hydric Soil List
- ☐ Reducing Conditions
- ☐ Sulfidic Odor
- ☐ Concretions
- ☐ Other

Remarks:

Wetland Soils ☐ YES ☑ NO

HYDROLOGY

Inundated? Yes ☐ No ☑ Saturated? Yes ☑ No ☐ Depth of/to Free Water: 6"

Primary Indicators:

- ☐ Inundated
- ☐ Saturated in Upper 12"
- ☐ Water Marks/Drift Lines
- ☐ Sediment Deposit
- ☐ Algal Matting
- ☐ Drainage Patterns in Wetlands

Secondary Indicators

- ☐ Oxidized Root Channels in Upper 12"
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☐ Other

Remarks:

Above average rainfall in recent weeks/ground saturated from current rain.

Wetland Hydrology ☐ YES ☑ NO

WETLAND/WATERS DETERMINATION

Hydrophytic Vegetation Present?	☐ Yes	☑ No		
Hydric Soils Present?	☐ Yes	☑ No	Waters of the U.S.: ☐ Yes	☑ No
Wetland Hydrology Present?	☐ Yes	☑ No	Wetland: ☐ Yes	☑ No

Remarks:

Upland comparison to #34.

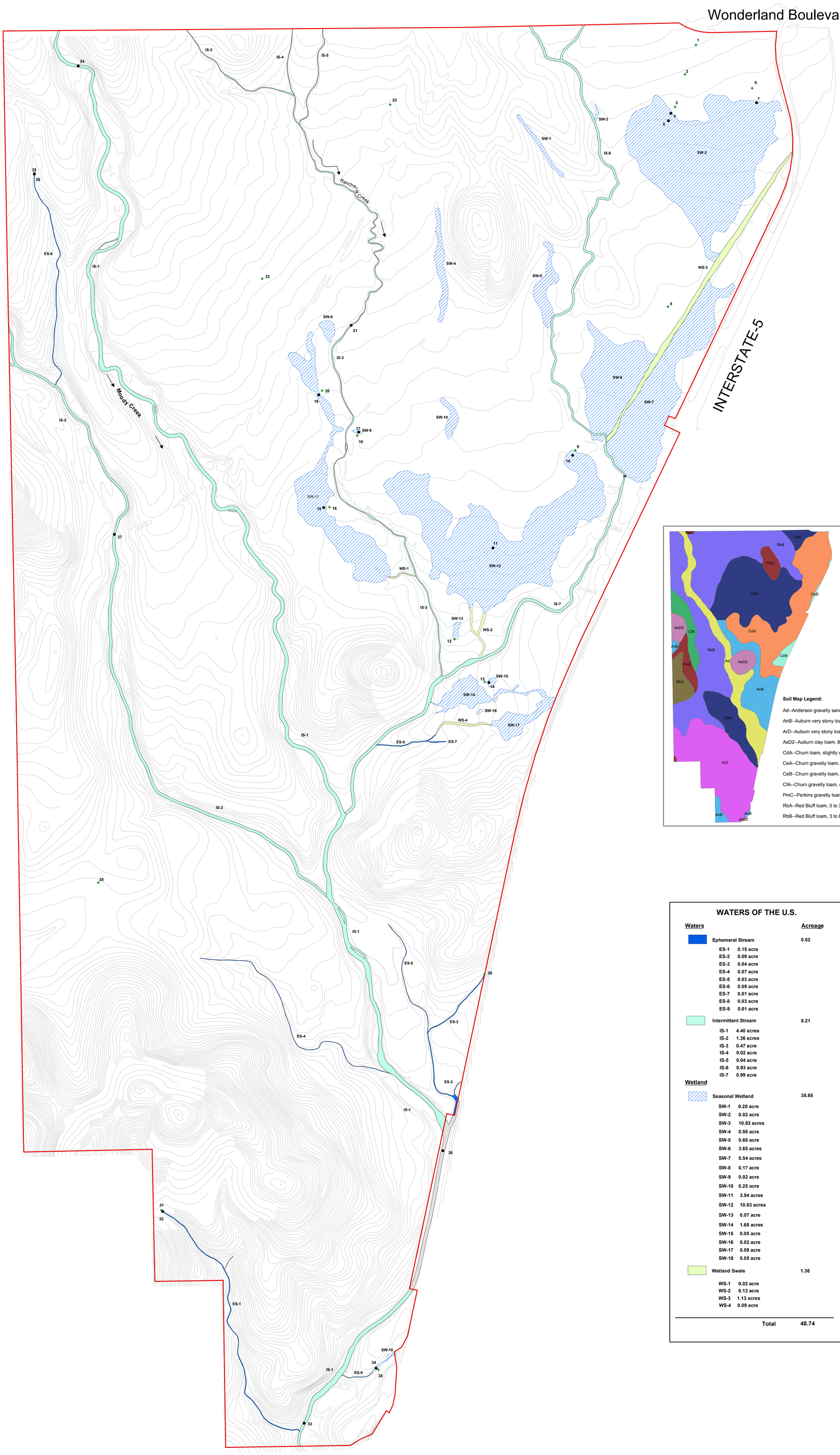
Appendix B
Wetland Status of Plant Species Observed Near Wetlands

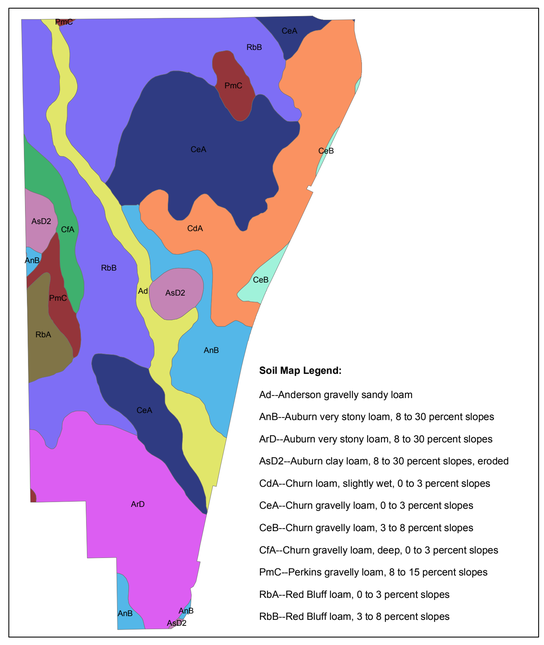
Appendix B. Wetland Status of Plant Species Observed Near Wetlands

Common Name	Taxon	Wetland Status
Baltic rush	*Juncus balticus*	OBL
Bermuda grass	*Cynodon dactylon*	FAC
Bindweed	*Convolvulus arvensis*	-
Blue oak	*Quercus douglasii*	-
Blue wildrye	*Elymus glaucus*	FACU
Buck brush	*Ceanothus cuneatus cuneatus*	-
California buttercup	*Ranunculus californicus*	FAC
California button willow	*Cephalanthus occidentalis californicu*	OBL
California coffeeberry	*Rhamnus californica californica*	-
California wild grape	*Vitis californica*	FACW
Chicory	*Cichorium intybus*	-
Clover	*Trifolium sp.*	VARIES
Common timothy	*Phleum pratense*	FACU
Common velvet grass	*Holcus lanatus*	FAC
Coyote-thistle	*Eryngium castrense*	FACW
Crane's-bill geranium	*Geranium molle*	-
Creeping spikerush	*Eleocharis macrostachya*	OBL
Curly dock	*Rumex crispus*	FACW-
Dallis grass	*Paspalum dilatatum*	FAC
Dense-flower spike-primrose	*Epilobium densiflorum*	OBL
English plantain	*Plantago lanceolata*	FAC-
Eryngium	*Eryngium sp.*	VARIES
Fiddle dock	*Rumex pulcher*	FAC+
Fig	*Ficus carica*	-
Fitch's spikeweed	*Centromadia fitchii*	-
Foothill pine	*Pinus sabiniana*	-
Fremont cottonwood	*Populus fremontii fremontii*	FACW
Hedgehog dogtail	*Cynosurus echinatus*	-
Himalayan blackberry	*Rubus discolor*	FACW*
Hoary coffeeberry	*Rhamnus tomentella tomentella*	-
Interior live oak	*Quercus wislizeni*	-
Iris-leaf rush	*Juncus xiphioides*	OBL
Italian ryegrass	*Lolium multiflorum*	FAC*
Italian thistle	*Carduus pycnocephalus*	-
Kellogg's yampah	*Perideridia kelloggii*	-
Klamathweed	*Hypericum perforatum*	-
Medusa-head	*Taeniatherum caput-medusae*	-
Monkeyflower	*Mimulus sp.*	VARIES

Common Name	Taxon	Wetland Status
Moth mullein	*Verbascum blattaria*	FACW
Oracle oak	*Quercus morehus*	-
Pennyroyal	*Mentha pulegium*	OBL
Pointed rush	*Juncus oxymeris*	FACW
Ripgut grass	*Bromus diandrus*	-
Rose clover	*Trifolium hirtum*	-
Rush	*Juncus sp.*	VARIES
Sanicula	*Sanicula sp.*	-
Sedge	*Carex sp.*	VARIES
Slender rush	*Juncus occidentalis*	FACW
Soft chess	*Bromus hordeaceus*	FACU-
Spike-moss	*Selaginella sp.*	-
Tall flatsedge	*Cyperus eragrostis*	FACW
Toyon	*Heteromeles arbutifolia*	-
Valley oak	*Quercus lobata*	FAC*
Western buttercup	*Ranunculus occidentalis*	FACW
Western poison-oak	*Toxicodendron diversilobum*	-
White brodiaea	*Triteleia hyacinthina*	FACW*
Whiteleaf manzanita	*Arctostaphylos viscida*	-
Willow	*Salix sp.*	VARIES
Yellow star-thistle	*Centaurea solstitialis*	-

Appendix C
Wetland Delineation Map





Soil Map Legend:

Ad--Anderson gravelly sandy loam

AnB--Auburn very stony loam, 8 to 30 percent slopes

ArD--Auburn very stony loam, 8 to 30 percent slopes

AsD2--Auburn clay loam, 8 to 30 percent slopes, eroded

CdA--Churn loam, slightly wet, 0 to 3 percent slopes

CeA--Churn gravelly loam, 0 to 3 percent slopes

CeB--Churn gravelly loam, 3 to 8 percent slopes

ClA--Churn gravelly loam, deep, 0 to 3 percent slopes

PmC--Perkins gravelly loam, 8 to 15 percent slopes

RbA--Red Bluff loam, 0 to 3 percent slopes

RbB--Red Bluff loam, 3 to 8 percent slopes

WATERS OF THE U.S.

Waters		Acreage
Ephemeral Stream		0.52
	ES-1 0.15 acre	
	ES-2 0.09 acre	
	ES-3 0.04 acre	
	ES-4 0.07 acre	
	ES-5 0.03 acre	
	ES-6 0.09 acre	
	ES-7 0.01 acre	
	ES-8 0.03 acre	
	ES-9 0.01 acre	
Intermittent Stream		8.21
	IS-1 4.40 acres	
	IS-2 1.36 acres	
	IS-3 0.47 acre	
	IS-4 0.02 acre	
	IS-5 0.04 acre	
	IS-6 0.93 acre	
	IS-7 0.99 acre	
Wetland		
Seasonal Wetland		38.65
	SW-1 0.20 acre	
	SW-2 0.02 acre	
	SW-3 10.83 acres	
	SW-4 0.56 acre	
	SW-5 0.68 acre	
	SW-6 3.65 acres	
	SW-7 5.54 acres	
	SW-8 0.17 acre	
	SW-9 0.02 acre	
	SW-10 0.25 acre	
	SW-11 3.94 acres	
	SW-12 10.83 acres	
	SW-13 0.07 acre	
	SW-14 1.68 acres	
	SW-15 0.05 acre	
	SW-16 0.02 acre	
	SW-17 0.09 acre	
	SW-18 0.05 acre	
Wetland Swale		1.36
	WS-1 0.02 acre	
	WS-2 0.12 acre	
	WS-3 1.13 acres	
	WS-4 0.09 acre	
	Total	48.74

north fork associates

Notes:
- Topographic base map provided by Sharrah Dunlap Sawyer, Inc, 2004.
- Field delineation conducted in April and November of 2004 and January of 2005 by Jeff Glazner, Pat Britton and Kevin Thomas.
- This map subject to U.S. Army Corps of Engineers Verification.

Appendix C

WETLAND DELINEATION MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA

March 25, 2005

Appendix D
GIS Files

GIS files are provided to the Corps and are available upon request.

Appendix 4.6-4

WETLAND DELINEATION – OFF-SITE ROADWAY EXTENSION

WETLAND DELINEATION
FOR THE

±12-ACRE SHASTA WAY COMMERCIAL STUDY AREA

CITY OF SHASTA CITY, SHASTA COUNTY, CALIFORNIA



Prepared for:
MOUNTAIN GATE, LLC
5241 ARNOLD AVE
SACRAMENTO, CALIFORNIA 95652

Prepared by:

Salix consulting, inc.
12240 Herdal Drive, Ste. 14,
Auburn, California 95603
(530) 888-0130

OCTOBER 2013

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APPENDICES

Appendix A. Wetland Data Sheets
Appendix B. Plant Species Observed on the Project Study Area

WETLAND DELINEATION
FOR THE
±12-ACRE SHASTA WAY COMMERCIAL STUDY AREA

INTRODUCTION

On behalf of Mountain Gate, LLC, Salix Consulting, Inc. (Salix) conducted a wetland delineation of the ±12-acre Shasta Way Commercial study area. The study area is located approximately eight miles north of Redding at the northern limits of the City of Shasta Lake (Figure 1). It is bounded on the east by Cascade Boulevard, on the west by Shasta Way, on the south by Kennett Street and Shasta Dam Boulevard, and on the north by Grand Avenue and residential development (Figure 2). The study area is situated in Section 29 of Township 33 North and Range 4 West on the Project City, California 7.5-minite USGS topographic quadrangles. The latitude and longitude for the approximate center of the project site is 40°40'53" north and 122°21'05" west. The nearest waterbody is Lake Shasta, which is located approximately four miles to the northwest of the study area.

The study area is being considered for southern access to the proposed Mountain Gate at Shasta project to the north and commercial development to serve the City of Shasta Lake. Several streets serving previous development in the area, which has been demolished, traverse the study area.

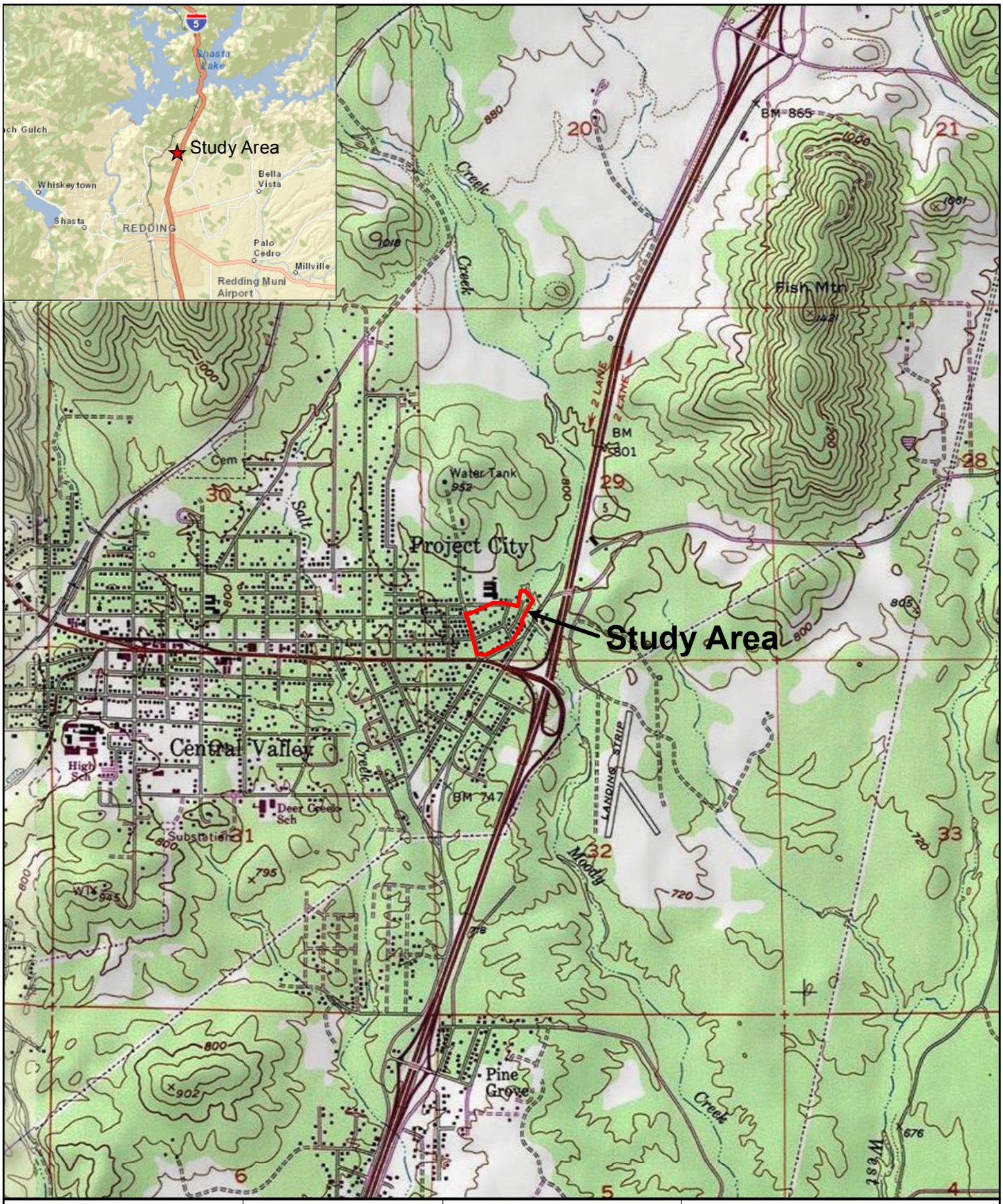
CONTACT INFORMATION

Property Owner:
Mountain Gate, LLC
5241 Arnold Ave
Sacramento, California 95652
Phone: 916/922-7600
Contact: Ron Alvarado

Delineator:
Salix Consulting, Inc.
12240 Herdal Drive, Ste. 14
Auburn, California 95603
Phone: (530) 888-0130
Contact: Jeff Glazner

METHODOLOGY

Waters of the United States were delineated on June 14, 2013. The delineation was conducted according to the 1987 Corps Manual (Environmental Laboratory 1987) as amended by the Arid West Regional Supplement (U.S. Army Corps of Engineers 2008). All areas of the site were observed by walking and were evaluated as necessary to determine the presence or absence of potential waters of the U.S. At select locations, information about vegetation, soils, and hydrology was recorded on standard Wetland Delineation Data Forms (Appendix A). Potential waters of the U.S. were mapped with a Trimble GeoXH to submeter accuracy.



Salix consulting, inc.

N

0 1,000 2,000
Feet

Base map: Project CIty, CA, USGS 7.5 minute topographic quadrangle, 1976

Figure 1

VICINITY MAP

Shasta Way Commercial Parcel

City of Shasta Lake, Shasta County, CA

June 13, 2013



Salix consulting, inc.

N

0 100 200
Feet

Aerial Photo: Google 2012

Figure 2

AERIAL PHOTO

Shasta Way Commercial Parcel

City of Shasta Lake, Shasta County, CA

June 25, 2013

Information on soils was obtained from the USDA/NRCS online service at http://websoilsurvey.nrcs.usda.gov for the Shasta County Area. In the field, a Munsell Color (2000) chart was used to determine moist soil colors. Appendix B is a list of plants observed during the delineation, along with the scientific name and wetland status of each species. Where a plant species observed has a wetland indicator status (not UPL), plant nomenclature follows Lichvar (2012). Otherwise, species names are aligned with the *The Jepson Manual* (Baldwin 2012).

Field data collected with the GPS were differentially corrected and were used to create a Wetland Delineation Map (Figure 6) using Arc GIS 10 software.

FINDINGS

Climate

Climate information in this report describes typical weather at the Redding Municipal Airport (Redding, California, United States) weather station (approximately eight miles to the south) over the course of an average year. It is based on the historical records from 1974 to 2012.

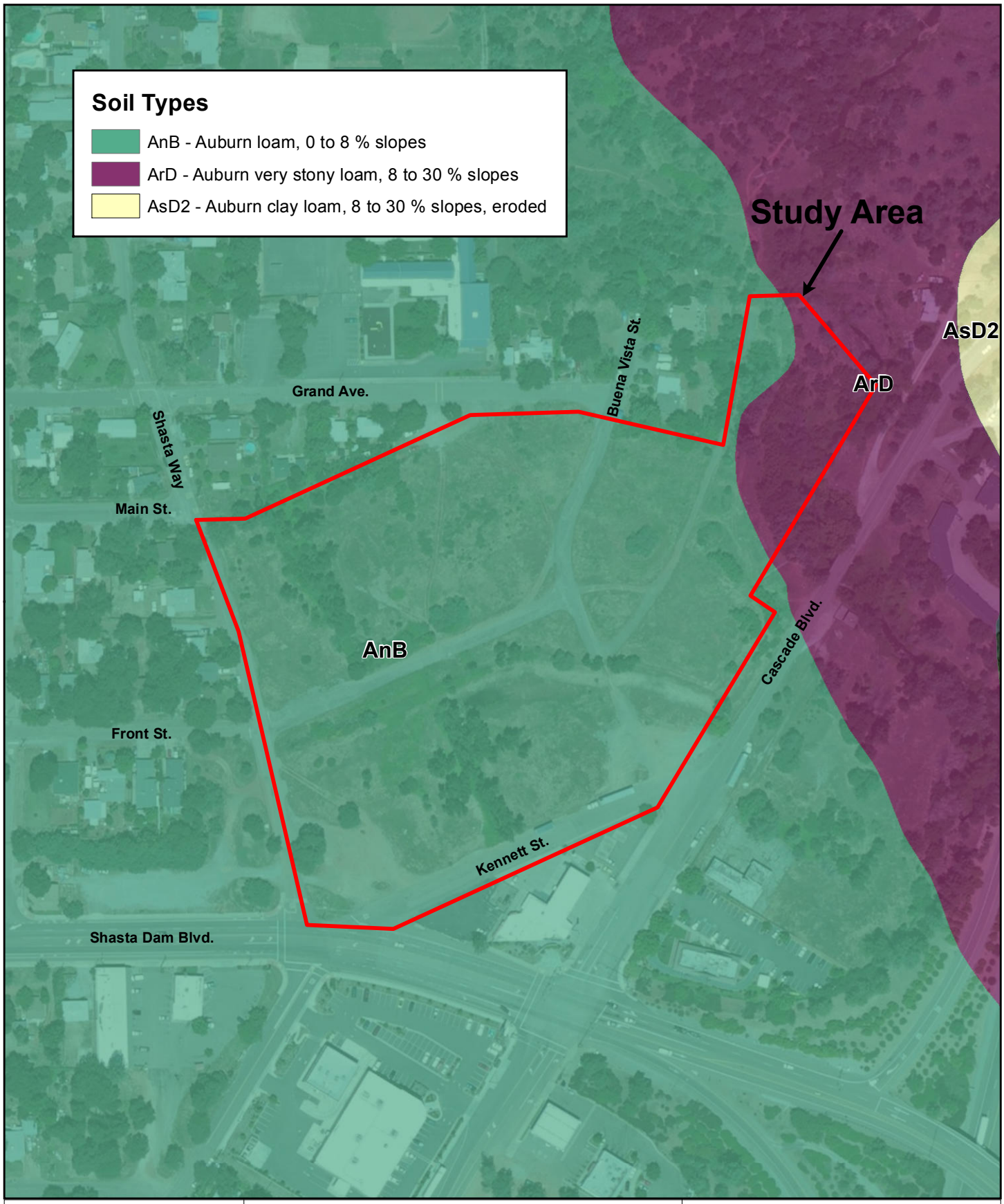
Redding has a Mediterranean climate with dry hot summers and mild winters. Over the course of a year, the temperature typically varies from 37°F to 98°F and is rarely below 28°F or above 106°F. The warm season lasts from June 15 to September 16 with an average daily high temperature above 89°F. On average, the hottest day of the year occurs July 23, with an average high of 98°F and low of 68°F. The cold season lasts from November 14 to March 8 with an average daily high temperature below 62°F. The coldest day of the year generally occurs in late December, with an average low of 37°F and high of 53°F.

The median cloud cover ranges from 0% (clear) to 69% (partly cloudy). The sky is cloudiest on January 24 and clearest on July 14. Precipitation is most likely to occur in early February and least likely to occur in mid-July. Over the entire year, precipitation is typically light to moderate rain, averaging approximately 32.6 inches per year. The wettest months are November through March. Scant precipitation falls during July and August.

The relative humidity typically ranges from 18% (dry) to 94% (very humid) over the course of the year, rarely dropping below 10% (very dry) and reaching as high as 100% (very humid). The air is driest in early August, and it is most humid in early January.

Soils

Two soil units were identified within the study area: Auburn loam, 0 to 8% slopes and Auburn very stony loam, 8 to 30% slopes (Figure 3).



Salix consulting, inc.

N

0 100 200
Feet

Aerial Photo: Microsoft 2010

Figure 3

SOILS MAP

Shasta Way Commercial Parcel

City of Shasta Lake, Shasta County, CA

June 25, 2013

Auburn Loam is formed from residuum weathered from metavolcanics with a depth to restrictive layer of 24 to 28 inches to lithic bedrock. It is well-drained, with a depth to water table of more than 80 inches. Available water capacity is low (about 3.3 inches).

Auburn very stony loam is also derived from residuum weathered from metavolcanics with a depth to restrictive layer of 20 to 24 inches to lithic bedrock. It is well-drained, with a depth to water table of more than 80 inches. Available water capacity is very low (about 2.5 inches).

Hydrology

Two drainage ditches are present within the study area, one flowing north to south, the other from west to east. The north south ditch drains into a storm drain system that flows under Kennett Street to the south. Where it outfalls is not clear. The east west ditch drains into Moody Creek, which flows from the north and meanders through the eastern portion of the project site. Moody Creek is a local seasonal stream that drains several square miles of watershed to the north and northwest. It flows approximately 6-8 months of the year. Moody Creek flows under Interstate 5 to the southeast.

Vegetation

The study area is highly-degraded habitat consisting of formerly developed parcels and roads with annual grassland and foothill woodland. Figures 4 and 5 provide photographs of the site.

The annual grassland areas support mostly weedy annuals inlcuding ripgut grass (*Bromus diandrus*), yellow starthistle (*Centaurea solstitalis*), chicory (*Cichorium intybus*), cut-leaf geranium (*Geranium dissectum*), English plantain (*Plantago lanceolata*), rose clover (*Trifolium hirtum*), and vetch (*Vicia sp.*). The foothill woodland areas support several tree species including interior live oak (*Quercus wislizeni var. wislizeni)*, blue oak (*Quercus douglasii)*, valley oak (*Quercus lobata),* and foothill pine (*Pinus sabiniana)*. Shrubs are relatively sparse but include buckbrush (*Ceanothus cuneatus var. cuneatus)*, Scotch broom (*Cytisus scoparius)*, and poison oak (*Toxicodendron diversilobum)*.

The west-east ditch supports some riparian and wetland species but is drier than the north-south ditch. The north-south ditch supports riparian species including Himalayan blackberry (*Rubus armeniacus*) and cottonwood (*Populus deltoides*) (Figure5).

Moody Creek also supports a riparian corridor including cottonwood, willow (Salix spp) and common buttonbush (*Cephalanthus occidentalis)*. It also supports wetland herbaceous species including pennyroyal (*Mentha pulegium)*, Bermuda grass (*Cynodon dactylon)*, and tall flatsedge (*Cyperus eragrostis).*



Looking east along Drainage Ditch-3 near eastern boundary.



Drainage Ditch-3 from Shasta Way looking east.

Salix consulting, inc.

Photo Date: June 14, 2013

Figure 4

SITE PHOTOS

Shasta Way Commercial Parcel

City of Shasta Lake, Shasta County, CA



Moody Creek where it passes through project site in northeast area.



Looking north over Drainage Ditch-2 and cottonwoods.

Salix consulting, inc.

Photo Date: June 14, 2013

Figure 5

SITE PHOTOS

Shasta Way Commercial Parcel

City of Shasta Lake, Shasta County, CA

Waters of the United States

Two potentially jurisdictional wetland features were mapped on the site: Intermittent Stream and Drainage Ditches. Table 1 is an acreage summary of the types, and Figure 6 is the wetland delineation map.

Table 1.
Waters of the United States

Type	Acreage
Wetlands:	
Intermittent Stream	±0.06
Drainage Ditch	±0.22
Total Waters of the United States	**±0.28**

Intermittent Stream

Moody Creek (IS-1) is a local seasonal stream that drains the area to the north and northwest. It flows for over half of the year and supports a riparian corridor. Moody Creek flows under Interstate 5 to the southeast.

Drainage Ditches

Two drainage ditches are located in the study area; one ditch primarily flows north to south (DD-1, DD-2), and the second primarily flows west to east (DD-3). The north-south ditch is the wetter of the two, collecting flows from a larger watershed including the subdivision to the north. It does not carry high flows, but it does carry both wet and dry season water. The west-east ditch captures primarily sheet flows from the local area and moves the water east and then north into Moody Creek.



Salix consulting, inc.

N

0 50 100
Feet

Aerial Photo: Google 2012

Study Area (±12 acres)
Drop Inlet
Culvert
Flow Direction

Data Points
Waters
Wetland

Figure 6

WETLAND DELINEATION MAP

Shasta Way Commercial Parcel
City of Shasta Lake, Shasta County, CA
June 25, 2013

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Appendix A.
Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Shasta Way Commercial City/County: City of Shasta Lake Sampling Date: 6-14-13

Applicant/Owner: City of Shasta Lake State: CA Sampling Point: 1

Investigator(s): Jeff Glazner Section, Township, Range: 29/33/4

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): _____ Slope (%): 1

Subregion (LRR): _____ Lat: 40° 40' 53" Long: 122° 21' 05" Datum: _____

Soil Map Unit Name: Auburn Loam, 0-8% NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Sample area is in a waters of the U.S. Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks: Constructed drainage channel, supporting hydrophytic vegetation, but lacking any evidence of hydric soils. Considered Waters of the US drainage ditch.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. Populus deltoides	15	✓	FAC
2.			
3.			
4.			
	15 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	15	✓	FACU
2.			
3.			
4.			
5.			
	15 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Juncus phaeocephalus	25	✓	FACW
2. Juncus tenuis	5		FACW
3. Lolium perenne	10		FAC
4. Lythrum hyssopifolium	5		OBL
5. Lotus purshianus	2		–
6. Paspalum dilatatum	20	✓	FAC
7. Rumex crispus	5		FAC
8. Centaurium muehlenbergii	2		FACW
	74 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	104 = Total Cover		

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Periodic wetting of channel promotes facultative wetland plant community

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	5YR 4/4						silty loam	no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Soils are not developed due to ditch construction.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Ditch hydrology, originating from local concentrated runoff

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Shasta Way Commercial City/County: City of Shasta Lake Sampling Date: 6-14-13

Applicant/Owner: City of Shasta Lake State: CA Sampling Point: 2

Investigator(s): Jeff Glazner Section, Township, Range: 29/3W/4

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): _____ Slope (%): 2

Subregion (LRR): _____ Lat: 40°40'53" Long: 122°01'05" Datum: _____

Soil Map Unit Name: Auburn loam, 0-8% NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	**Is the Sampled Area within a Wetland?**	Sample area is in a waters of the U.S. Yes _____ No _____

Remarks: Constructed drainage channel, supporting hydrophytic vegetation, but lacking any evidence of hydric soils. Considered Waters of the US drainage ditch.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	20	✓	FAC
2. Robinia pseudoacacia	10		FACU
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus	10		FACU
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: _____)			
1. Vinca major	40	✓	
2. Rumex crispus	20	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	60	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Plant Community marginally hydrophytic

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
	5YR 4/4						silty loam	no redox

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks: Well drained soils
Lack evidence of hydric conditions due to ditch construction

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required, check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Ditch hydrology, originating from local concentrated runoff

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Shasta Way Commercial City/County: City of Shasta Lake Sampling Date: 6-14-13

Applicant/Owner: City of Shasta Lake State: CA Sampling Point: 3

Investigator(s): Jeff Glazner Section, Township, Range: 29/33/4

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): _____ Slope (%): <1

Subregion (LRR): _____ Lat: 40°41'53" Long: 122°21'05" Datum: _____

Soil Map Unit Name: Auburn Loam, 0-8% NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks: Drainage ditch on lower side of property. Recieving water from unknown source. Wet on 6/14/13.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1. Populus deltoides	50	✓	FAC
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1. Rubus armeniacus (discolor)	5		FACU
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: _____)			
1. Polygonum sp	20	✓	FACW
2. Nasturtium officinale	30	✓	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Narrow hydrophytic corridor

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

1 ft Standing water
Soil point not taken

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 12

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Water in ditch

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Shasta Way Commercial City/County: City of Sampling Date: 6-14-13

Applicant/Owner: City of Shasta Lake State: CA Sampling Point: 4

Investigator(s): Jeff Glazner Section, Township, Range: 29/33/4

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Channel Slope (%): 2

Subregion (LRR): Lat: 40° 40' 53" Long: 122° 21' 05" Datum:

Soil Map Unit Name: Auburn very stony loam 8-30 NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ____	Is the Sampled Area within a Wetland? Yes ____ No ____
Hydric Soil Present?	Yes ____ No ____	Sample in waters of the U.S.
Wetland Hydrology Present?	Yes ____ No ____	

Remarks:

Woody Creek channel. Not flowing but wet areas nearby

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Eleocharis macrostachya	20		
2. Cynodon dactylon	25		FACU
3. Polypogon monspeliensis	15		FACW
4. Mentha pulegium	5		OBL
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:

Vegetation in dry stream bed

note: Part of riparian corridor including Cephalanthus occidentalis, Populus fremontii, Vitis californica, Rubus armeniacus, Rosa californica

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks: No soil data taken
Rocky stream bed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Stream hydrology
Dry on 6/14/13

Appendix B.
Plant Species Observed on the Project Study Area

APPENDIX B

Shasta Way Commercial – Plants Observed - 6-14-13

Taxon	Common Name	Wetland Status
Acacia baileyana	Cootamundra wattle	-
Acmispon americanus	Spanish-clover	-
Ailanthus altissima	Tree of heaven	FACU
Amsinckia menziesii	Common fiddlneck	-
Arctostaphylos viscida	Whiteleaf manzanita	-
Avena fatua	Wild oat	-
Bromus diandrus	Ripgut grass	-
Bromus hordeaceus	Soft chess	FACU
Carduus pycnocephalus	Italian thistle	-
Ceanothus cuneatus var. cuneatus	Buck brush	-
Cenaurium venusta	Canchalagua	-
Cephalanthus occidentalis	Common buttonbush	OBL
Centaurea solstitialis	Yellow starthistle	-
Cercis occidentalis	Western redbud	-
Chlorogalum pomeridianum var. pomeridianum	Soap plant	-
Cichorium intybus	Chicory	FACU
Convolvulus arvensis	Bindweed	-
Cynodon dactylon	Bermudagrass	FACU
Cynosurus echinatus	Hedgehog dogtail	-
Cyperus eragrostis	Tall flatsedge	FACW
Cytisus scoparius	Scotch broom	-
Eleocharis macrostachya	Creeping spikerush	-
Elymus glaucus	Blue wildrye	FACU
Epilobium ciliatum	Hairy willow-herb	FACW
Geranium dissectum	Cut-leaf geranium	-
Hordeum marinum subsp. gussoneanum	Mediterranean barley	FAC
Hordeum murinum	Foxtail barley	FACU
Hypericum perforatum	Klamathweed	FACU
Juncus tenuis	Slender rush	FACW
Lactuca serriola	Prickly lettuce	FACU
Lythrum hyssopifolia	Hyssop loosestrife	OBL

Madia elegans	Common madia	-
Mentha pulegium	Pennyroyal	OBL
Mimulus guttatus	Common monkeyflower	OBL
Morus alba	White mulberry	FACU
Nasturtium officinale	Water cress	OBL
Paspalum dilatatum	Dallis grass	FAC
Pinus sabiniana	Foothill pine	-
Plantago lanceolata	English plantain	FAC
Platanus acerifolia	London plane tree	-
Polypogon monspeliensis	Annual beard grass	FACW
Populus deltoides	Fremont cottonwood	FAC
Prunus dulcis	Almond tree	-
Prunus sp.	Prunus	-
Prunus subcordata	Pacific plum	-
Quercus douglasii	Blue oak	-
Quercus lobata	Valley oak	FACU
Quercus wislizeni var. wislizeni	Interior live oak	-
Raphanus sativus	Wild radish	-
Robinia pseudoacacia	Black locust	FACU
Rosa californica	California rose	FAC
Rubus armeniacus	Himalayan blackberry	FACU
Rumex crispus	Curly dock	FAC
Salix gooddingii	Goodding's black willow	FACW
Salix lasiolepis	Arroyo willow	FACW
Spergularia rubra	Ruby sand-spurrey	FAC
Toxicodendron diversilobum	Western poison-oak	-
Tragopogon dubius	Yellow salsify	-
Trifolium hirtum	Rose clover	-
Verbascum blattaria	Moth mullein	FACW
Vicia sp.	Vetch	-
Vinca major	Periwinkle	-
Vitis californica	California wild grape	FACU

Appendix 4.6-5

MEMORANDUM REPORT – FAIRY SHRIMP, July 2012

MEMORANDUM

To: Lisa Grudzinski

From: Jeff Glazner

Date: July 3, 2012

Subject: Mountain Gate at Shasta Fairy Shrimp Habitat/Listed Large Branchiopod Review

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In response to your letter dated March 22, 2012, in which you state that the Mountain Gate site "may contain suitable habitat for Federally-listed species," this document provides additional information on site conditions at the Mountain Gate at Shasta project site relating to the potential for fairy and tadpole shrimp occupancy. This analysis for the presence or absence of listed large branchiopod species supports the determination that the site is not suitable for these species based on the following factors:

- The overall landscape and landform is a sloped foothill/low montane site, rather than a relatively flat valley site;
- The lowest elevation of the project site is approximately 220 feet higher than that of the highest elevation of large branchiopod occurrence in Shasta County;
- The site lacks suitable hydrologic conditions for the formation of vernal pools;
- Nearly all of the wetlands onsite do not support plant species characteristic of vernal pools; and
- The nearest populations of listed large branchiopods, according to the 2012 CNDDB, is approximately eight miles to the south of the site, on the Sacramento Valley floor.

This document includes a number of exhibits at the end of the document that are intended to clearly illustrate the factors listed above. They are referenced as needed in the following text.

Landscape/landforms and Elevation

Near the northern city limits of Redding, the landscape rises gently toward Shasta Lake and the Shasta-Trinity National Forest. The Mountain Gate project site is more than halfway between Redding and Shasta Lake and is well within the transition zone to montane conditions, outside the landforms that support vernal pools and most vernal pool species. The project site is located north of the northernmost population of any of the listed large branchiopods. All the occurrences are south and east of Redding, on the northern end of the Sacramento valley floor. Elevations on the Mountain Gate site range from 780′ at the extreme southeast corner of the site (along I-5) to approximately 920′ on the northwest side of the site.

The California Natural Diversity Database (CNDDB) was queried for each of the two large branchiopod species to determine the highest elevation at which each has been collected in Shasta County. It was found that for *Branchinecta lynchi*, the highest elevation is 560 feet, located about 0.5 miles south and southeast of Millville Plains Road at Highway 44. For *Lepidurus packardi*, the highest elevation is 540 feet, located between Argyle Road and Airport Road, South of Hartnell Avenue, Redding. All the populations listed in Shasta County occur in the Redding area, and all occur at an elevational range of 400′ to 560′, which is more than 200 feet below the lowest wetland identified within the Mountain Gate site.

The specific elevations of wetlands on the Mountain Gate site are illustrated in Figures 1 through 10. Figure 1 provides a key to identifying the locations of Figures 2 through 10. Figures 2 through 10 are aerial photographs that identify the topography and elevations (with contour intervals of one-foot) of the seasonal wetlands that are proposed to be impacted on the Mountain Gate site. Figures 11 through 14 illustrate the landforms transitioning to montane conditions on the site.

Hydrology of Wetlands

The area receives approximately 60 inches of rain per year (as compared to Redding, which receives approximately 35 inches of rain per year). In the open meadow area near I-5, a restrictive layer exists 20-30 inches below the surface that may slow water percolation. However, this restrictive layer is sloped to the south, and water flows over it rather than perching and sitting above it. For a vernal pool to form, the water must perch after the surface soils become saturated and pond through the winter and early spring. Given the overall slope of the Mountain Gate site and its subsurface geology, there are very few areas on the property where depressions have formed, and these depressions lack wetland hydrology.

The only wetland on the property that is located in a nearly flat location occurs near the northeast corner of the property, near the Shell gas station (Seasonal Wetland 20). A portion of this field is locally flat and contains one shallow wetland depression. Depth of ponding is a maximum of four inches, which is relatively shallow for a vernal pool. In addition, the ponding duration of this wetland is short after the weather warms, likely drying out by the end of March.

Vegetation

Most of the wetlands on the project site support wetland generalist species, which occur over a wide range of wetland habitats and are not generally indicators of vernal pools. These species include common velvet grass (*Holcus lanatus*), dallis grass (*Paspalum dilatatum*), iris-leaf rush

(*Juncus xiphiodes*), Italian ryegrass (*Lolium multiflorum*), yampah (*Perideridia kelloggii*), pennyroyal (*Mentha pulgium*), jointed coytote thistle (*Eryngium articulatum*), annual beard grass (*Polypogon monspeliensis*), Bermuda grass (*Cynodon dactylon*), curly dock (*Rumex crispus*), toad rush (*Juncus bufonius*), Mexican rush (*Juncus mexicanus*), and western buttercup (*Ranunculus occidentalis*).

In Seasonal Wetland 20, which is located near the northeastern property line, we did observe some species that are indicative of vernal pools, including stipitate popcornflower (*Plagiobothrys stipitatus* var. *micranthus*), variegated clover (*Trifolium variagatum*), vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*), and double horned downingia (*Downingia bicornuta* var. *bicornuta*). Also abundant in this wetland was curly dock and pennyroyal. This wetland supports a hydrologic regime similar to a vernal pool but also contains numerous species not typical of vernal pools. This was the only wetland on the property of this nature and, in our opinion, the only wetland that could be potentially considered a vernal pool. However, the location of this wetland is approximately 300 feet higher in elevation than the nearest identified large branchiopod occurrence and, as such, is not reasonably likely to support vernal pool species.

Figures 15 and 16 provide site photos of the Mountain Gate property that illustrate the flora typical of most of the seasonal wetlands on the site. Figure 17 provides site photos of Seasonal Wetland 20, discussed above.

Fairy Shrimp Occurrences in the Redding Area

The California Natural Diversity Database (CNDDB) indicates there are local populations of both large branchiopod species (*Branchinecta lynchi* and *Lepidurus packardi)* in Shasta County. Nine occurrences of *Branchinecta lynchi* and 20 occurrences of *Lepidurus packardi* are documented in Shasta County.

According to the most recent CNDDB, the nearest known populations of *Branchinecta lynchi* and *Lepidurus packardi* are south and east of the city of Redding and are located just south of Highway 44, east of Interstate 5, approximately eight miles south of the Mountain Gate project area. These known populations, however, uniformly occur outside the lower montane landform that characterizes the Mountain Gate site.

Figure 18 provides a map of the results of the CNDDB query.

Conclusion

We have spent a considerable amount of time on the Mountain Gate project site since our first visit there in April 2004. Surveys have been conducted there in all seasons, including during heavy rains, during which we were able to observe water movement across the surface of the wetlands downslope.

Regarding large branchiopods, no tadpole shrimp exoskeletons or any tadpole or fairy shrimp have been observed in any of the Mountain Gate wetlands. The listed large branchiopod species (*Branchinecta lynchi* and *Lepidurus packardi*) were considered during all surveys since 2004, and no evidence of their occurrence on the site has been found.

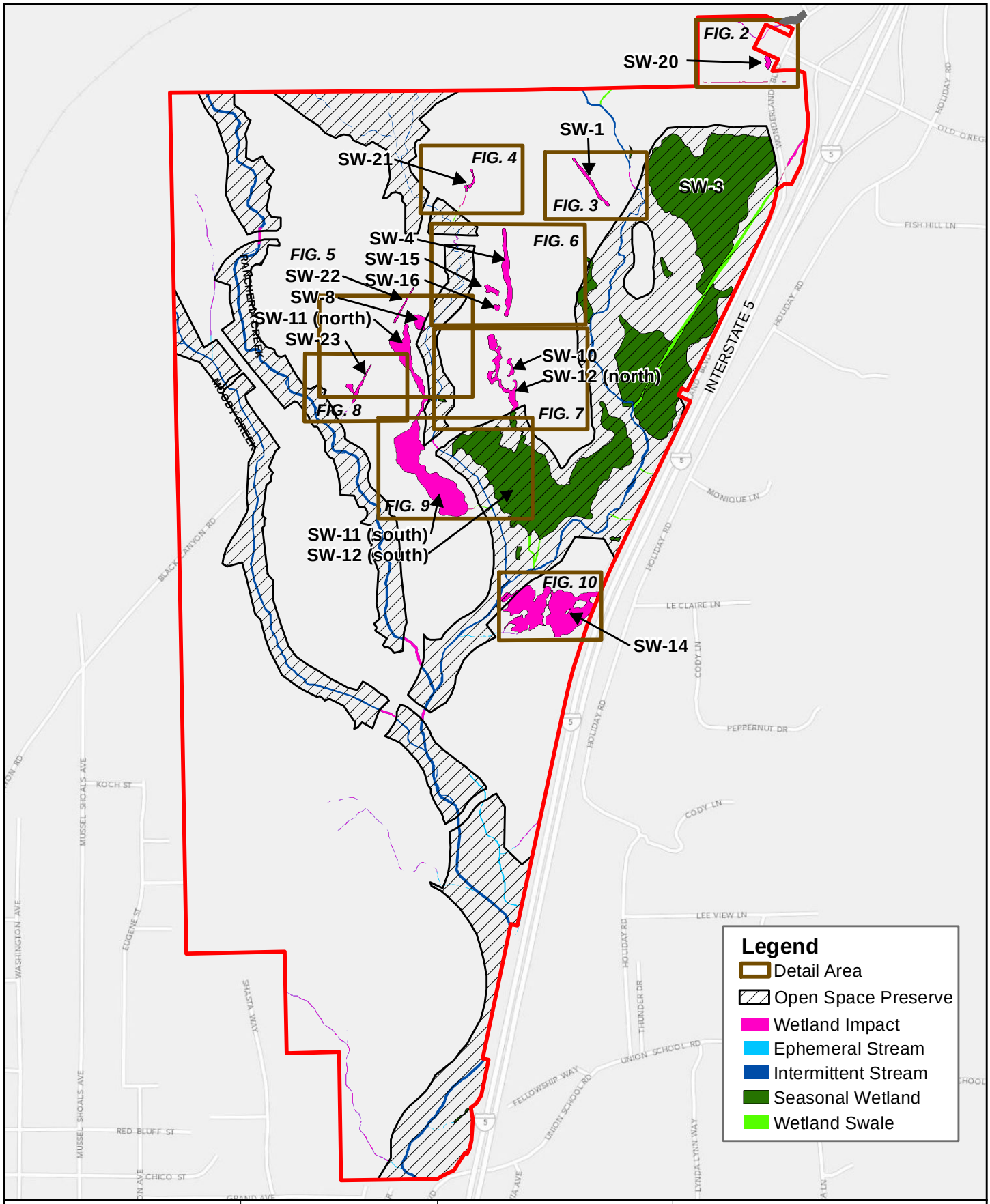
The Mountain Gate at Shasta property is not suitable habitat for listed large branchiopod species because:

1) it is located substantially above the elevational range for the species in this region;

2) it is not located in an appropriate landform/landscape; and

3) the sloping restrictive soil layer does not provide the hydrologic conditions necessary for the formation of vernal pool conditions.

The Mountain Gate landscape/landform, elevation, and hydrology (as described and illustrated throughout this document) do not resemble the typical valley floor vernal pool habitat found south of Redding (Figure 19), where the CNDDB identifies the northernmost reaches of listed large branchiopod occurrence. In addition, with only one exception, the seasonal wetlands onsite primarily support only generalist wetland species, rather than those unique to vernal pools. These findings are supported by documentation from the CNDDB, which does not identify any populations of listed large branchiopods within 8 miles of the project site.



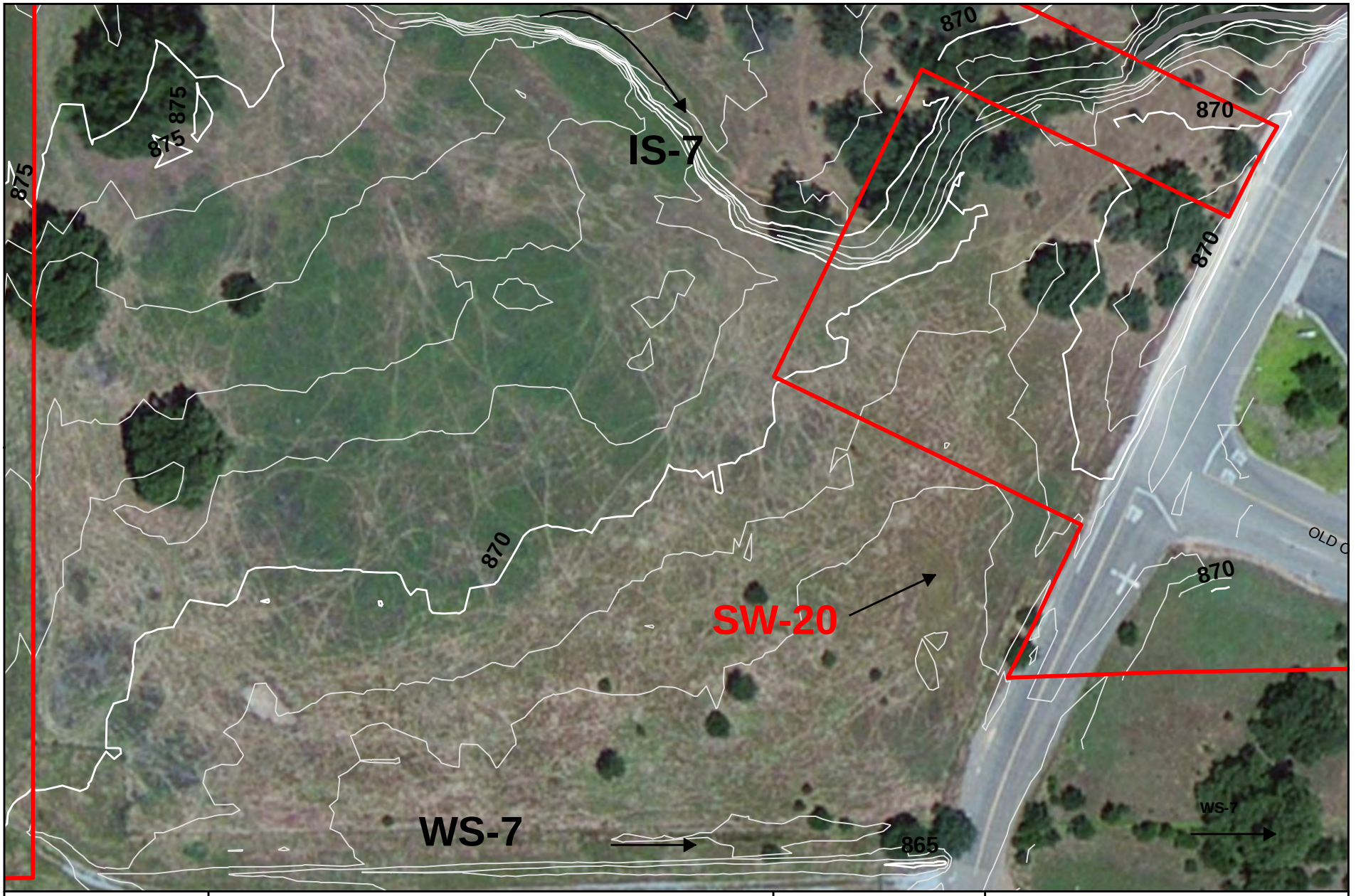
Salix consulting, inc.

Figure 1

AERIAL PHOTO KEY MAP

Mountain Gate at Shasta

Shasta County, California



Salix consulting, inc.

Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

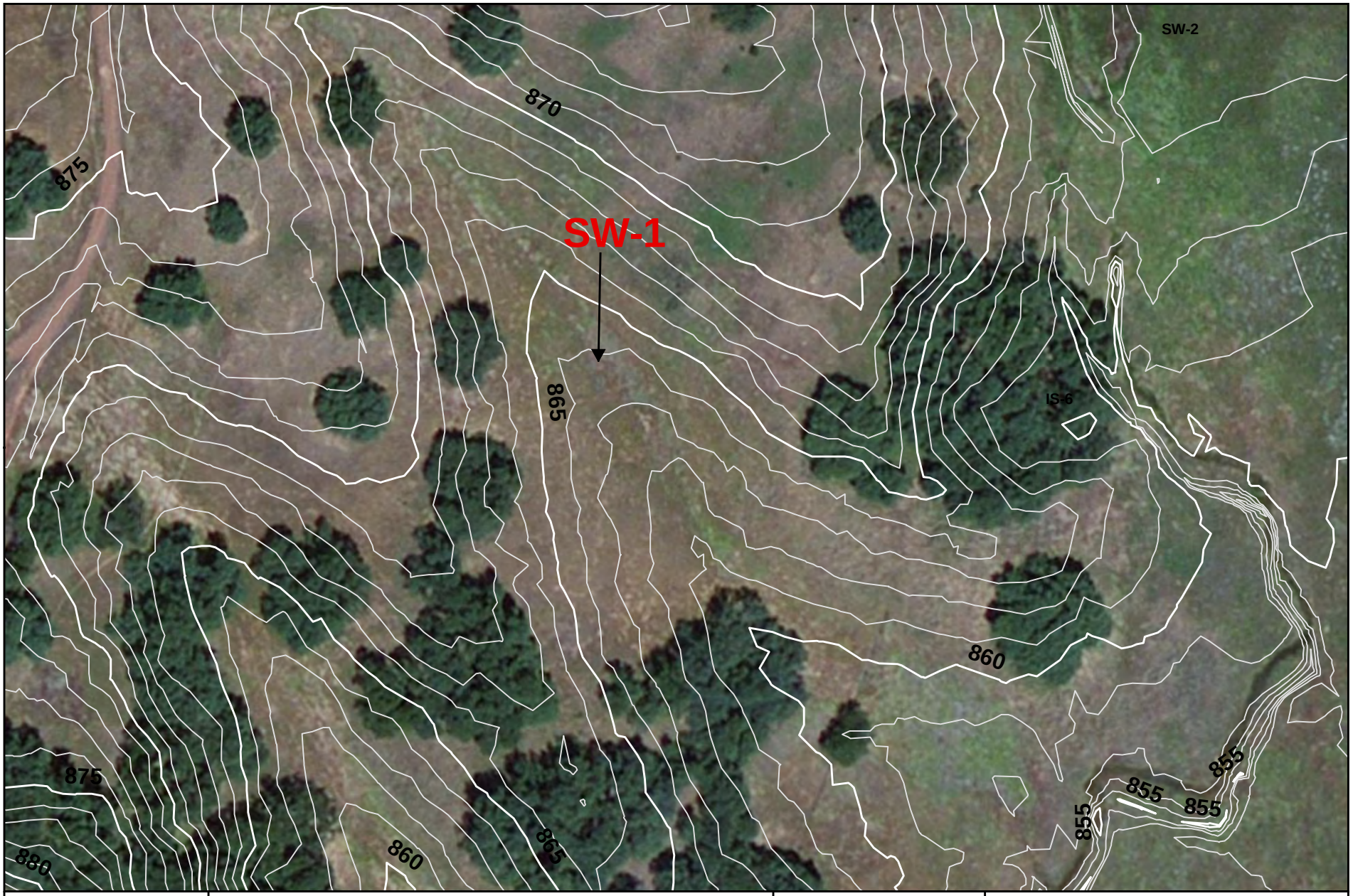
N

0 40 80
Feet

Figure 2

AERIAL PHOTOS/TOPO
SEASONAL WETLAND-20

Mountain Gate at Shasta
Shasta County, California



Salix consulting, inc.

Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

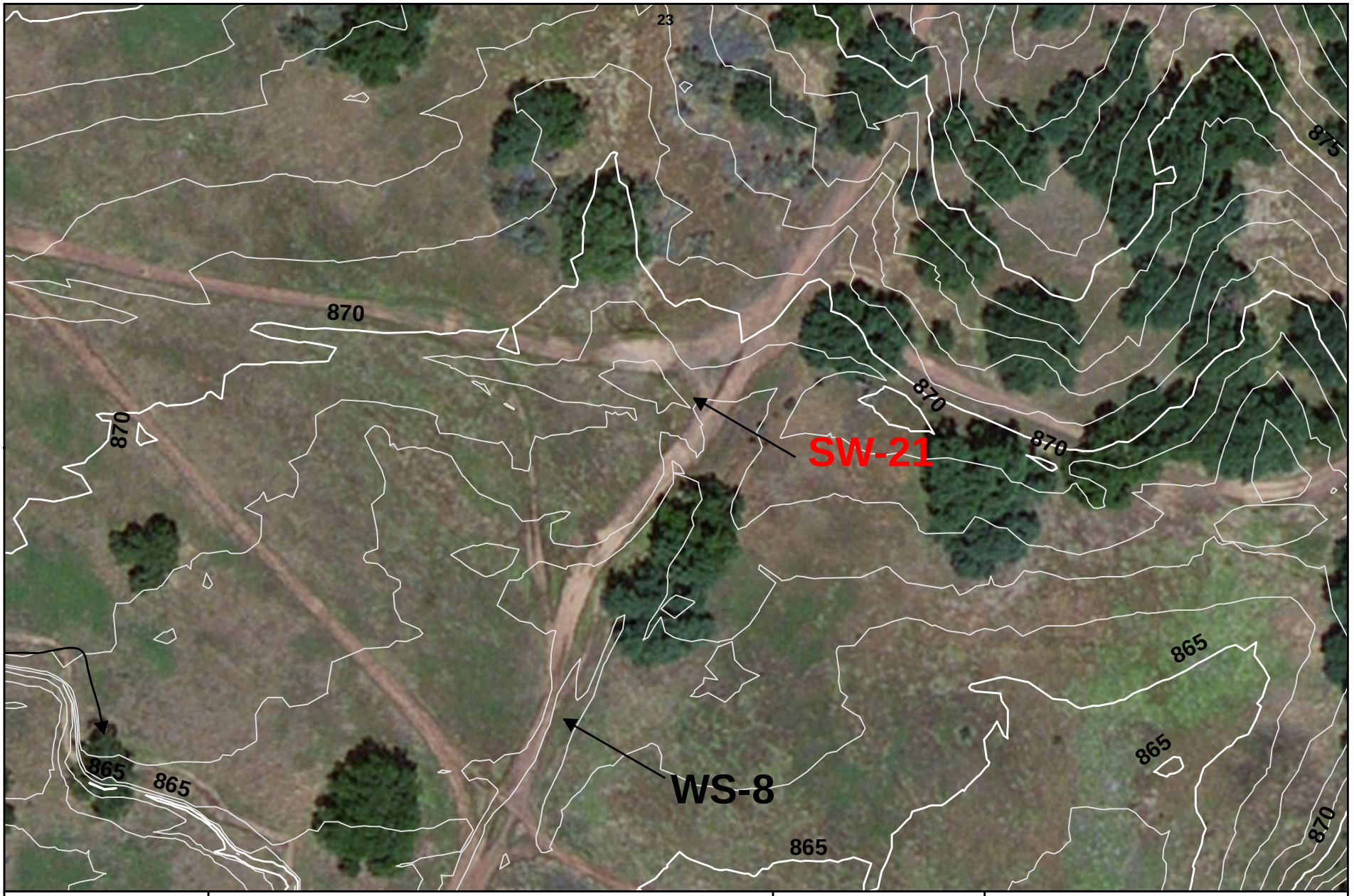
N

0 40 80
Feet

Figure 3

AERIAL PHOTOS/TOPO
SEASONAL WETLAND-1

Mountain Gate at Shasta
Shasta County, California



Salix consulting, inc.

Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

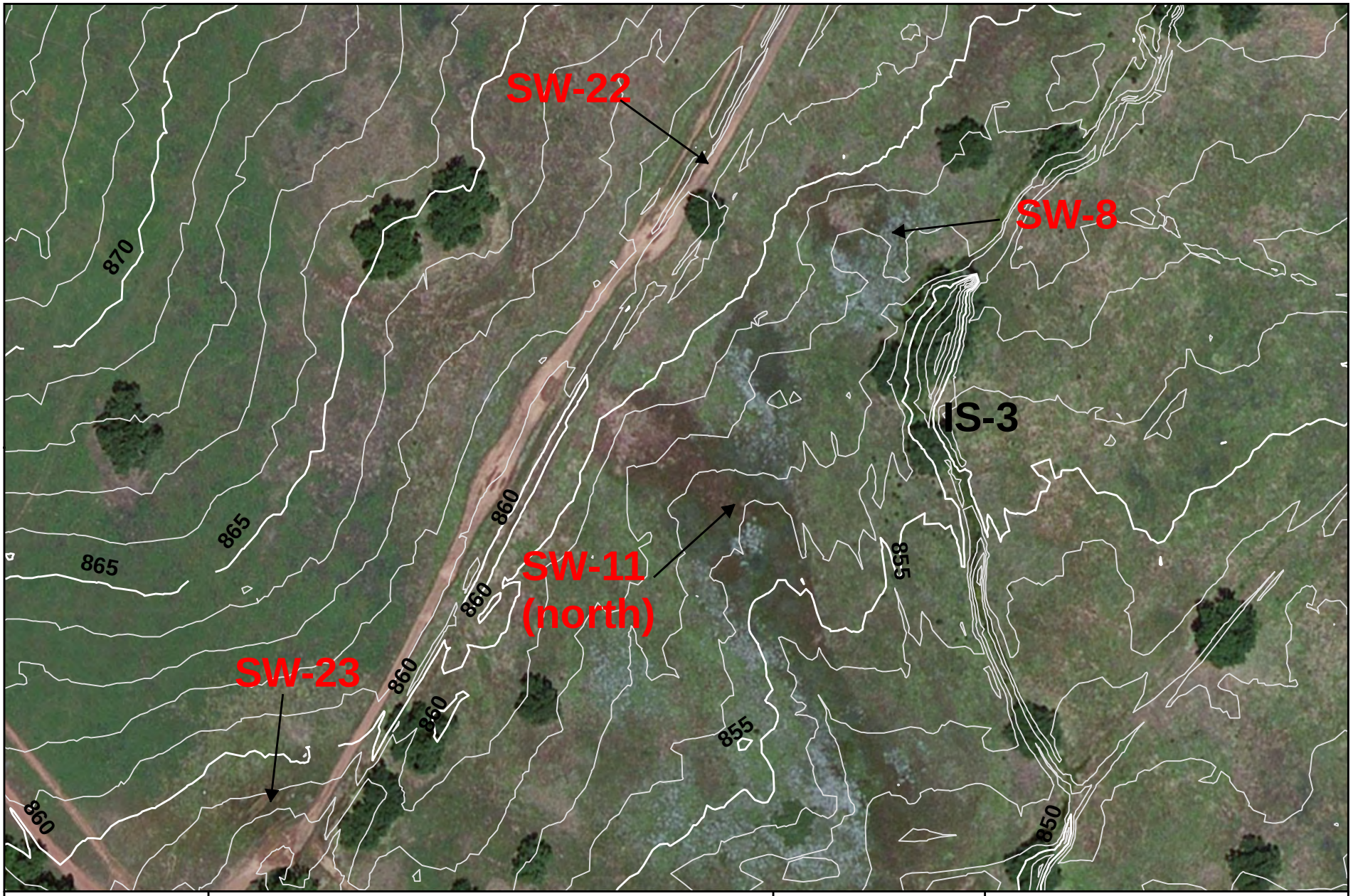
N

0 40 80
Feet

Figure 4

AERIAL PHOTOS/TOPO
SEASONAL WETLAND-21

Mountain Gate at Shasta
Shasta County, California



Salix consulting, inc.

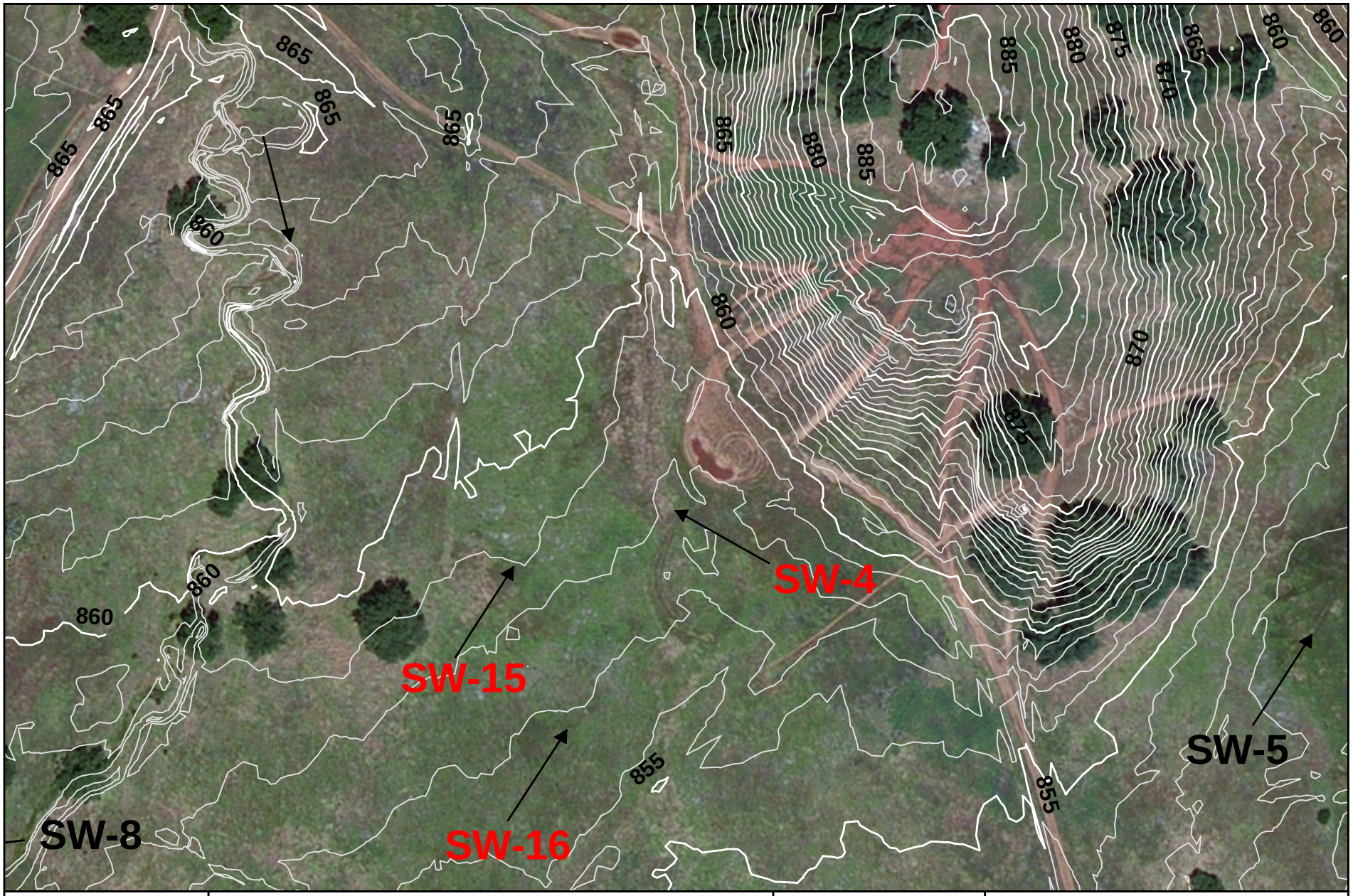
Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

N

0 60 120
Feet

Figure 5

AERIAL PHOTOS/TOPO
SW-8,SW-11n,SW- 22, SW-23
Mountain Gate at Shasta
Shasta County, California



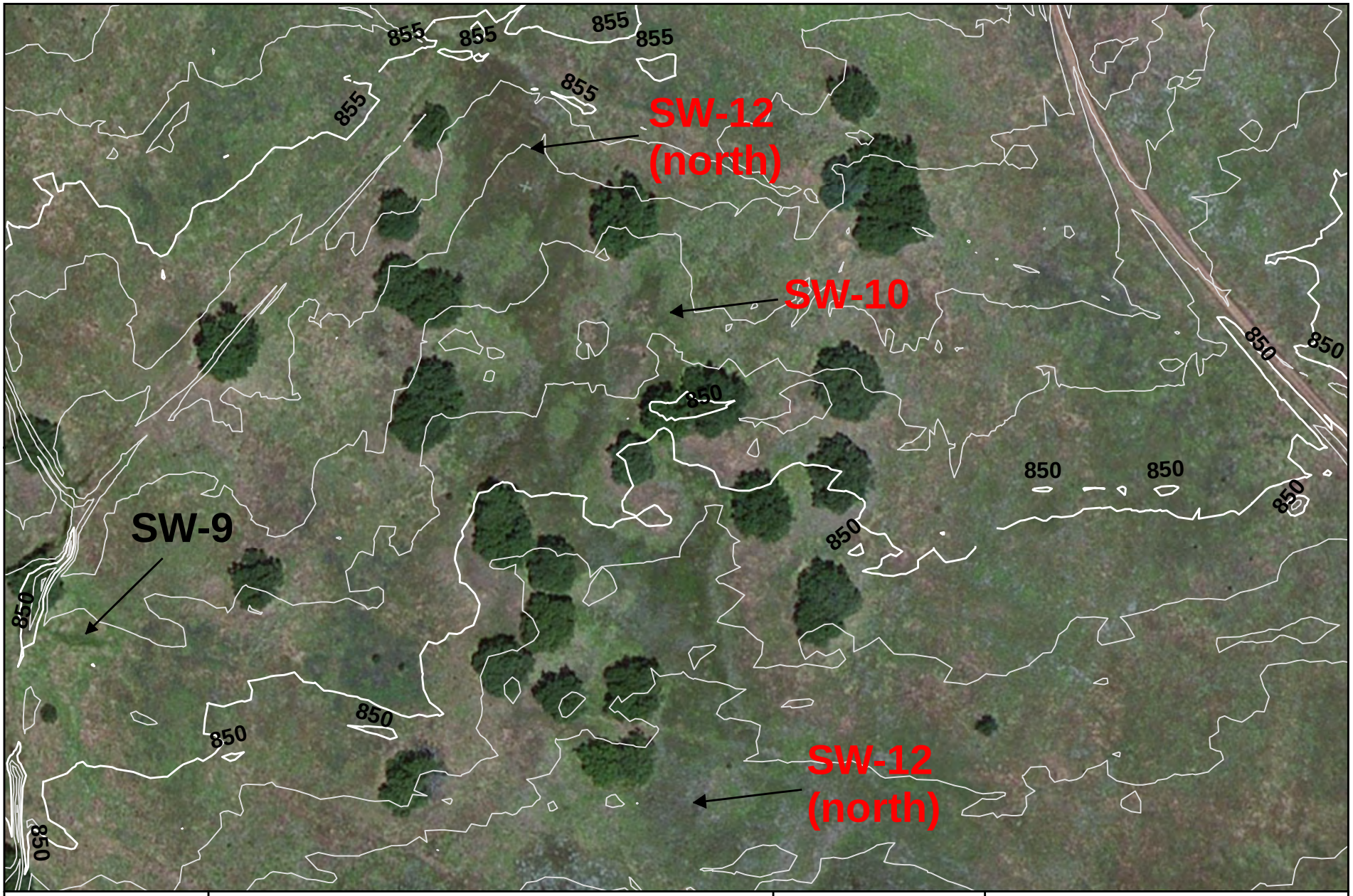
Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

N

0 60 120
Feet

Figure 6

AERIAL PHOTOS/TOPO
SW-4,SW-15,SW- 16
Mountain Gate at Shasta
Shasta County, California



Salix consulting, inc.

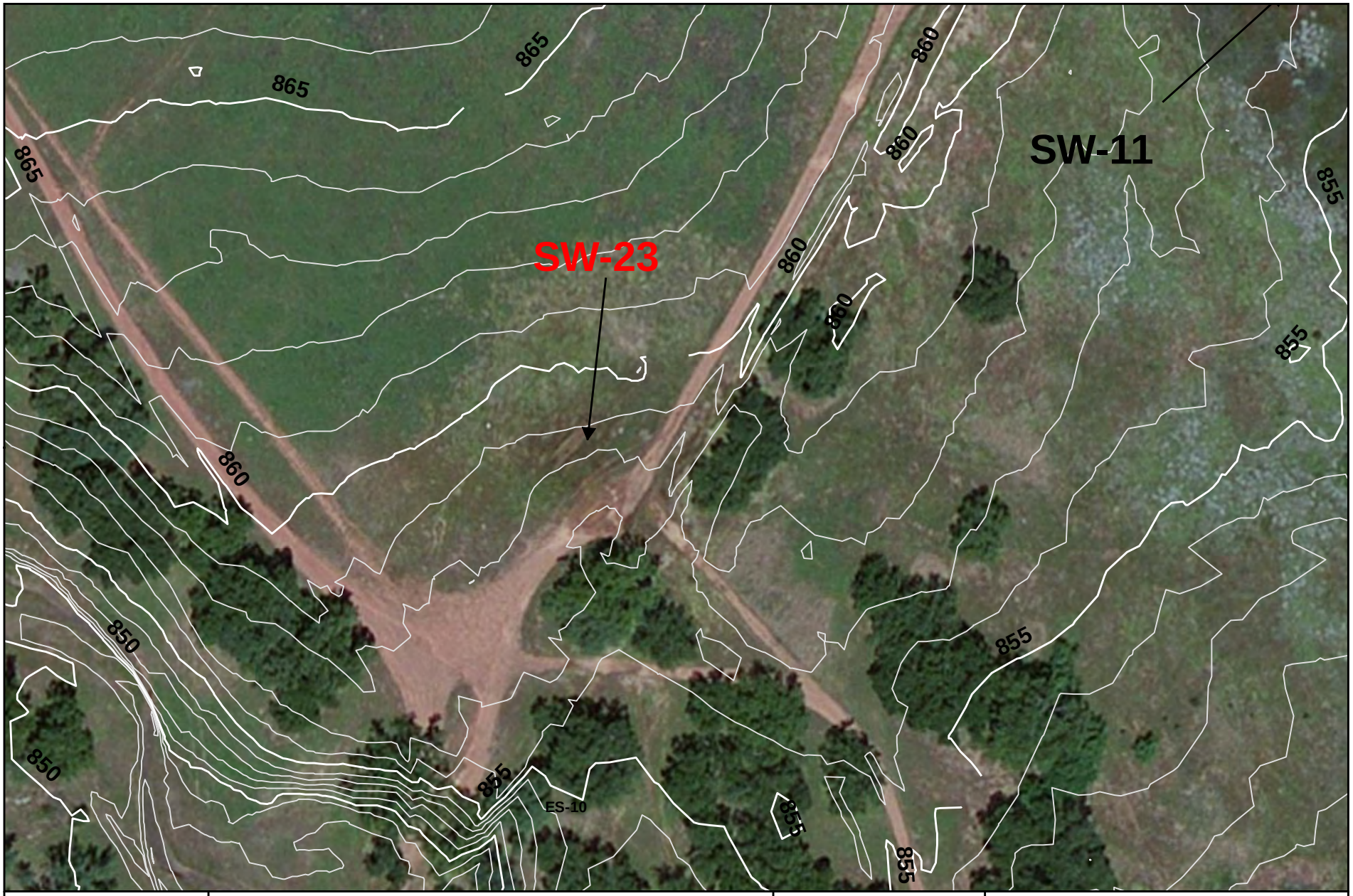
Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

N

0 60 120
Feet

Figure 7

AERIAL PHOTOS/TOPO
SW-10, SW-12n
Mountain Gate at Shasta
Shasta County, California



Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

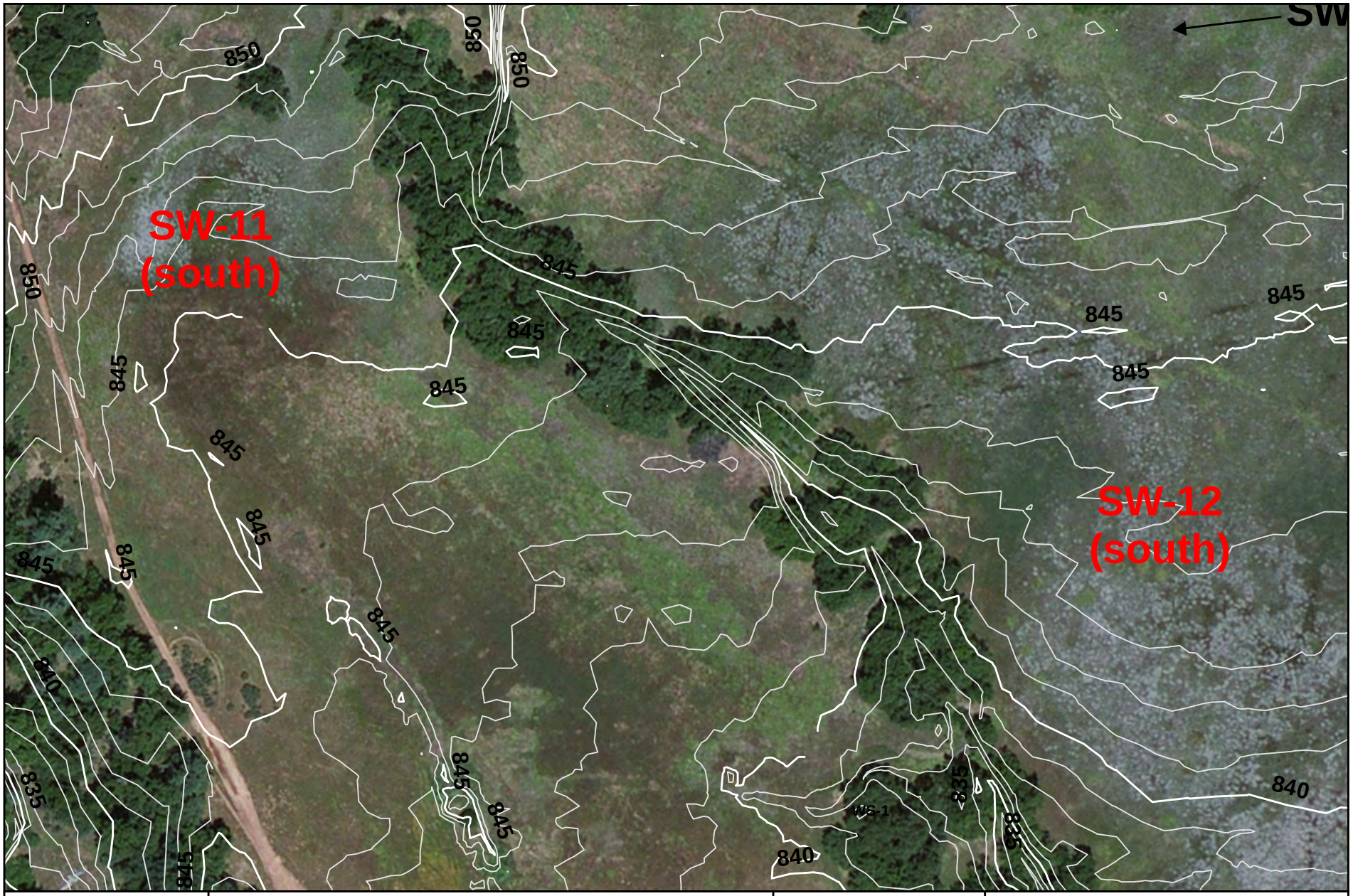
N

0 45 90
Feet

Figure 8

AERIAL PHOTOS/TOPO
SEASONAL WETLAND-23

Mountain Gate at Shasta
Shasta County, California



Salix consulting, inc.

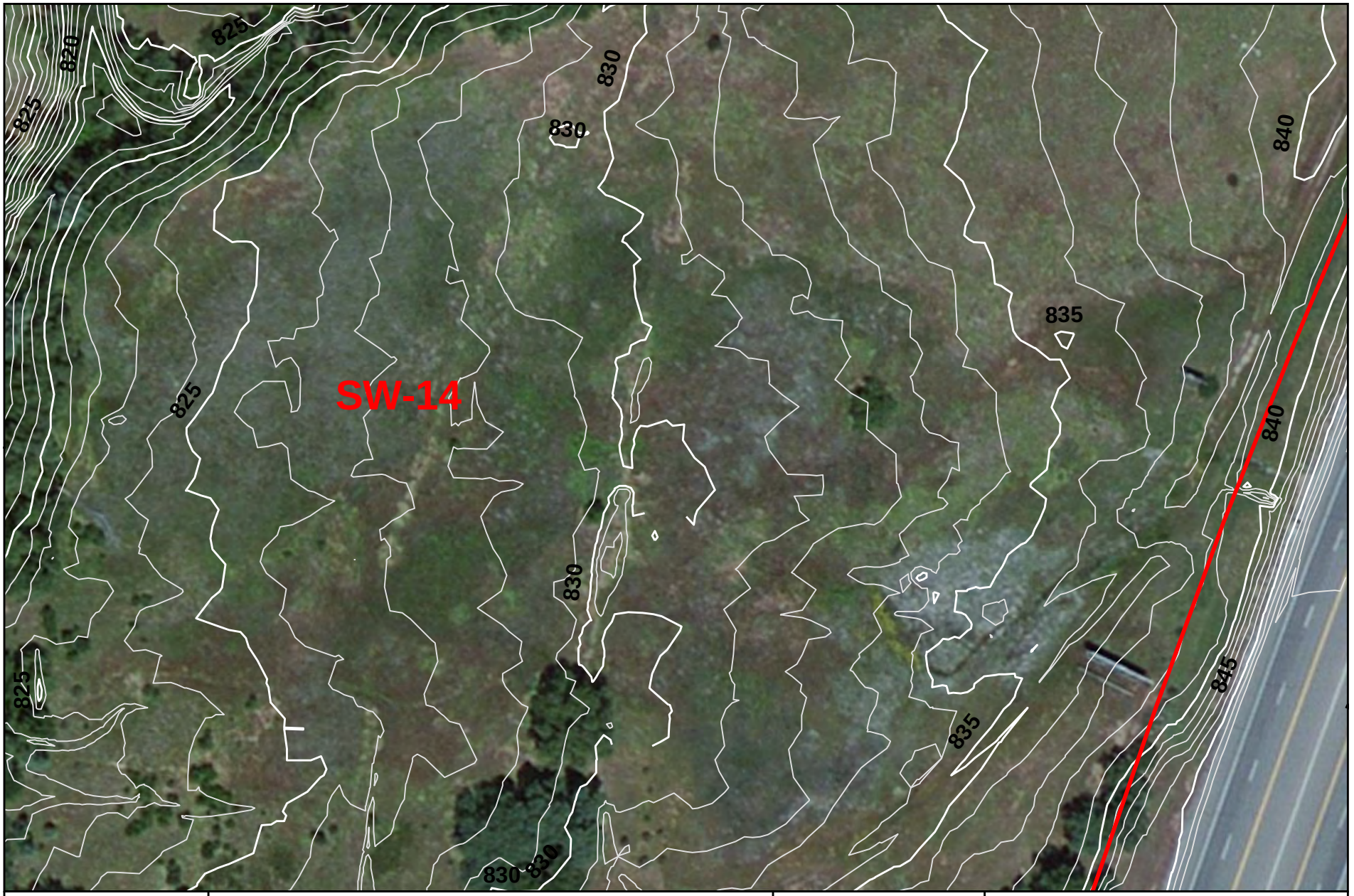
Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

N

0 60 120
Feet

Figure 9

AERIAL PHOTOS/TOPO
SW-11 South, SW-12 South
Mountain Gate at Shasta
Shasta County, California



Aerial Photo: Bing Spring 2010
See Key Map for locations, Figure 1
1 Foot Contour Interval

N

0 45 90
Feet

Figure 10

AERIAL PHOTOS/TOPO
SEASONAL WETLAND-14

Mountain Gate at Shasta
Shasta County, California



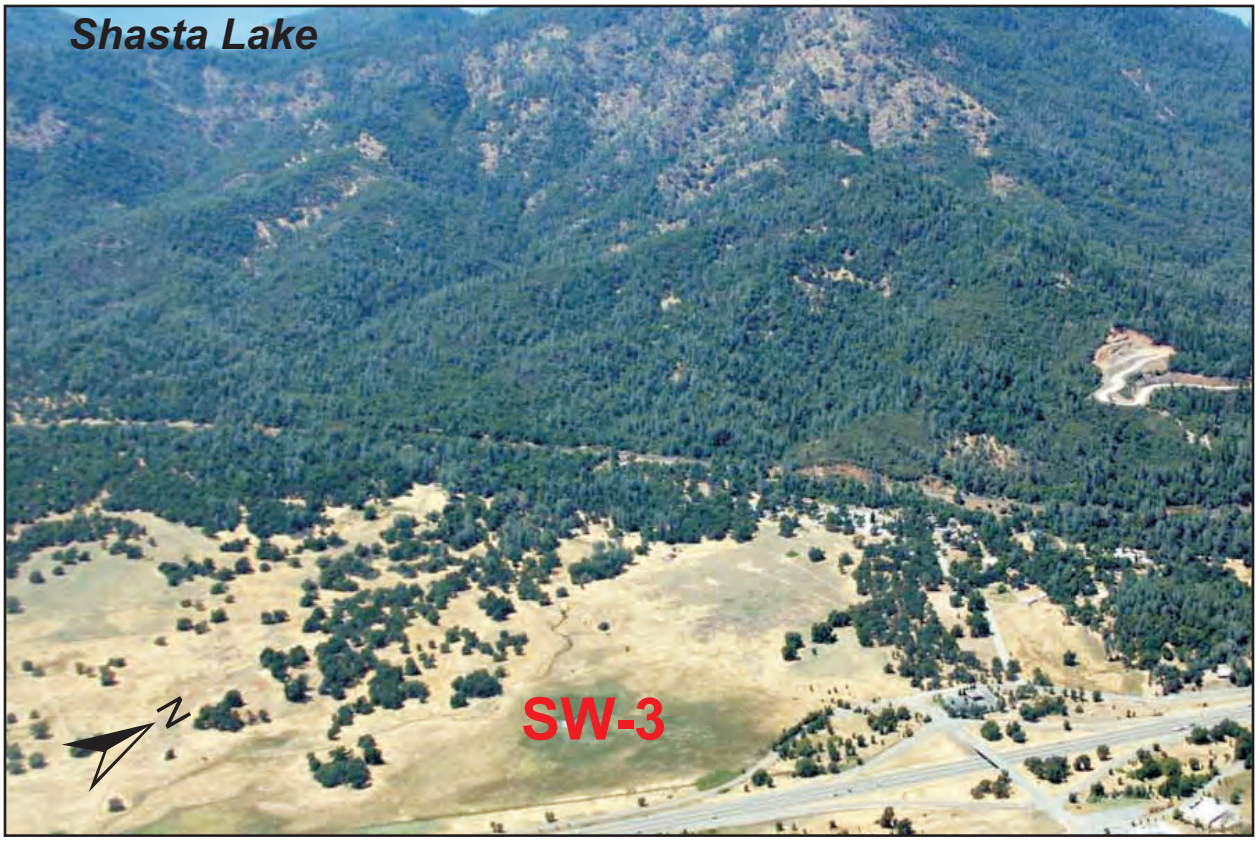


Photo Date: July 15, 2010

Figure 11

OBLIQUE AERIAL PHOTO

Mountain Gate at Shasta

Shasta County, California





Salix consulting, inc.

Photo Date: July 15, 2010

Figure 12

OBLIQUE AERIAL PHOTO

Mountain Gate at Shasta

Shasta County, California



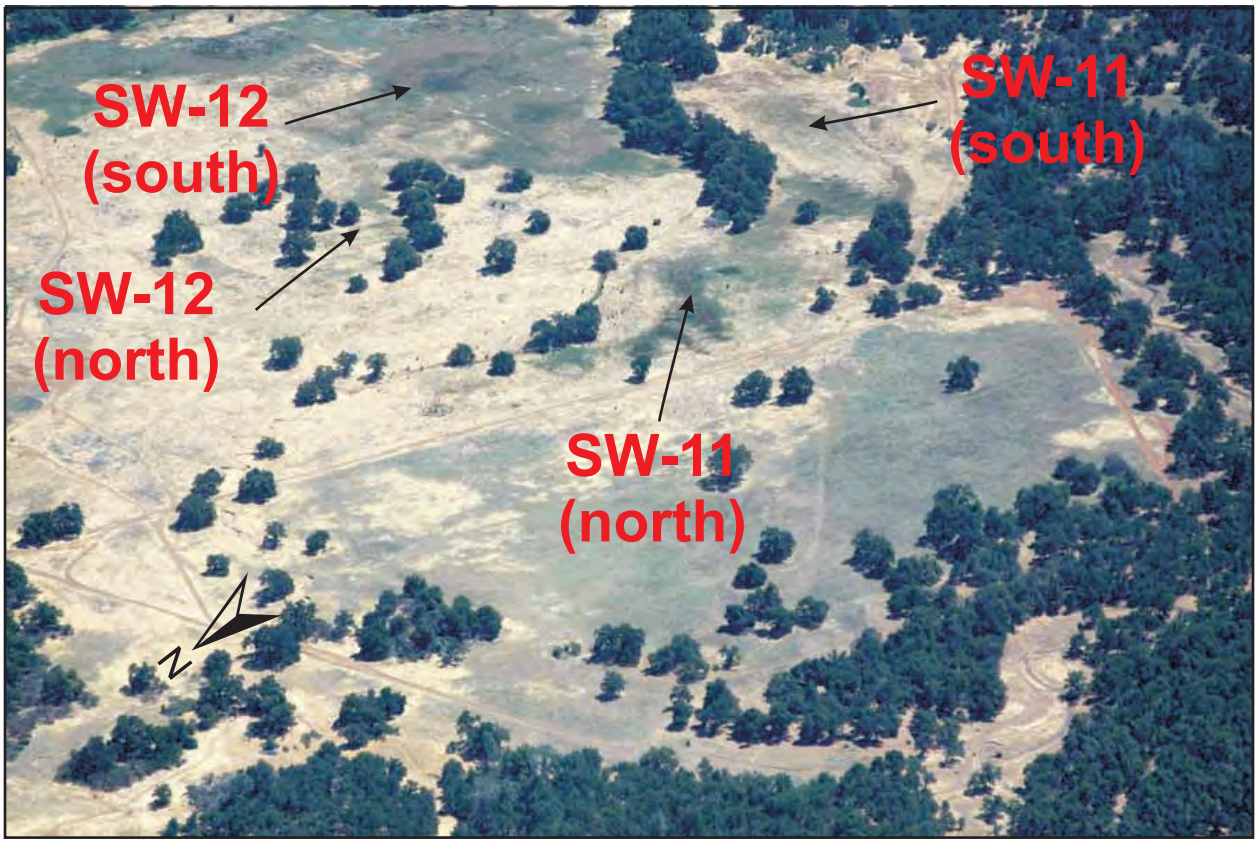


Photo Date: July 15, 2010

Figure 13

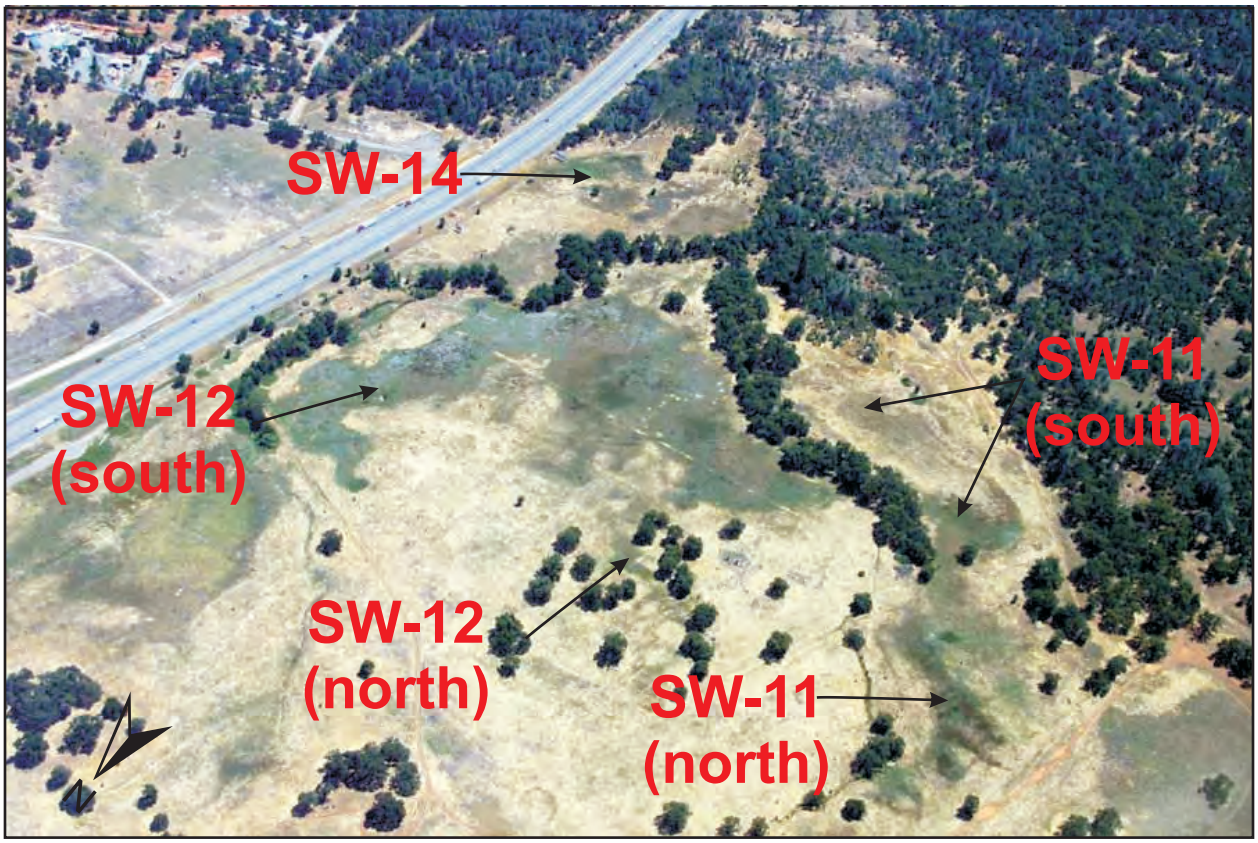
OBLIQUE AERIAL PHOTO

Mountain Gate at Shasta

Shasta County, California

Salix consulting, inc.





Salix consulting, inc.

Photo Date: July 15, 2010

Figure 14

OBLIQUE AERIAL PHOTO

Mountain Gate at Shasta

Shasta County, California



Looking east over Seasonal Wetland-15 after heavy rain.

Looking north over Seasonal Wetland-14.





Season Wetland-7 (meadow) in preserve.

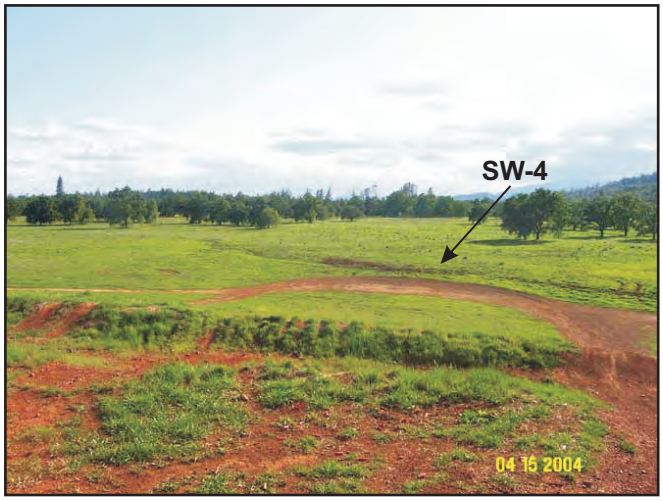
Salix consulting, inc.

Figure 15

SITE PHOTOS

Mountain Gate at Shasta

Shasta County, California



Looking south over Seasonal Wetland-4.

Looking south along Seasonal Wetland-22.





Looking north over Seasonal Wetland-12.

Salix consulting, inc.

Figure 16

SITE PHOTOS

Mountain Gate at Shasta

Shasta County, California



Seasonal Wetland-20



Seasonal Wetland-20



Looking north over Seasonal Wetland-20.

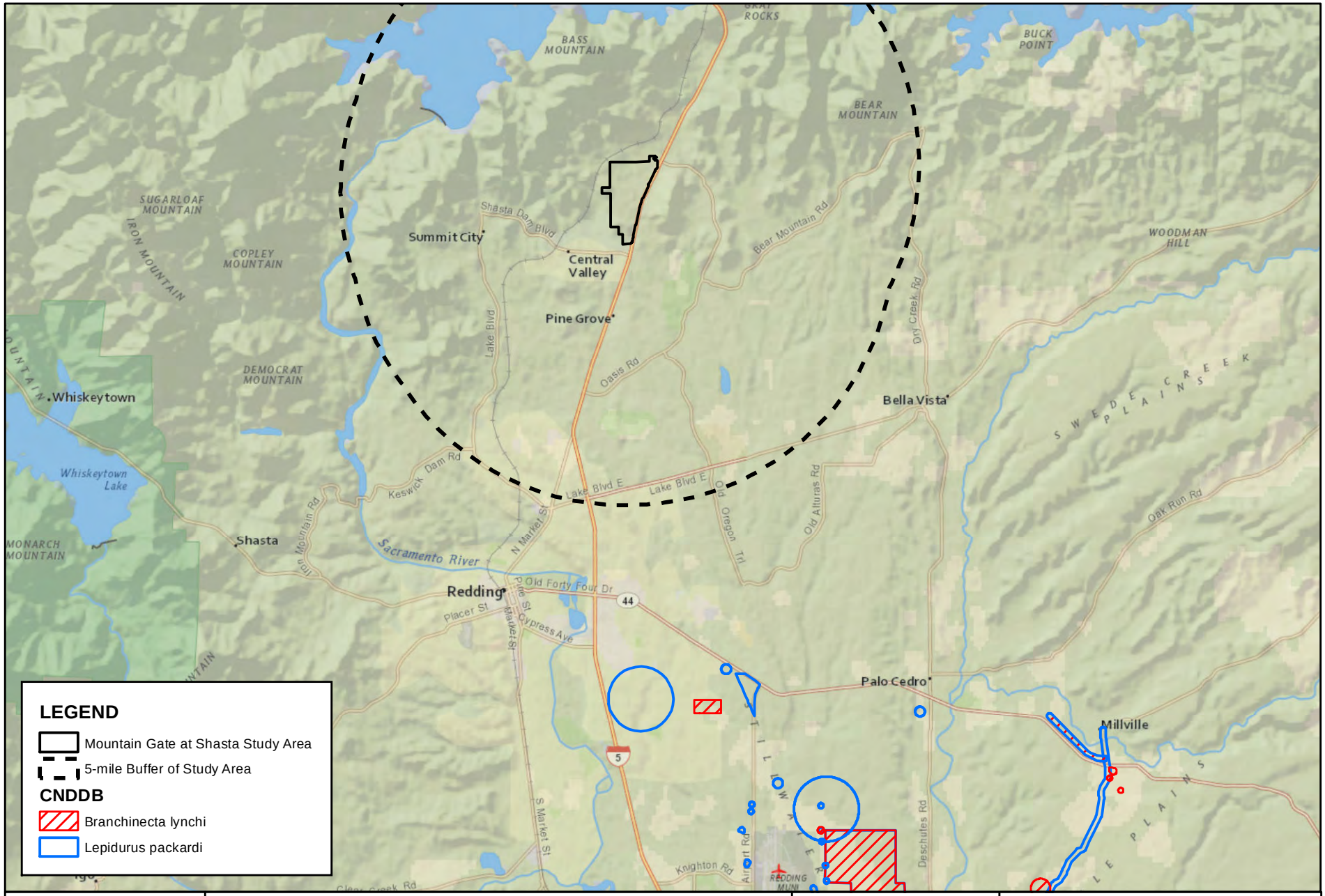
Salix consulting, inc.

Figure 17

SITE PHOTOS

Mountain Gate at Shasta

Shasta County, California



Data: California Natural Diversity Database GIS,
California Department of Fish and Game, June 2012.

N

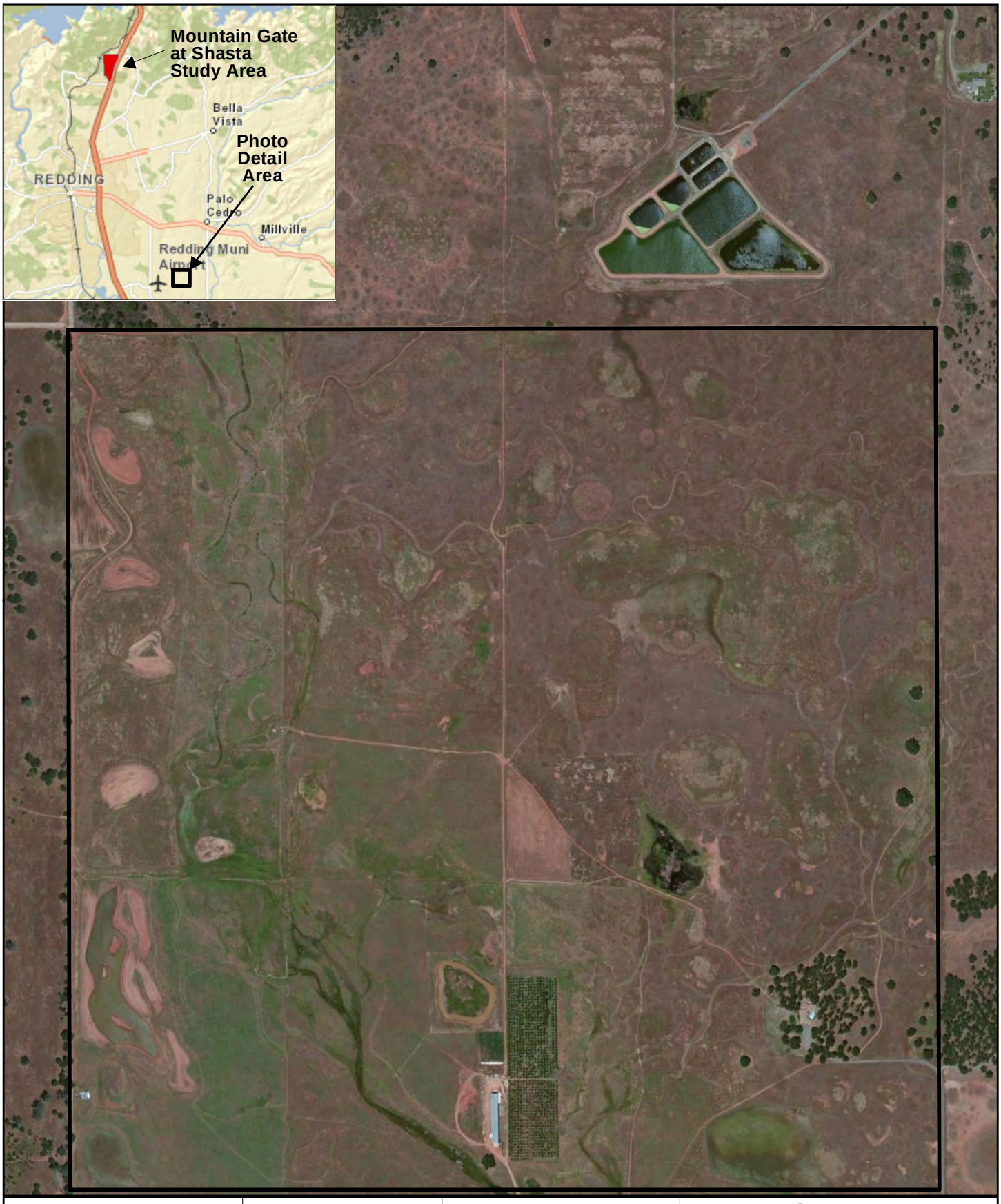
0 1 2
Miles

Figure 18

REGIONAL FAIRY AND TADPOLE SHRIMP CNDDB OCCURRENCES

Mountain Gate at Shasta

Shasta County, California



Salix consulting, inc.

N

0 400 800

Scale in Feet

Data: California Natural Diversity Database GIS, California Department of Fish and Game, June 2012.

Figure 19

TYPICAL LISTED LARGE BRANCHIOPOD HABITAT

Redding Area

Shasta County, California

Appendix 4.6-6

ARMY CORPS OF ENGINEERS APPLICATION AND VERIFICATION

Salix
consulting, inc.

December 6, 2011

Ms. Lisa Grudzinski
U.S. Army Corps of Engineers
152 Hartnell Ave
Redding, CA 96002-1842

Re: Individual Permit Application
Mountain Gate Meadows (SPK- 2005-00827)
City of Shasta Lake, Shasta County, CA

Dear Ms. Grudzinski:

On behalf of Mountain Gate, LLC, we are pleased to submit to the U.S. Army Corps of Engineers the enclosed Section 404 Permit application for the Mountain Gate Meadows project.

Mountain Gate Meadows is located in the City of Shasta Lake along Interstate 5. The project site contains approximately 57.57 acres of waters of the United States including ephemeral and intermittent streams, seasonal wetlands, and wetland swale. The proposed project plan is to fill approximately 10.73 acres of these waters to accommodate development of a mixed use master planned community. An entitlement application has been filed with the City of Shasta Lake to permit the development of approximately 1,148 residential lots and up to 26 acres of commercial/mixed-use development. In addition, the application proposes the development of neighborhood- and community-serving recreational uses, as well as substantial open space corridors designed to accommodate avoidance of the majority of waters of the United States within the project site. Full build-out of the project is anticipated to be phased and will likely take between 10 and 20 years.

Enclosed for your review are the following documents:

1) ENG Form 4345

2) Supplemental Information for Individual Permit Application including Appendices:
   - Wetland Delineation and verification letter
   - Proposed In-Stream Flow Control prepared by Project Engineer
   - Archaeological inventory survey prepared by Sean Michael Jensen
   - Conceptual Wetlands Mitigation Plan

The Section 404(b)(1) Alternatives Analysis is being drafted under separate cover and will be submitted in the near future.

Please let us know if you have any questions regarding the Mountain Gate submittals. We look forward to your comments on our submittals and to working with you during the upcoming months.

Please feel free to contact me at any time if you have any questions.

Sincerely,

Jeff Glazner
Principal Biologist

cc: Ron Alvarado, SBM
David Tembledor, HARRISON TEMBLADOR HUNGERFORD & JOHNSON
Milo Terzich, Real Estate Development Consulting, Inc
Mike Dormer, Sharrah Dunlap Sawyer

Enclosures:

ENG Form 4345

Supplemental Information for Individual Permit Application including Appendices:
Wetland Delineation and verification letter
Proposed In-Stream Flow Control prepared by Project Engineer
Archaeological inventory survey prepared by Sean Michael Jensen
Conceptual Wetlands Mitigation Plan

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 EXPIRES: 31 August 2012

Public reporting burden for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME:
First - Ron Middle - Last – Alvarado
Company – Mountain Gate Meadows LLC
E-mail Address – ralvarado@abmcorp.com

6. APPLICANT'S ADDRESS.
Address - 5241 Arnold Avenue
City – McClellan State – CA Zip – 95652 Country – USA

7. APPLICANT'S PHONE NOs. W/AREA CODE.
a. Residence b. Business 916/565-3645 c. Fax 916/565-3649

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
First - Jeff Middle - Last – Glazner
Company – Salix Consulting, Inc
E-mail Address – jglazner@salixinc.com

9. AGENT'S ADDRESS
Address - 12240 Herdal Drive, Suite 14
City – Auburn State – CA Zip – 95603 Country – USA

10. AGENT'S PHONE NOs. W/AREA CODE
a. Residence b. Business 530/888-0130 c. Fax 530/888-0440

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Jeff Glazner, Salix Consulting, Inc. to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE 12/8/11 DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Mountain Gate Meadows

13. NAME OF WATERBODY, IF KNOWN (if applicable)
unnamed wetlands, Moody and Rancheria Creeks and tributaries

14. PROJECT STREET ADDRESS (if applicable)
Address none
City - Shasta Lake State – CA Zip -

15. LOCATION OF PROJECT
Latitude: °N 40 degrees 40' 53"
Longitude: °W 122 degrees 50' 22"

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID See Section 3.1 Supplemental Information Municipality City of Shasta Lake
Section – 20 and 29 Township – 33 North Range – 4 West on the Project City, California 7.5-minute USGS topographic quadrangles

17. DIRECTIONS TO THE SITE
The project site is located along Interstate 5 north of Redding. Traveling north, take the Mountain Gate / Wonderland Boulevard offramp, Exit #687. Cross over the freeway traveling west to Wonderland. Turn left at the intersection. The property is on the right.

18 Nature of Activity (Description of project, include all features)

The current general plan designation and zoning allows a residential/golf course community. The applicant is seeking to rezone the property to reflect the current housing market and federal regulations. This includes eliminating the current zoning for the golf course and replacing the approximate golf course zoning with wetlands preservation zoning. Overall, the proposed project will be zoned for mixed use, residential, commercial, and wetlands preservation.

19 Project Purpose (Describe the reason or purpose of the project, see instructions)

Provide additional residential housing and commercial development in the City of Shasta Lake. See Section 5.0 Supplemental Information.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20 Reason(s) for Discharge

The project cannot be constructed according to the Mountain Gate Area Plan without discharging fill to waters of the United States.

21 Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
Total = 40,000 cubic yards (mostly clean fill, but culverts and other construction materials to be used, as well		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres Approximately 10.73 acres of wetlands and other waters will be filled. See Section 8.1 of Supplemental Information.

Or

Liner Feet

23 Description of Avoidance, Minimization, and Compensation (see instructions)

See Section 9.0 of Supplemental Information.

24 Is Any Portion of the Work Already Complete? Yes ☐ No ☑ IF YES, DESCRIBE THE COMPLETED WORK

25 Addresses of Adjoining Property Owners, Lessees, Etc , Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Address – Adjoining property owners listed in Section 3.2 of Supplemental Information.

City – State – Zip –

26. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
RWQCB	401 Certification		Not applied		
CDFG	1602 Agreement		Not applied		

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
		[signature]	12/9/11

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

SUPPLEMENTAL INFORMATION FOR THE INDIVIDUAL 404 PERMIT APPLICATION FOR THE MOUNTAIN GATE MEADOWS PROJECT

CITY OF SHASTA LAKE, SHASTA COUNTY, CALIFORNIA

CORPS #SPK-2005-00827



Prepared for:
U.S. ARMY CORPS OF ENGINEERS
SACRAMENTO DISTRICT
REDDING FIELD OFFICE
152 HARTNELL AVE
REDDING, CALIFORNIA 96002-1842

On behalf of:
MOUNTAIN GATE, LLC
5241 ARNOLD AVE
MCCLELLAN, CA 95652

Prepared by:

Salix consulting, inc.
12240 Herdal Drive, Ste. 14
Auburn, CA 95603
(530) 888-0130

DECEMBER 2011

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Supplemental Information for the Individual 404 Permit Application for the Mountain Gate Meadows Project

1.0 INTRODUCTION

Mountain Gate, LLC (the Applicant) is proposing to build a mixed-use development on approximately 597 acres within the city of Shasta Lake, California. The project as proposed would affect waters of the United States, including wetlands. The extent of impacts to these resources exceed ½ acre, and the Applicant must obtain an Individual Permit from the Corps. The purpose of this document is to provide information supporting that application.

2.0 GENERAL PERMITTEE AND ADDRESS

2.1 Applicant (Prospective Permittee)

Mountain Gate, LLC
5241 Arnold Avenue
McClellan, CA 95652
Phone: (916) 565-3645
Fax: (916) 565-3649
Contact: Ron Alvarado
Email: ralvarado@sbmcorp.com

2.2 Applicant's Agent

Salix Consulting, Inc.
12240 Herdal Drive, Suite 14
Auburn, California 95603
Phone: (530) 888-0130
Fax: (530) 888-0440
Attn: Jeff Glazner
E-mail: jglazner@salixinc.com

3.0 PROPERTY OWNERSHIP

3.1 Project Site Ownership

The Mountain Gate Meadows site currently consists of 23 legal parcels as shown in Table 1.

Table 1
Project Site Ownership

APN	Owner
007-400-037, -052, -053, -054 307-210-028, -031, -032, -033, -034, -035, -036, 037 307-220-001, -002, -003, -004 307-230-007, -008, -009 307-240-001 307-380-001, -002, -003	Mountain Gate, LLC 5241 Arnold Avenue McClellan, CA 95652 Phone: (916) 565-3645

3.2 Adjacent Property Ownership

Table 2 provides the APN and owners' addresses for all the adjacent parcels.

Table 2
Adjacent Property Owners

APN	Owner
005-620-001	James E Jones 627 Eugene St. Shasta Lake, CA 96019
005-620-034	John Wayne Daniels PO Box 1662 Black Canyon City, AZ 85324
005-620-035	John Wayne Daniels PO Box 1662 Black Canyon City, AZ 85324
005-620-036	John Wayne Daniels PO Box 1662 Black Canyon City, AZ 85324
005-620-038	Jerry J & Lori K Johnson 1923 Montana Shasta Lake, CA 96019
005-620-039	Albert W & Janice G Lawson 5025 Tanya Lane Shasta Lake, CA 96019
005-620-040	Terry J Squier 5026 Tanya Lane Shasta Lake, Ca 96019
005-620-054	James E Jones 627 Eugene St. Shasta Lake, CA 96019

005-630-001	Shasta Lake Meadows LLC PO Box 494865 Redding, CA 96049
005-630-002	Shasta Lake Meadows LLC PO Box 494865 Redding, CA 96049
005-630-003	Jeffrey & Heidi Gonzales 11765 Livona Lane Redding, CA 96003
007-380-003	Robert L Alger 5369 Grand Ave Shasta Lake City, CA 96019
007-380-004	Christine M Rocha 5373 Grand Ave Shasta Lake City, CA 96019
007-380-035	Leslie Lloyd 1429 Buena Vista St. Shasta Lake, CA 96019
007-380-036	Gerald C & Amelia R Clark 6380 Aldon Way Anderson, CA 96007
007-380-037	Redevelopment Agency of The City of Shasta Lake PO Box 777 Shasta Lake, CA 96019
007-390-015	State of California
007-390-016	State of California
007-400-002	Gateway Unified School District 4411 Mountain Lakes Blvd. Redding, CA 96003
007-400-003	Gateway Unified School District 4411 Mountain Lakes Blvd. Redding, CA 96003
007-400-032	State of California
007-400-034	State of California

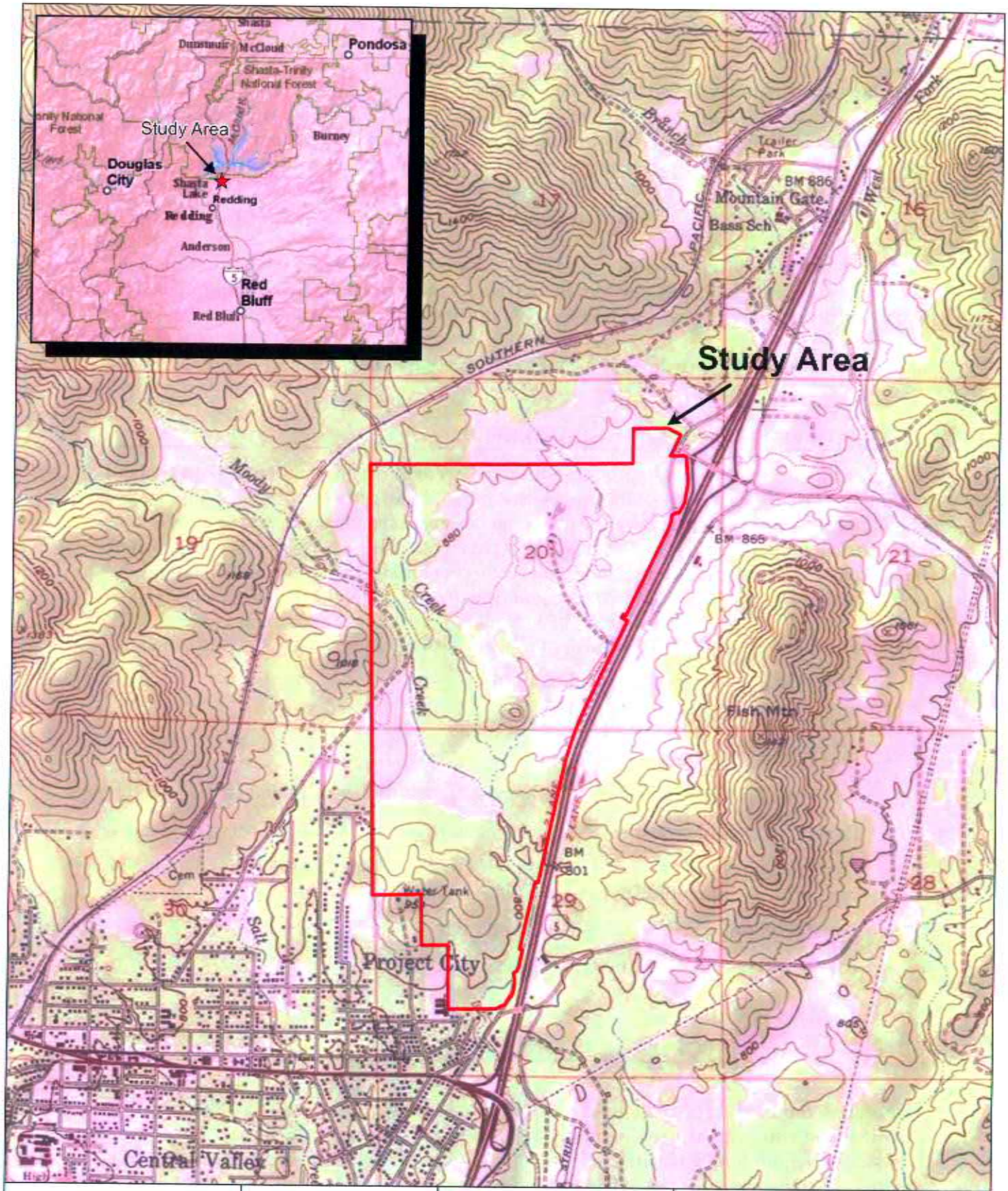
007-430-003	Homer Huford 19271 Union School Road Redding, CA 96003
007-430-004	Clyde T & Joan M Carden 19237 Union School Road Redding, CA 96003
007-430-005	Wm T & Deanna L Landgraf 13013 Tierra Oaks Drive Redding, CA 96003
007-430-011	Jack D Ballah 115 Rogue River Highway #102 Grants Pass, OR 97527
007-430-012	Barry & Jeanie Billington 9349 Placer Road Redding, CA 96001
007-430-014	Michael D Astin 19294 Union School Road Redding, CA 96003
007-430-015	Carol Rau 4146 Hensley Circle El Dorado Hills, CA 95762
007-430-016	Katrina Ann Havsgaard 13683 Antonio Drive Redding, CA 96003
007-430-017	State of California
007-430-028	Jeremy E Iwen 13042 Tierra Oaks Drive Redding, CA 96003
007-430-029	Amelia Caprini 2455 Colusa Highway Yuba City, CA 96003
007-430-039	C E Hubrig 19295 Union School Road Redding, CA 96003
007-450-004	Lewis A & Jonnie F Wilkinson 1101 Shasta Way Shasta Lake, CA 96019
007-450-054	Betty L Hall 99 Highland Rd San Luis Obispo, CA 93405
007-460-005	David G Zuckswert 7831 Terra Linda Way Redding, CA 96003

007-460-006	State of California
007-460-016	David G Zuckswert 7831 Terra Linda Way Redding, CA 96003
007-480-001	AYM Partnership P.O. Box 2259 Paradise, CA 95967
007-520-001	Shasta Dam Area PUD
007-520-004	Steven R Ross 1095 Hilltop Dr Redding CA 96003
007-520-005	AAT Communications Corp. 12444 Powerscourt Dr. #140 St. Louis, MO 63131
007-520-007	Mark D & Sharon Carbaugh 1037 Shasta Way Shasta Lake, CA 96019
307-200-007	Minnesota Mining & Manufacturing Co.
307-200-010	Minnesota Mining & Manufacturing Co.
307-200-012	Ruth Linville P.O. Box 37 Redding, CA 95099
307-210-007	County of Shasta
307-210-008	T A Powers 4700 Sly Park Road Pollock Pines, CA 95726
307-210-009	T A Powers 4700 Sly Park Road Pollock Pines, CA 95726
307-210-010	Edna Irene & Shirley Cramer 1264 Sunset Avenue Arcata, CA 95521
307-210-011	T A Powers 4700 Sly Park Road Pollock Pines, CA 95726

307-210-014	Olive Enterprises Inc. 14161 Holiday Road Redding, CA 96003
307-210-019	Robert G & Vicki A Lewis P.O. Box 2210 Cottonwood, CA 96022
307-210-021	T A Powers 4700 Sly Park Road Pollock Pines, CA 95726
307-210-024	R RV Liv Agmt Racki L P.O. Box 117 Shasta Lake, CA 96019
307-210-025	R RV Liv Agmt Racki L P.O. Box 117 Shasta Lake, CA 96019
307-210-027	R RV Liv Agmt Racki L P.O. Box 117 Shasta Lake, CA 96019
307-220-005	County of Shasta
307-220-015	Guy & Sharon Wiedel 14285 Holiday Road Redding, CA 96003
307-220-016	Edna Irene & Shirley Cramer 1264 Sunset Avenue Arcata, CA 95521
307-230-014	Minnesota Mining & Manufacturing Co.
307-240-008	Redding Reserve One LLC P.O. Box 200 Alamo, CA 94507
307-240-009	Redding Reserve One LLC 169 Hartnell Avenue #203 Redding, CA 96002
307-250-001	Ella Barbera 1994 Family Trust 2716 Foothill Boulevard Redding, CA 96002

4.0 PROJECT LOCATION

The proposed project site is located approximately eight miles north of Redding on the north end of the city of Shasta Lake (Figure 1). It is bounded on the east by Interstate 5 and to the south and southwest by residential and rural residential housing. The north and northwest



Salix consulting, inc.

N

Scale in Feet

Base map: Project City, CA, USGS 7.5 minute topographic quadrangle
Section: 20 & 29
Township: 33N
Range: 4W

Figure 1

SITE & VICINITY MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California

boundaries adjoin undeveloped land. The project site is situated in portions of Sections 20, 21, and 29 of Township 33 North and Range 4 West on the Project City, California 7.5-minute USGS topographic quadrangles (in the City of Shasta Lake). The latitude and longitude for the approximate center of the project site is 40°41'53" north and 122°20'53" west. Parcel numbers are listed above in Table 1. An aerial photograph of the site is provided in Figure 2. Site photos are located in the Wetland Delineation document in Appendix 1.

Directions to the site: The Mountain Gate Meadows site is located along Interstate 5 north of Redding. Traveling north, take the Mountain Gate / Wonderland Boulevard offramp, Exit #687. Cross over the freeway traveling west. This is the northeast corner of the project site.

Lake Shasta is located approximately 4.5 miles to the north of the project site.

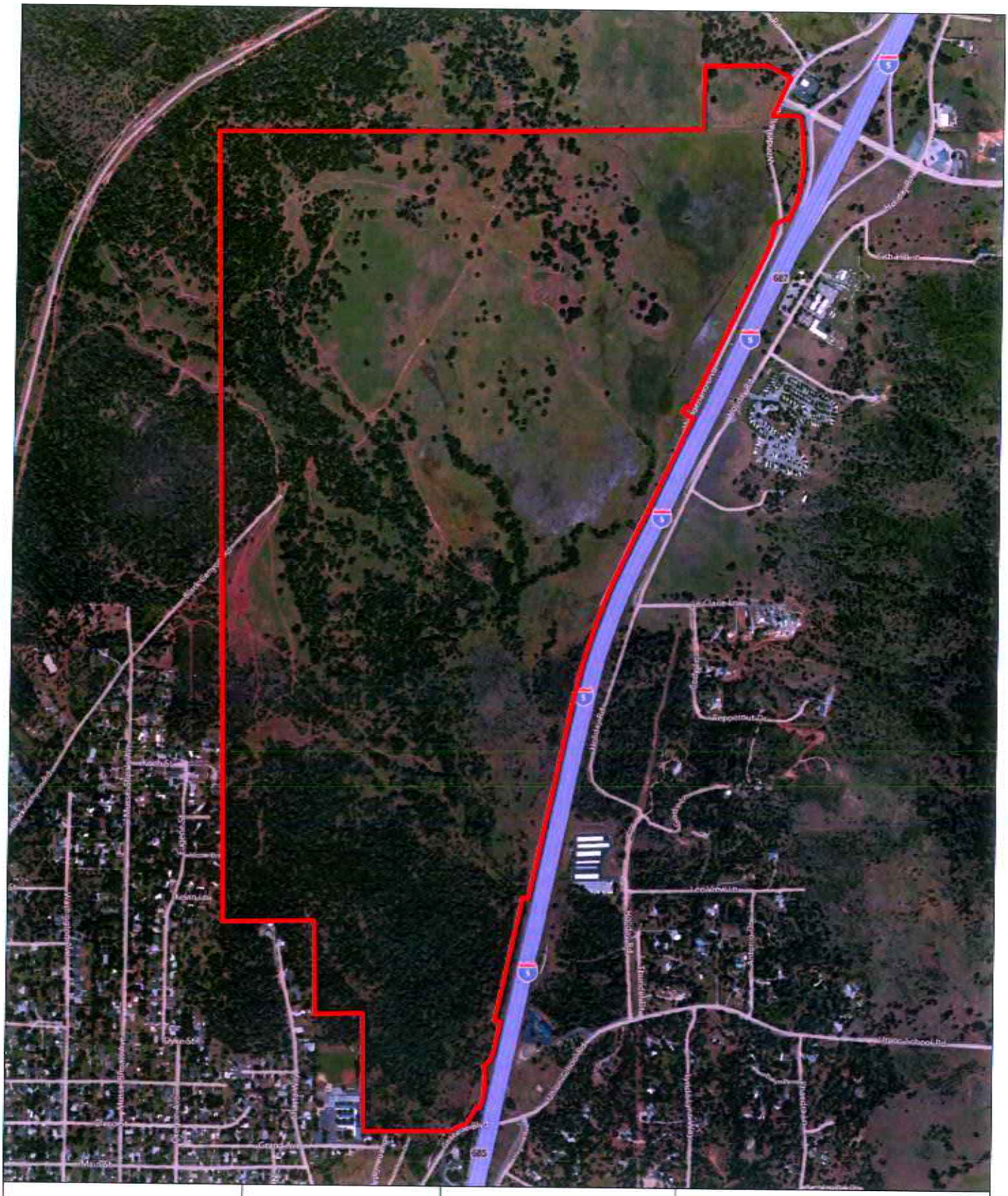
5.0 PROPOSED PROJECT PURPOSE AND NEED

The overall project purpose is to provide additional residential and commercial development within the city of Shasta Lake, California, consistent with the City's adopted General Plan and zoning for the property. The current general plan designation and zoning allows a residential/ golf course community. The applicant is seeking to rezone the property to reflect the current housing market and federal regulations. This includes eliminating the current zoning for the golf course and replacing the approximate golf course zoning with wetlands preservation zoning. Overall, the proposed project will be zoned for mixed use, residential, commercial, and wetlands preservation. Meeting the overall project purpose requires the following elements:

- Project located within the city limits of Shasta Lake,
- Consistent with City General Plan and zoning,
- Proximity to freeway access.
- Project will provide important road connections to areas with limited egress and ingress
- Project will include water system improvements that will benefit existing residences
- Project will include stormwater flow control that will mitigate an existing flooding issue immediately north of I-5 in the city of Shasta Lake
- Project will provide new public parks and trails
- Project will provide dedicated open space areas

6.0 PROPOSED PROJECT DESCRIPTION

The proposed project is the creation of a mixed-use residential and commercial Planned Development within the City of Shasta Lake. Proposed residential development ranges from high density, multi-family housing to large-lot housing with densities between one and four lots an acre. Other land uses include retail and office commercial development, open space, parks and a fire station. Table 3 provides a summary of proposed land uses.



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N

0 500 1,000

Scale in Feet

Study Area (±597)

Aerial Photo: Bing Maps, 2010.

Figure 2

AERIAL PHOTO

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California

Figure 3 generally illustrates the major land use components of the proposed development and open space elements.

Table 3

Proposed Land Use Summary

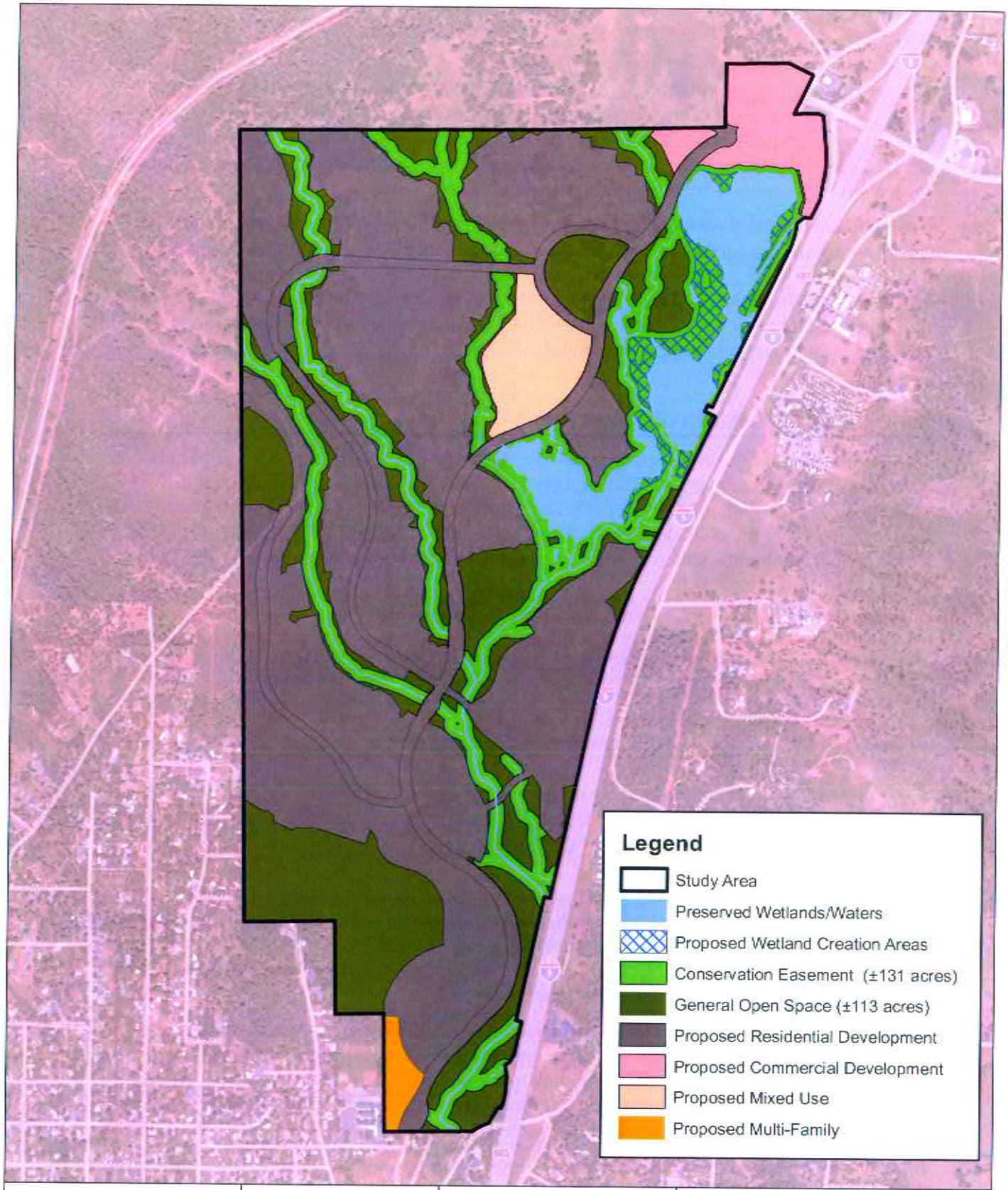
Land Use	Acreage
Residential	283
Commercial	35
Major Circulation	43
Park	15
Wetland and Open Space	221
Total	**597**

An entitlement application has been filed with the City of Shasta Lake to permit the development of residential lots and up to 35 acres of commercial/mixed-use development. In addition, the application proposes the development of neighborhood and community serving recreational uses, as well as substantial open space corridors designed to accommodate avoidance of the majority of waters of the United States within the project site. Full build-out of the project is anticipated to be phased and will likely take between 10 and 20 years.

The project also includes an internal circulation system, in the form of roads and trails, which link all of the uses in the proposed project and are designed to encourage walking and biking. The project's internal circulation system has been designed to conform to the site's existing topography. The roadway network has a number of different road widths and designs that are intended to minimize the amount of grading and pavement needed to serve the project. The trail system has also been designed to be located along biologically important areas such as drainages and wetlands, and at the base of slopes, to help limit the potential for adverse edge effects on jurisdictional waters. The trails are also designed to be both separated from roadways, and adjacent to roadways within the project boundaries.

The site is visible from Interstate 5 for much of its length but is accessed from the Mountain Gate interchange with Interstate 5 at the north end of the project site. Access to Shasta Dam Boulevard to the south will eventually be through a planned roadway extension from Shasta Way, or connection to Cascade Boulevard, which is currently identified on the City's General Plan and is necessary to ensure public safety as a secondary access to the project site . Existing roadway access is from Wonderland Boulevard which dead-ends at the property gate adjacent to I-5.

Off-site improvements include a roadway to connect Shasta Dam Boulevard with the proposed project. The roadway will extend around a redevelopment site owned by the City of Shasta Lake. While the roadway connection and redevelopment of the adjacent property has been planned by the City for some time, the construction of the roadway and new intersection is essential to the proposed project.



Salix consulting, inc.

Figure 3

Development/Open Space Components

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California

A new roadway will provide the primary access to the Mountain Gate Interchange with I-5. While the property across which the new roadway must be constructed is owned by the project applicant, the property is outside of the City of Shasta Lake and is within the jurisdiction of Shasta County. Work on the roadway may require an encroachment permit and maintenance agreement between the City of Shasta Lake and Shasta County.

Extension of water and wastewater collection systems to the site will be required and will involve work in Cascade Boulevard and the new roadway extending from the Boulevard onto the project site. These infrastructure extensions will follow major project circulation routes and are designed to limit the need for grading and site modification. The proposed project will also require construction of a water storage tank to be located onsite in the north portion of the site or offsite located west of the property on top of a hill.

7.0 WATERS OF THE UNITED STATES

The Mountain Gate Meadows site was initially delineated by North Fork Associates between November 2004 and January 2005. (See Appendix 1) Additional data was collected in November and December 2006 and February, April, and October of 2007. On May 6, 2008, the Corps verified that the delineation map dated January 25, 2008 accurately depicts the extent of Corps jurisdiction on the site. Table 4 is an acreage summary of waters of the United States.

Table 4
Waters of the United States

Type	Acreage
Other Waters:	
Ephemeral stream	0.71
Intermittent Stream	8.39
Wetlands:	
Wetland Swale	1.57
Seasonal Wetland	46.88
Total Waters of the United States	**57.55**

Ephemeral streams have flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round, and groundwater is not a source of water. Runoff from rainfall is the primary source providing stream flow. On the proposed project site, ephemeral streams typically have rocky streambeds that lack hydrophytic vegetation.

Ephemeral streams function in transporting sediment, nutrients, and organic matter downstream to larger tributaries. The ephemeral streams on the proposed project site are in relatively good condition, except where they have been used by off-road vehicles. At these locations, the functions are somewhat compromised and the transport of sediment by erosion may have increased.

Intermittent streams have flowing water during certain times of the year, usually during the winter rainy season. Intermittent streams have a groundwater component that provides flow during periods between rainfall events. Depending on the amount of groundwater discharge,

intermittent streams may not have flowing water during dry periods. On the proposed project site, intermittent streams have rocky channels that flow for at least half of the year and that generally support sparse hydrophytic or riparian vegetation such as willows. The two primary intermittent streams are Moody Creek and Rancheria Creek. These two creeks have similar geomorphology.

Like ephemeral streams, intermittent streams transport materials downstream. However, because they have a groundwater component and typically have standing water for periods, they provide additional species habitats not otherwise available. Most of the riparian habitat on the site occurs along the intermittent streams. The pools of standing water are also a source of organic decomposition, thus providing additional nutrients to downstream systems.

Wetland swales are areas through which water may flow during periods of rainfall, but not with enough duration or intensity to produce the bed-and-bank morphology more typical of stream channels. Wetland swales usually have substantial cover provided by hydrophytic vegetation. The Mountain Gate Meadows site supports several wetland swales, typically connecting seasonal wetlands.

Water flows through wetland swales, so that these features may provide functions similar to t hose in streams. However, the vegetative cover often associated with wetland swales function in filtering nutrients and other materials from the flowing water. Where vegetation is dense, soils are often higher in organic matter.

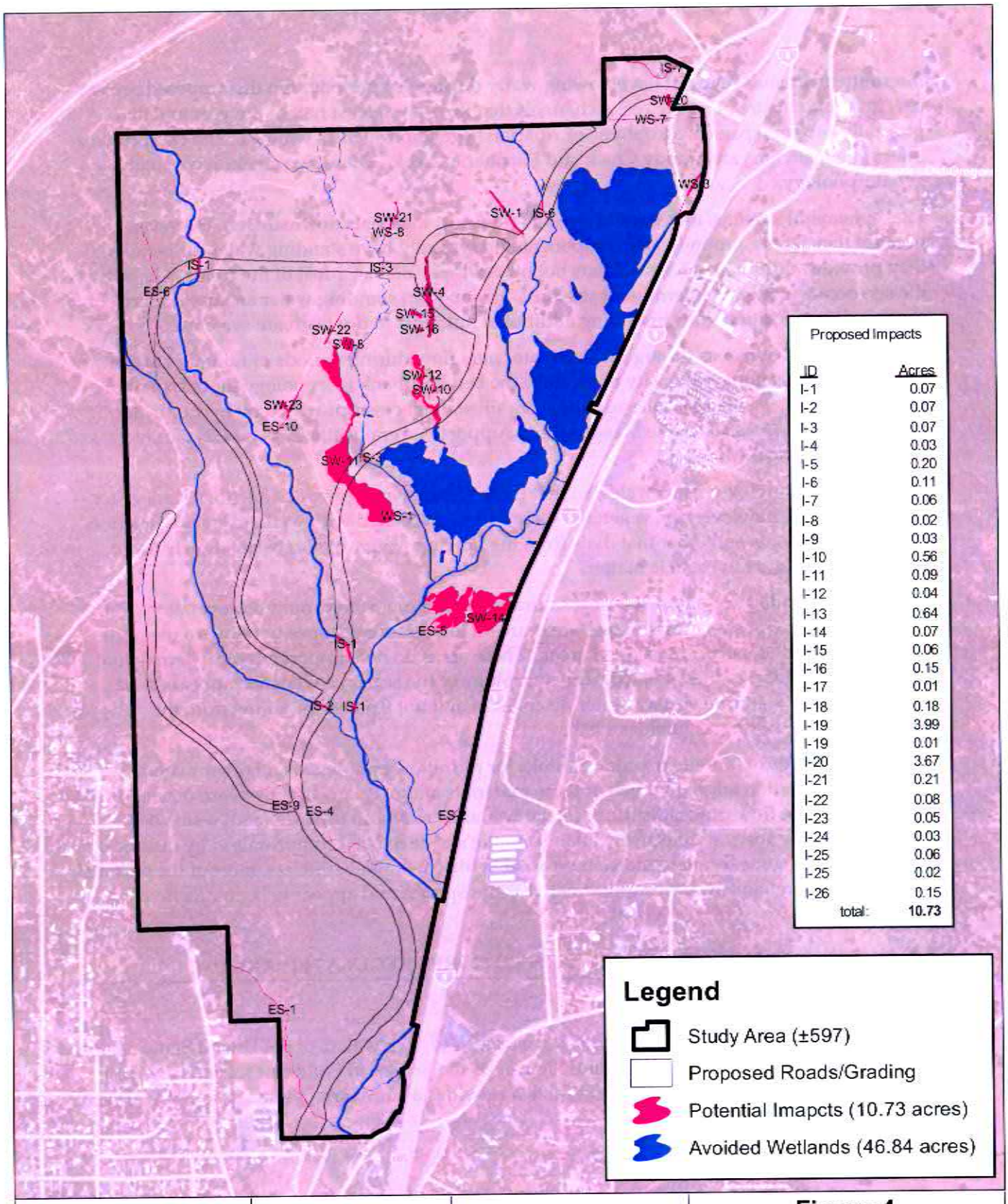
Seasonal wetlands are areas of seasonal saturation that support hydrophytic vegetation. On the proposed project site, most of these areas are on low-gradient slopes trending to the south. Others are depressional within sloped areas. These areas do not support a typical vernal pool flora and were not classified as such. The hydrology of the seasonal wetlands appears to be groundwater driven from surface water percolation and not from surface flow from the properties to the north (Kleinfelder 1995).

Seasonal wetlands on the site function as sinks for nutrients, pollutants, and other materials. The dense vegetation takes up much of these materials and may function decrease the amount of pollutants that flow downstream. Seasonal wetlands may also provide food, water, and cover for wildlife species. Seasonal wetlands on the site have been compromised by historical land use and, in some locations, current off-road vehicle use. Nevertheless, most of the seasonal wetlands (and wetland swales) support native plant species and appear to be in functionally good condition.

8.0 PROPOSED PROJECT AND IMPACTS TO CORPS REGULATED AREAS

8.1 Description of Impacts

The proposed project will impact at least some of each type of waters of the United States as shown on the impact map (Figure 4), and Figure 5 is the proposed build-out scenario showing land use and preservation components. Table 5 provides a summary of impacts and preserved wetlands.



Proposed Impacts

ID	Acres
I-1	0.07
I-2	0.07
I-3	0.07
I-4	0.03
I-5	0.20
I-6	0.11
I-7	0.06
I-8	0.02
I-9	0.03
I-10	0.56
I-11	0.09
I-12	0.04
I-13	0.64
I-14	0.07
I-15	0.06
I-16	0.15
I-17	0.01
I-18	0.18
I-19	3.99
I-19	0.01
I-20	3.67
I-21	0.21
I-22	0.08
I-23	0.05
I-24	0.03
I-25	0.06
I-25	0.02
I-26	0.15
total:	**10.73**

Legend

- Study Area (±597)
- Proposed Roads/Grading
- Potential Imapcts (10.73 acres)
- Avoided Wetlands (46.84 acres)

Salix consulting, inc

N

0 500 1,000

Scale in Feet

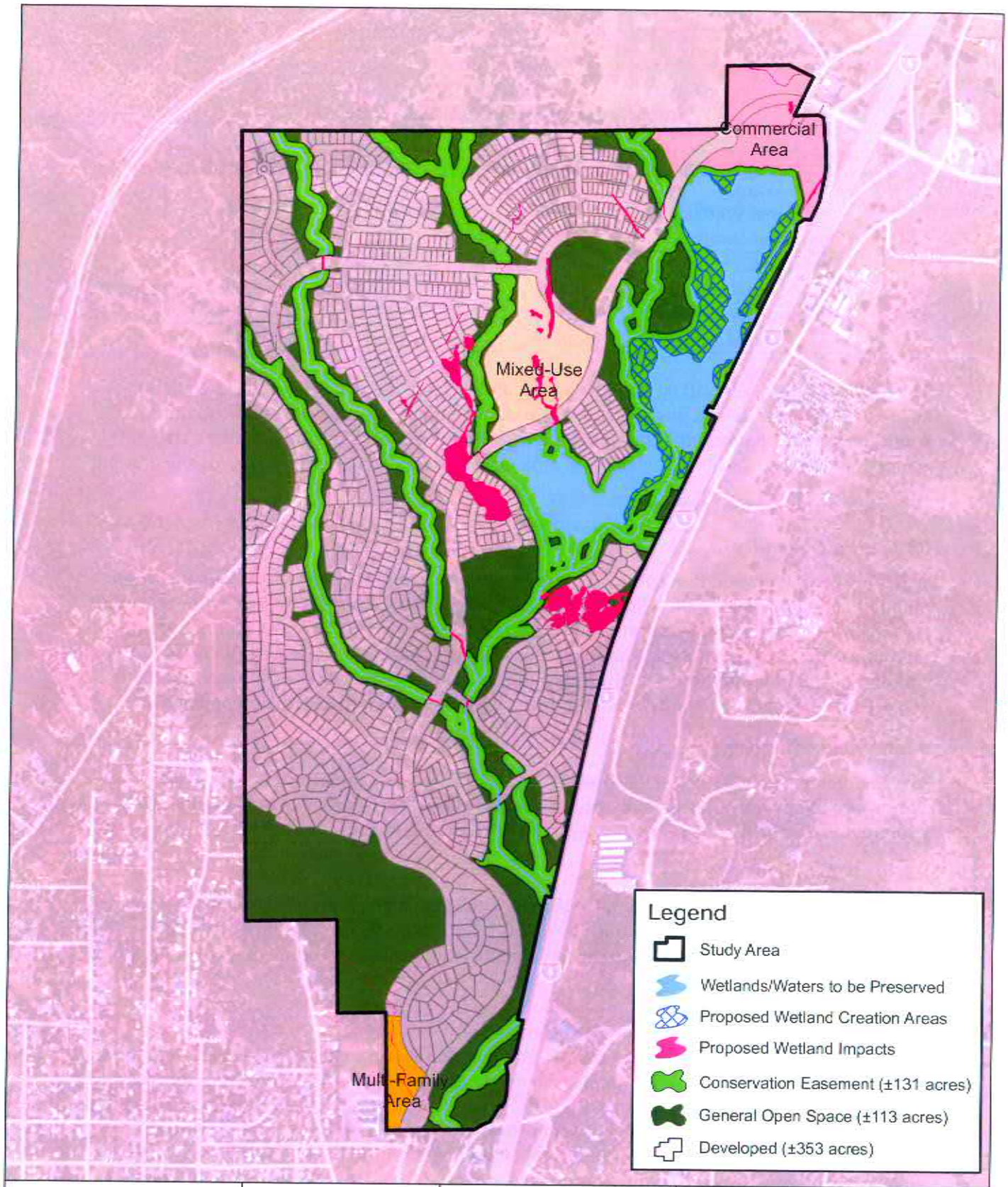
Aerial Photo: Bing Maps, 2010
Wetland Data: Salix Consulting, Inc.

Figure 4

PROPOSED WETLAND IMPACTS

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California



Salix consulting, inc

N

0 500 1,000

Scale in Feet

Aerial Photo: Bing Maps, 2010.

Figure 5

Land Plan/Open Space

Mountain Gate Meadows

City of Shasta Lake, Shasta County, California

Table 5
Impacts to Waters of the United States

Type	Existing	Impacted	Preserved
Other Waters:			
Seasonal Wetland	46.88	9.78	37.10
Wetland Swale	1.59	.22	1.37
Wetlands:			
Ephemeral Stream	.70	.31	.39
Intermittent Stream	8.38	.22	8.16
Total Acreage	57.55	10.53	47.02

The majority of impacts will be to seasonal wetlands. Small impacts will occur to wetland swales, ephemeral streams, and intermittent streams. Impacts to all intermittent streams and some ephemeral streams will occur at road crossings as shown on the impact map. The remaining impacts to wetland swales and ephemeral streams will occur because of site grading.

8.2 Impact Assessment

8.2.1 Water Quality

A Storm Water Pollution Prevention Plan will be prepared and implemented to ensure onsite and downstream water quality. In addition, the Environmental Impact Report being prepared for the proposed project may provide additional Best Management Practices and mitigation measures. The purpose of these plans and measures is to ensure the integrity of onsite preserved wetlands and downstream water quality. Full implementation and monitoring of project erosion control methods should reduce impacts to water quality to acceptable levels.

8.2.2 Aquifer Recharge

The Kleinfelder report (1995) states that the presence of impermeable surfaces a few feet from the surface likely precludes the presence of deep aquifers. Therefore, it is unlikely that the proposed project will adversely affect aquifer recharge in the area.

8.2.3 Water Flows

All intermittent streams and many the ephemeral steams will be preserved or partially avoided in the project's open space, and water flows through these systems will not be adversely affected. In addition, the highest quality seasonal wetlands and the connecting wetland swales will be preserved.

8.2.4 Floodplain

Portions of the site along the creeks are in a 100-year floodplain. The project is designed to avoid impacts to the 100-year floodplain. There are three road crossings of the existing 100-year floodplain that are designed so they will not adversely impact the 100-year floodplain upstream or downstream of this project. The project proposes to prevent flooding of downstream properties and to maintain pre-project flow characteristics within the natural streams in the vicinity and downstream of the proposed project. (See Appendix 2- Proposed In-stream Flow Control .)

8.2.5 *Ecological Integrity*

Portions of the site have retained ecological integrity, while others have been exposed to long-term off-road vehicle use and trash dumping. The integrity of the wetlands onsite will be maintained by including them in the project's open spaces with appropriate buffers between the preserved wetlands and the proposed project. The preserved and created wetlands will be protected by a legal Conservation Easement. In addition, in most areas, the Conservation Easement will be bordered by additional permanent open space which will increase the buffer with unaltered landscape. The open space outside of the Conservations Easement will be a part of the approved project and will be managed through agreements with the City of Shasta Lake.

8.2.6 *Special Aquatic Sites*

The majority of waters of the United States on the site are seasonal wetlands and wetland swales. Wetlands are considered special aquatic sites.

8.2.7 *Special Status Species*

The resource assessment prepared for the proposed project site identified several special status plants as potentially occurring on the site. In 2006 North Fork Associates conducted botanical surveys on the site. These surveys were floristic according to guidelines for rare plant surveys issued by the California Department of Fish and Game. No special status plant species were observed during the 2006 field surveys.

The only special status wildlife species identified as potentially occurring were Cooper's hawk and other raptors. Pre-construction surveys for these species are recommended.

8.2.8 *Contaminants in Fill Material*

Only clean fill material will be discharged to waters of the United States. No toxic, hazardous, or otherwise inappropriate material will be discharged.

8.2.9 *Water Supplies*

If approved, the proposed project would likely get water from one or more regional sources. The Environmental Impact Report will address the issue of water supplies and may provide mitigation measures for potentially significant impacts. Consequently, water supplies are not likely to be adversely affected by the proposed project.

8.2.10 *Fisheries*

In a typical year, the streams on the project site flow for approximately six months and thus, do not support year-round fisheries. The site drains to Stillwater Creek which drains to the Sacramento River. The streams on the site are not considered "Essential Fish Habitat" (EFH) or Critical Habitat. However, areas farther downstream (outside of project study area) are designated as EFH, and lower reaches of Stillwater Creek are designated as Critical Habitat for steelhead. It is unlikely that Chinook would occur on site, but surveys have not been conducted to absolutely conclude their absence.

Erosion control plans and Best Management Practices will be implemented to ensure downstream water quality and to address potential adverse effects on downstream fisheries.

8.2.11 Water Related Recreation

The site does not now have water-related recreation, and the proposed project will not adversely affect water-related recreation, including offsite recreation.

8.2.12 Aesthetics of the Aquatic Ecosystem

For the most part, the aesthetics of the aquatic ecosystem will be unaffected by the proposed project. All preserved wetlands and waters will be contained within an open space parcel and managed in perpetuity as described in Section 11.0.

8.2.13 Parks, Opens Spaces, and Other Special Areas

The proposed project will not affect parks, open spaces, or other special areas. The proposed project includes parks and open space areas designed to protect important onsite biological resources.

8.2.14 Navigation

The proposed project will not affect navigation.

8.2.15 Historic Properties

Jensen & Associates prepared a cultural report for the site in 2005 and updated the report in 2010. That report indicated the presence of five prehistoric sites and one historic site. One of the prehistoric sites may be eligible for listing on the National Register of Historic Places. Two copies of the report are provided with this submittal. See Appendix 3 for Archaeological Inventory Survey.

8.2.16 Prime and Unique Farmland

The Initial Study/Notice of Preparation for the proposed project concluded that the proposed project would not adversely impact Prime Farmland or Farmland of Statewide Importance (City of Shasta Lake 2005.

9.0 AVOIDANCE AND MINIMIZATION

The majority of waters of the United States (47.02 acres) have been avoided and placed among several open space parcels. Thus, nearly 80 percent of the wetlands and waters have been avoided.

Minimization of impacts to waters of the United States will be obtained by using standard erosion control methods and other Best Management Practices to ensure protection of preserved onside wetlands and waters and downstream water quality.

10.0 ALTERNATIVES ANALYSIS

An Alternatives Analysis for compliance with the 404(b)(1) Guidelines is in progress and will be submitted soon. That analysis will include two offsite alternatives and at least two onsite alternatives. It will be provided to the Corps when it is completed.

11.0 MITIGATION

Mitigation will occur onsite at a ratio of slightly greater than 1:1. Onsite avoidance and preservation will be combined with onsite creation. Details of the proposed mitigation will be provided upon acceptance of the conceptual plan. (See Appendix 4: Conceptual Wetlands Mitigation Plan)

If the applicant moves forward with onsite creation, a mitigation and monitoring plan will be prepared according to Corps' specification and submitted to the Corps for approval.

All preserved wetlands (including any wetlands created for mitigation) will be in separate open space parcels, and the applicant will provide a conservation easement or other conservation instrument to protect the parcels. An endowment will be established and a third-party conservator will be provided to manage the open space. In addition, a detailed management plan will be prepared and submitted to the Corps for approval. Details of the open space management will be provided with the detailed wetland mitigation plan.

12.0 REGULATORY REVIEW AND APPROVALS

12.1 Regional Water Quality Control Board

The applicant will apply for 401 water quality certification from the Regional Board approximately 90 days before the CEQA Environmental Impact Report is certified. A copy of that application will be provided to the Corps when it is submitted to the Regional Board.

12.2 California Department of Fish and Game

The applicant will apply for a 1602 streambed alteration agreement from the Department approximately 90 days before the CEQA Environmental Impact Report is certified. A copy of that application will be available on request.

12.3 U.S. Environmental Protection Agency

An alternatives analysis for compliance with the 404(b)(1) Guidelines is not complete. The applicant will analyze two offsite alternatives and two or three onsite alternatives. The analysis will be submitted to the Corps when it is complete.

12.4 U.S. Fish and Wildlife Service

No resources within the jurisdiction of the federal Endangered Species Act are expected or known to occur on the site.

12.5 National Historic Preservation Act

A cultural resource has been prepared and is being updated. Two copies of the updated report are included with this report.

12.6 California Environmental Quality Act

The City of Shasta Lake (the Lead Agency) is preparing programmatic EIR for the Mountain Gate Area Plan. The EIR and supporting documents will be available on request when they are completed.

APPENDIX 1:

WETLAND DELINEATION AND VERIFICATION

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

May 6, 2008

Regulatory Division (SPK-2005-00827)

Milo Terzich
Premier Homes
8205 Sierra College Boulevard
Suite 100
Roseville, California 95661

Dear Mr. Terzich:

We are responding to your consultant's request for an approved jurisdictional determination for the Mountain Gate Meadows Project. This approximately 607-acre site is located in Section 20 and 29, Township 33 North, Range 4 West, MDB&M, Latitude 40.6956 North, Longitude 122.3489 West, City of Shasta Lake, Shasta County, California.

Based on available information, we concur with the estimate of waters of the United States, as depicted on the January 25, 2008, Appendix C, Wetland Delineation Map, Mountain Gate Meadows drawing prepared by D. Garrett of North Fork Associates. Approximately 57.54 acres of waters of the United States, including wetlands, are present within the survey area. These waters are regulated under Section 404 of the Clean Water Act, since they are adjacent to, or are hydrologically connected to intermittent streams which are tributary to Churn Creek or Stillwater Creek. Churn Creek and Stillwater Creek are tributary to the Sacramento River, a navigable water of the United States.

This verification is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This letter contains an approved jurisdictional determination for your subject site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331.

A Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form is enclosed. If you request to appeal this determination you must submit a completed RFA form to the South Pacific Division Office at the following address: Administrative Appeal Review Officer, Army Corps of Engineers, South Pacific Division, CESPD-PDS-O, 1455 Market Street, San Francisco, California 94103-1399, Telephone: 415-503-6574, FAX: 415-503-6646.

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the NAP. Should you decide to submit an RFA form, it must be received at the above address by 60 days from the date of this letter. It is

not necessary to submit an RFA form to the Division Office if you do not object to the determination in this letter.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This determination has been conducted to identify the limits of Corps of Engineers' Clean Water Act jurisdiction for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please complete our customer survey at *http://www.spk.usace.army.mil/customer_survey.html*. Your passcode is "conigliaro".

Please refer to identification number SPK-2005-00827 in any correspondence concerning this project. If you have any questions, please contact Thomas L. Schumann at our Redding Field Office, 152 Hartnell Avenue, Redding, California, 96002, email *thomas.l.schumann@usace.army.mil*, or telephone 530-223-9536. You may also use our website: *www.spk.usace.army.mil/regulatory.html*.

Sincerely,

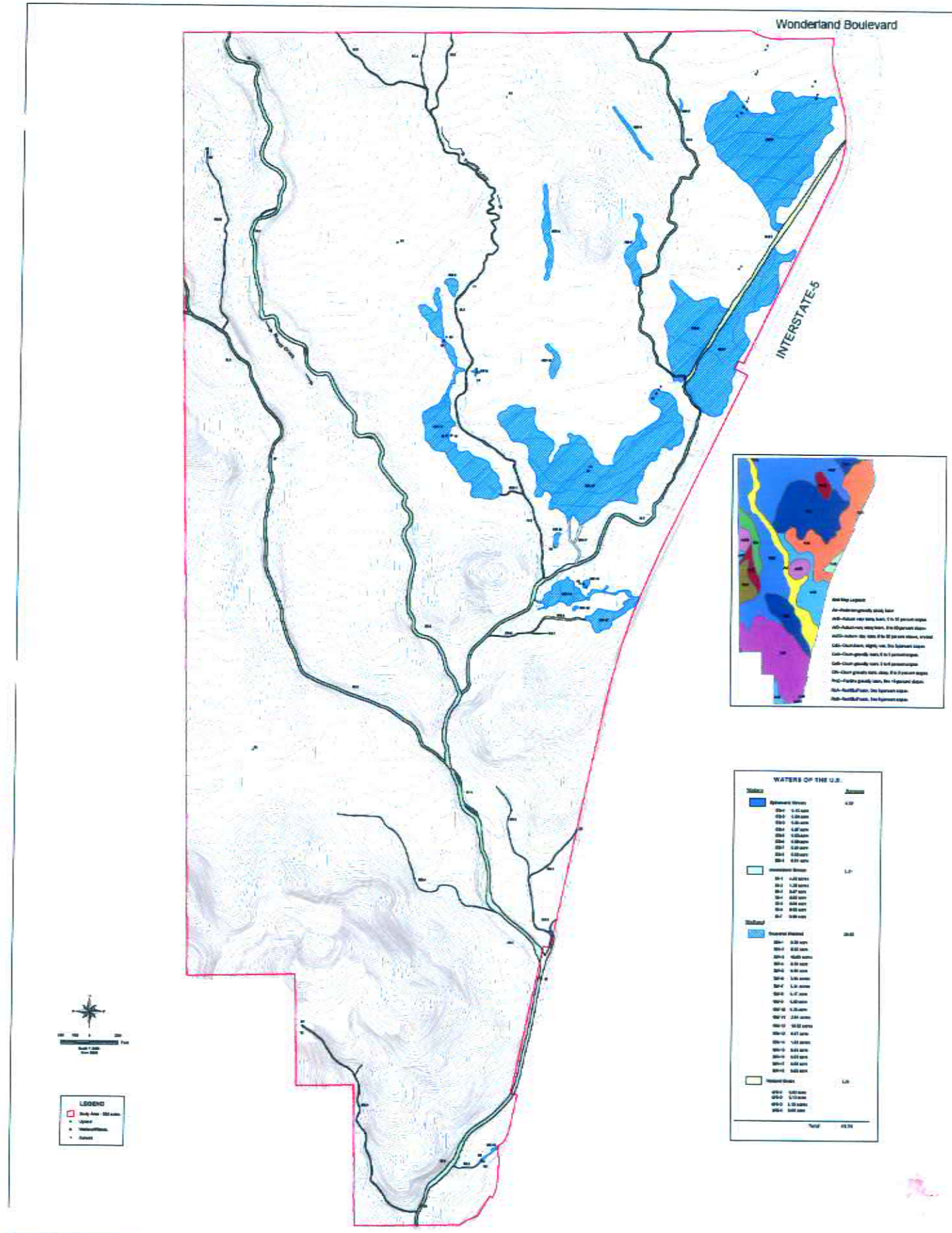
ORIGINAL SIGNED

Nancy A. Haley
Chief, California North Branch

Enclosure(s)

Copy furnished without enclosure(s)

Jeff Glazner, North Fork Associates, 110 Maple Street, Auburn, California 95603
Andrew Jensen, California Regional Water Quality Control Board, 415 Knollcrest Drive, Suite 100, Redding, California 96002-0182



north fork

Notes:
- Topographic base map provided by Skeesh Dunlap Harper, Inc, 2004.
- Field delineations conducted on April and November of 2005 and January of 2006 by Jeff Diemer, Pat Bobbitt and Kevin Thomas.
- This map subject to U.S. Army Corps of Engineers Verification.

Appendix C

WETLAND DELINEATION MAP

Mountain Gate Meadows

City of Shasta Lake, Shasta County, CA

March 28, 2006

Appendix 4.7-1

STORM DRAIN ANALYSIS

October 2013
Job #04.0122.002

MOUNTAIN GATE AT SHASTA

SHASTA LAKE CITY, CA

PRELIMINARY STORM DRAINAGE ANALYSIS

Prepared by

SHARRAH DUNLAP SAWYER, INC.
6590 LOCKHEED DRIVE
REDDING, CALIFORNIA 96002
PH 530.221.1792 / FAX 530.221.8369
WWW.SDSENGINEERING.COM

This report was written by or under the direct supervision of:

Kristen L. Reagan, P.E.
Civil Engineer



10-29-13

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Appendix A

Pre-development Drainage Basin Map
Post-development Drainage Basin Map
Stormwater Detention Areas

EXECUTIVE SUMMARY

SITE LOCATION:
The proposed Mountain Gate at Shasta Project is located within the limits of the City of Shasta Lake. Figure 1 – Vicinity Map shows the project location north of Shasta Dam Blvd. and west of Interstate 5.

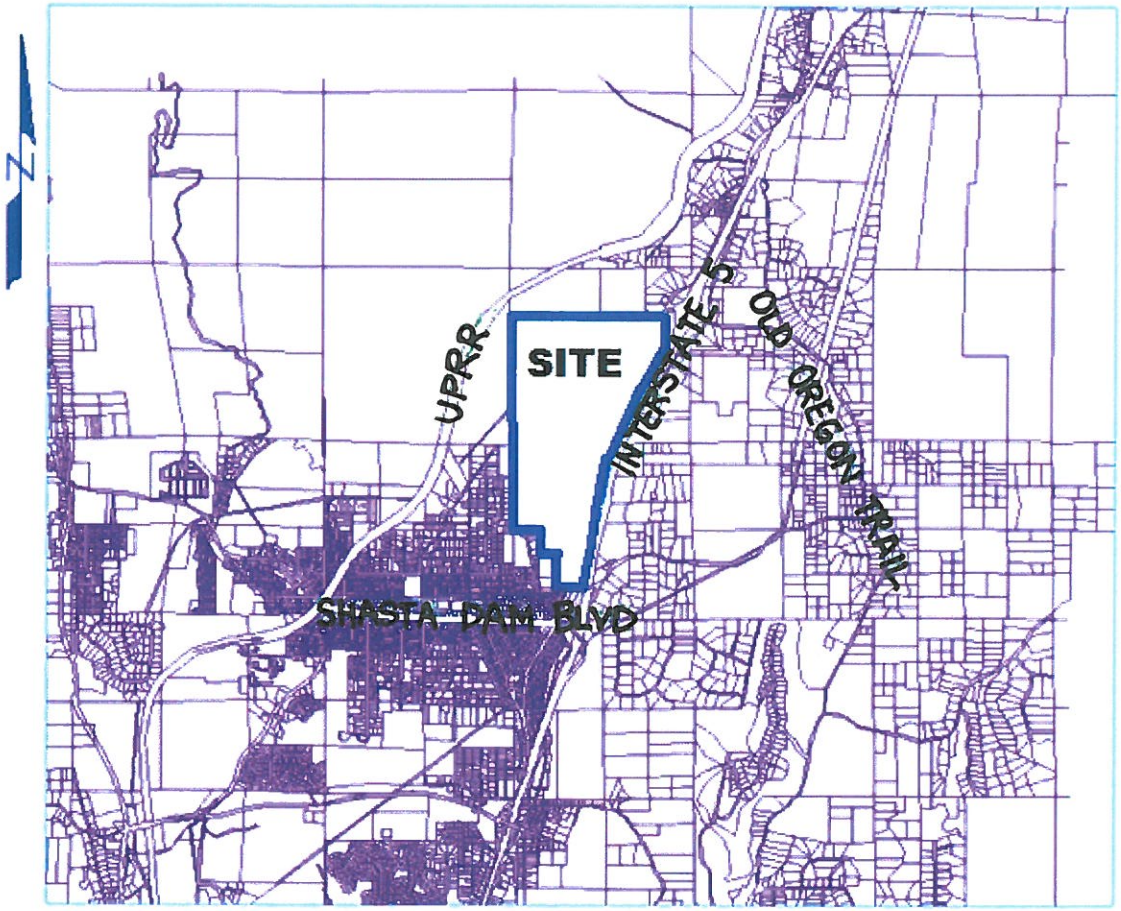


FIGURE 1 – VICINITY MAP

DESIGN CRITERIA:
To meet City of Shasta Lake requirements, the design is required to maintain or reduce pre-development peak flows for the 10-, 25-, and 100-year design storm events. The project consists of fourteen subbasins, Basins 5407, B5408, B5411, B5412, B5413, B5418, B5419, B5420, B5415, B5404, B5424, B5426, B5432, and B3430. These subbasins drain southeasterly along Moody Creek towards the southern boundary of the project, ultimately to Stillwater Creek. A portion of the project also drains westerly towards Salt Creek. For the purposes of this report this basin will be referred to as Basin A (BA).

See Appendix A for *Pre- and Post-Development Drainage Basin Map.* HEC-1 was used to estimate the 10-, 25-, and 100-year runoff and the size of the future detention facilities which will be designed in detail prior to approval of construction documents.

JAR
10-29-13

PROPOSED DRAINAGE SYSTEM:

In the post-developed condition, the runoff from all the Moody Creek subbasins except B5424, B5426, B5432, and B5430 will be detained by four detention facilities. See the Stormwater Detention Area Exhibit in Appendix A for the detention facility locations. Facility #1 will be constructed in B5418. The metered runoff from the facility will be conveyed through a proposed box culvert to the existing drainage swale running southerly towards Road 'A'. Facility #2 will be constructed in Basin 5420 and will detain the metered runoff from facility S5418 and the runoff from Basins 5419 and 5420. The metered runoff from the facility will be conveyed through a proposed box culvert under Road 'A' to an existing drainage swale running through Basin 5415. Facility #4 will be constructed in Basin 5415 and will detain the metered runoff from facility S5420 and the runoff from Basins B5407, B5408, B5409, B5410, B5411, B5412, B5413, and B5415. The metered runoff from the facility will be conveyed to the existing drainage swale in B5424 via a proposed box culvert. Facility #3 will be constructed in Basin B5404B and will detain runoff from that basin as well as runoff from Basin B5404A. The metered runoff from the facility will be conveyed by a proposed box culvert to the existing drainage swale in B5424. The metered runoff will be conveyed by an existing drainage swale through B5430 towards Interstate 5 where it will combine with the undetained runoff from the remainder of the project.

Flows from the detention facilities will be metered out such that post-developed flow rates for the entire project will be less than pre-development flows for the 10-, 25-, and 100-year design storm events, providing maximum benefit downstream especially at the existing Interstate 5 culvert. Table 1 shows the preliminary pre- and post-developed outflow for the project.

Table 1: Preliminary Flows

HEC-1 ID	10-year (cfs)		25-year (cfs)		100-year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
C5430 (south bndy of proj)	2,065	1,919	2,553	2,332	3,440	2,957
C5434 (I-5 culvert)	2,103	1,955	2,598	2,376	3,498	3,015
C5495 (west fork of Stillwater)	6,330	6,221	7,789	7,586	10,465	10,029

In the post-developed condition, Basin A decreases in size from 28.3 acres to 4.5 acres significantly decreasing the runoff tributary to Salt Creek. Therefore, it has been determined that detention is not required. Table 2 shows the preliminary pre- and post-developed outflow at the western boundary.

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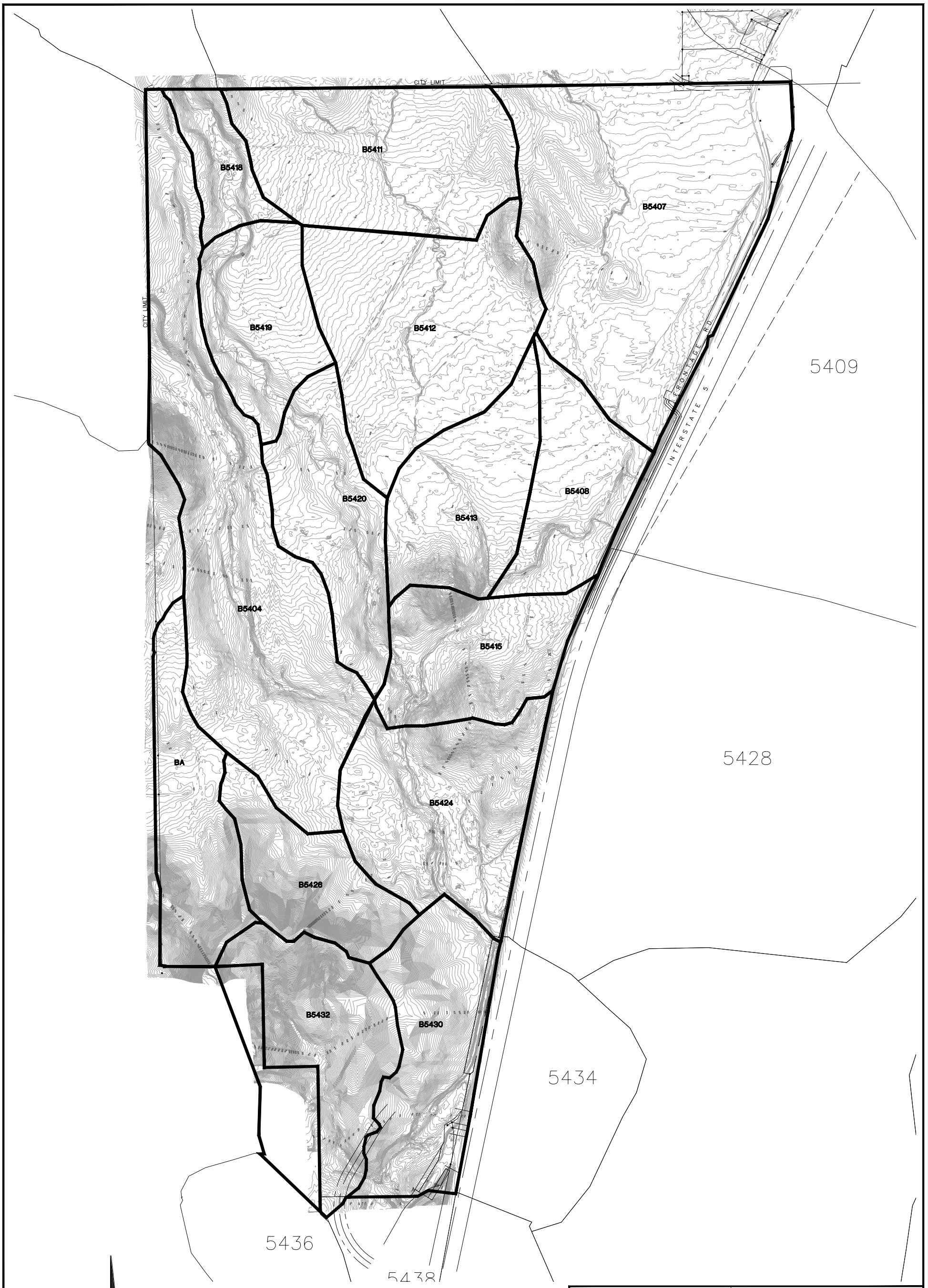
Table 2: Preliminary Flows						
HEC-1 ID	10-year (cfs)		25-year (cfs)		100-year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
BA	43	10	57	12	85	17

CONCLUSION:

The proposed storm drainage system can and will be designed in accordance with the City of Shasta Lake requirements. With implementation of this system, no significant adverse impacts related to stormwater flow rate are expected from construction of the project.

KR
10.29.13

APPENDIX A



CITY OF REDDING

MT. GATE
PRE-DEVELOPMENT
DRAINAGE BASIN MAP

DATE: OCTOBER 2013	SHEET 1 OF 1
VERTICAL: 1"=NA	
HORIZONTAL: 1"=300'	

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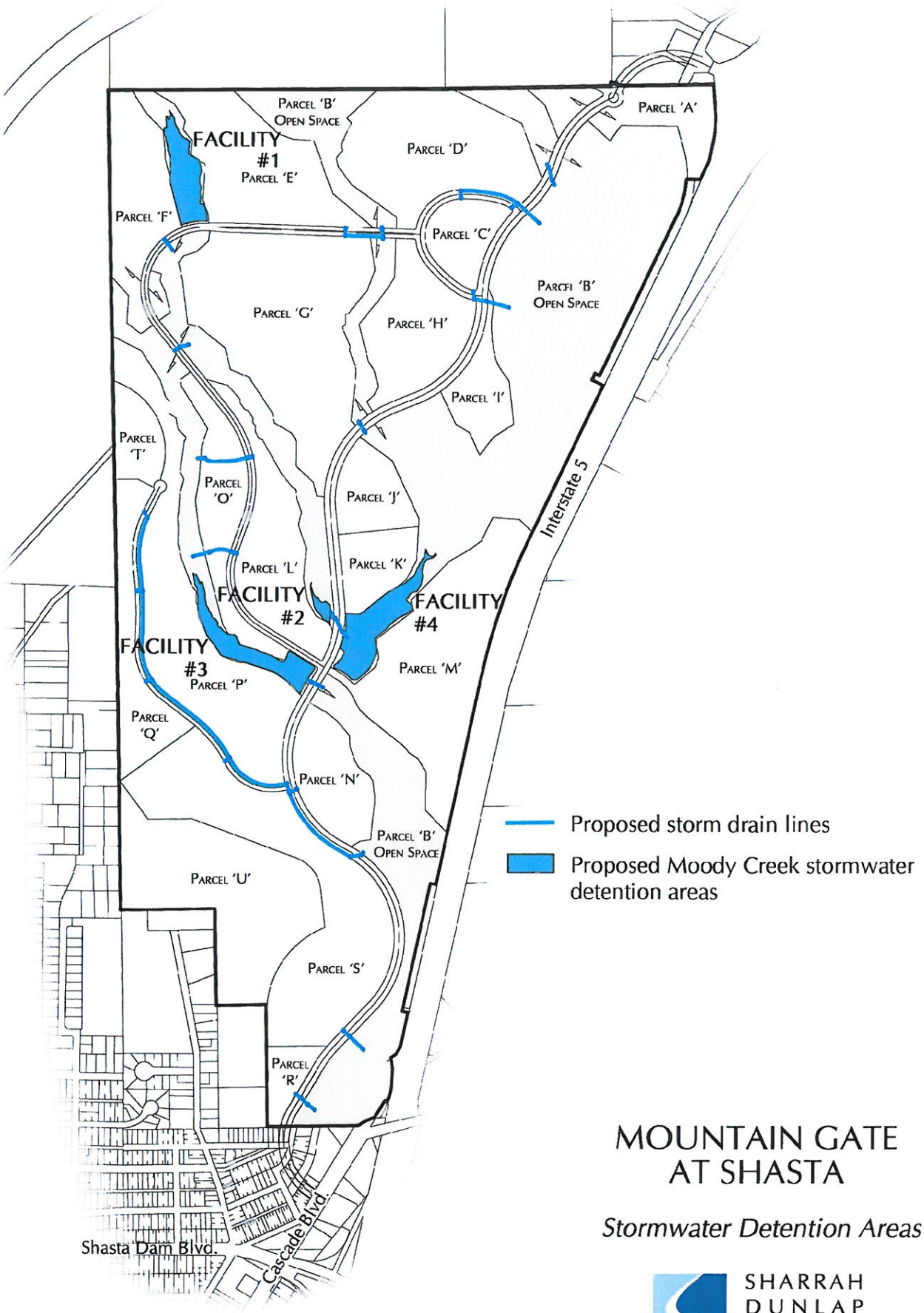


CITY OF REDDING

MT. GATE
POST–DEVELOPMENT
DRAINAGE BASIN MAP

DATE: OCTOBER 2013	SHEET 1 OF 1
VERTICAL: 1"=NA	
HORIZONTAL: 1"=300'	

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MOUNTAIN GATE AT SHASTA

Stormwater Detention Areas

SHARRAH DUNLAP SAWYER
INCORPORATED

October 2013
Job #04.0122.002

MOUNTAIN GATE AT SHASTA

SHASTA LAKE CITY, CA

PRELIMINARY STORM DRAINAGE ANALYSIS

Prepared by

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This report was written by or under the direct supervision of:

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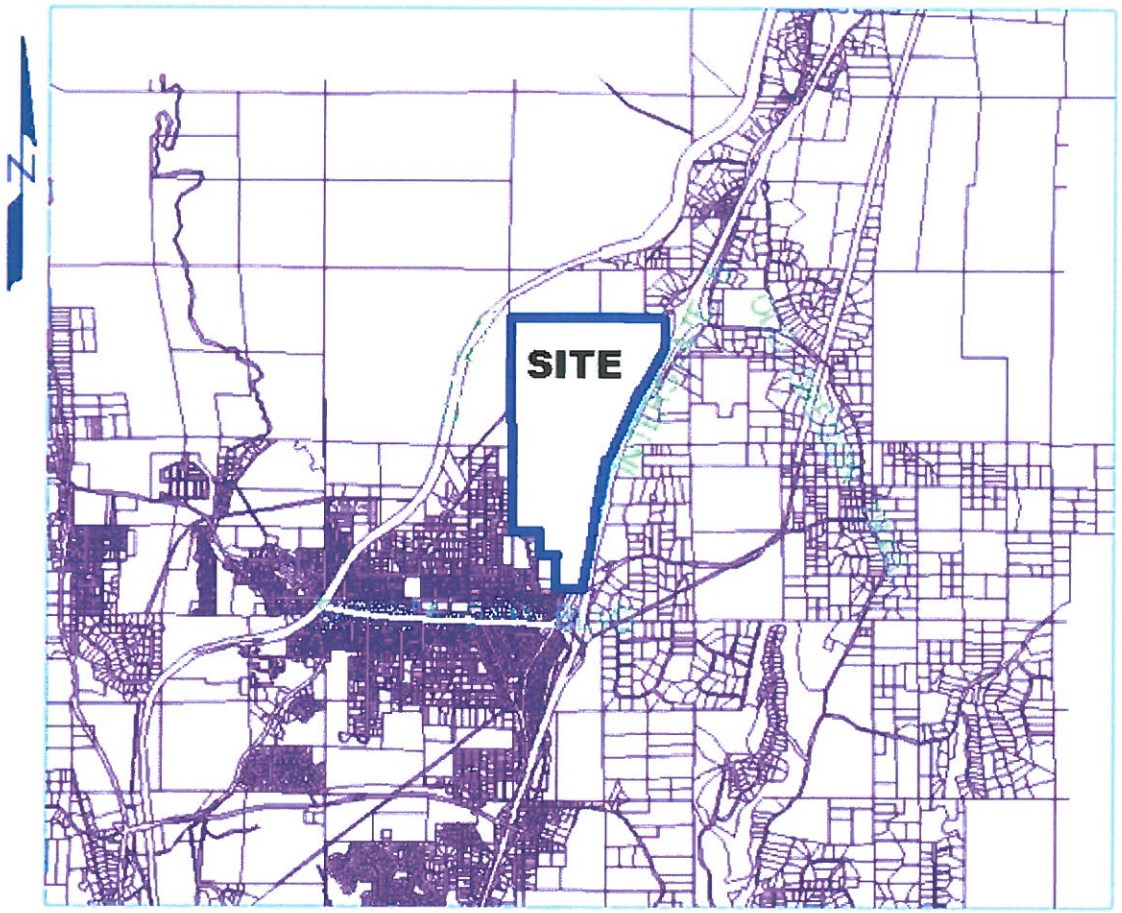


FIGURE 1 – VICINITY MAP

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See Appendix A for *Pre- and Post-Development Drainage Basin Map.* HEC-1 was used to estimate the 10-, 25-, and 100-year runoff and the size of the future detention facilities which will be designed in detail prior to approval of construction documents.

KR
10-29-13

PROPOSED DRAINAGE SYSTEM:

In the post-developed condition, the runoff from all the Moody Creek subbasins except B5424, B5426, B5432, and B5430 will be detained by five detention facilities. See the Stormwater Detention Area Exhibit in Appendix A for the detention facility locations. Facility #1 will be constructed in B5418. The metered runoff from the facility will be conveyed through a proposed box culvert to the existing drainage swale running southerly towards Road 'A'. Facility #2 will be constructed in Basin 5420 and will detain the metered runoff from facility S5418 and the runoff from Basins 5419 and 5420. The metered runoff from the facility will be conveyed through a proposed box culvert under Road 'A' to an existing drainage swale running through Basin 5415. Facility #4 will be constructed in Basin 5415 and will detain the metered runoff from facility S5420 and the runoff from Basins B5407, B5408, B5409, B5410, B5411, B5412, B5413, and B5415. The metered runoff from the facility will be conveyed to the existing drainage swale in B5424 via a proposed box culvert. Facility #4 will be constructed in Basin B5404B and will detain runoff from that basin as well as runoff from Basin B5404A. The metered runoff from the facility will be conveyed by a proposed box culvert to B5423. Facility #5 will be located within B5423 and will detain all upstream runoff along with the runoff from B5423. The metered runoff will be conveyed by a proposed box culvert to the existing drainage swale in B5424. The metered runoff will be conveyed by an existing drainage swale through B5430 towards Interstate 5 where it will combine with the undetained runoff from the remainder of the project.

Flows from the detention facilities will be metered out such that post-developed flow rates for the entire project will be less than pre-development flows for the 10-, 25-, and 100-year design storm events, providing maximum benefit downstream especially at the existing Interstate 5 culvert. Table 1 shows the preliminary pre- and post-developed outflow for the project.

Table 1: Preliminary Flows

HEC-1 ID	10-year (cfs)		25-year (cfs)		100-year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
C5430 (south bndy of proj)	2,065	1,908	2,553	2,311	3,440	2,902
C5434 (I-5 culvert)	2,103	1,942	2,598	2,352	3,498	2,953
C5495 (west fork of Stillwater)	6,330	6,223	7,789	7,591	10,465	10,028

In the post-developed condition, Basin A decreases in size from 28.3 acres to 4.5 acres significantly decreasing the runoff tributary to Salt Creek. Therefore, it has been determined that detention is not required. Table 2 shows the preliminary pre- and post-developed outflow at the western boundary.

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that detention is not required. Table 2 shows the preliminary pre- and post-developed outflow at the western boundary.

Table 2: Preliminary Flows

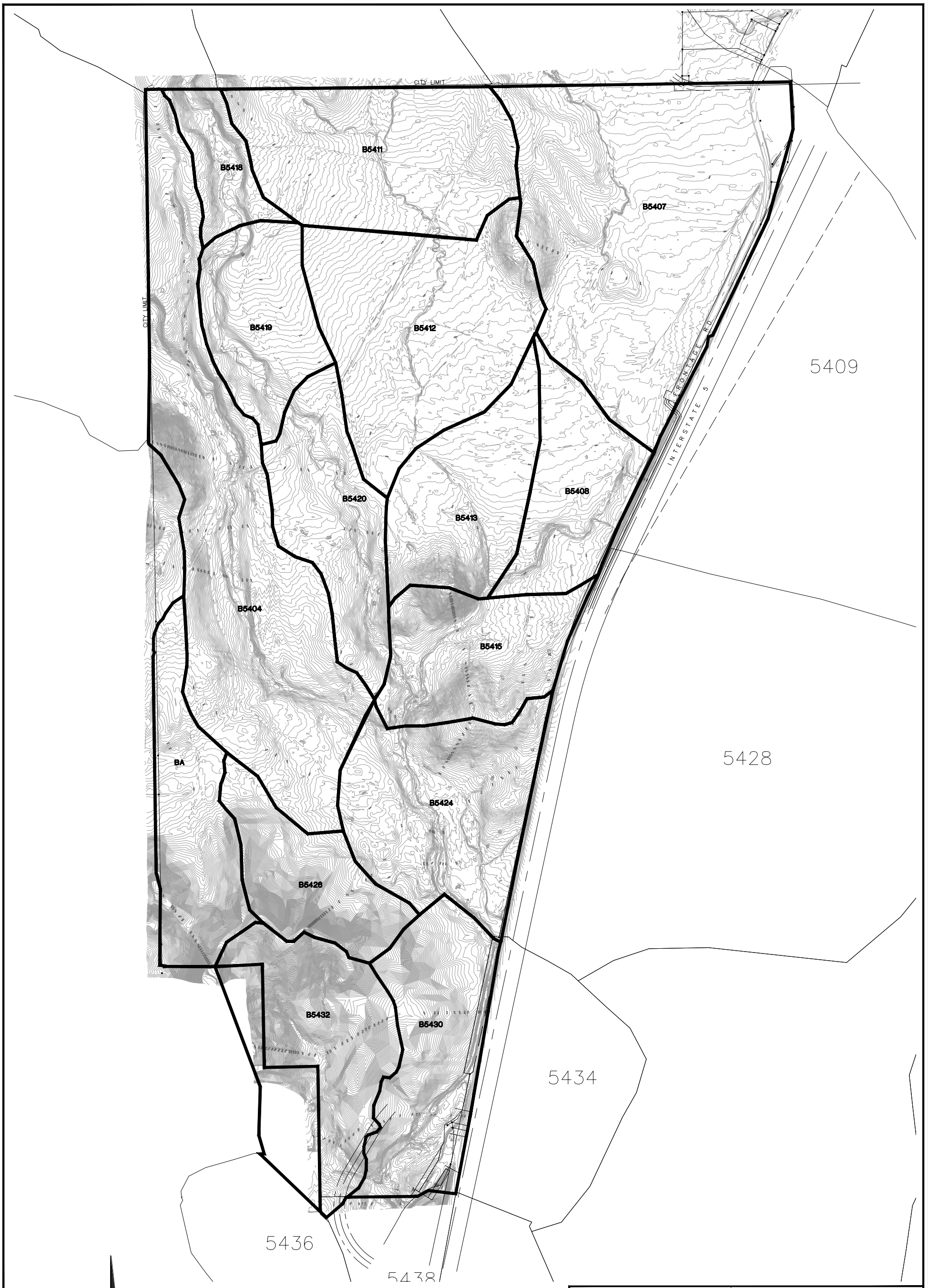
HEC-1 ID	10-year (cfs)		25-year (cfs)		100-year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
BA	43	10	57	12	85	17

CONCLUSION:

The proposed storm drainage system can and will be designed in accordance with the City of Shasta Lake requirements. With implementation of this system, no significant adverse impacts related to stormwater flow rate are expected from construction of the project.

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APPENDIX A

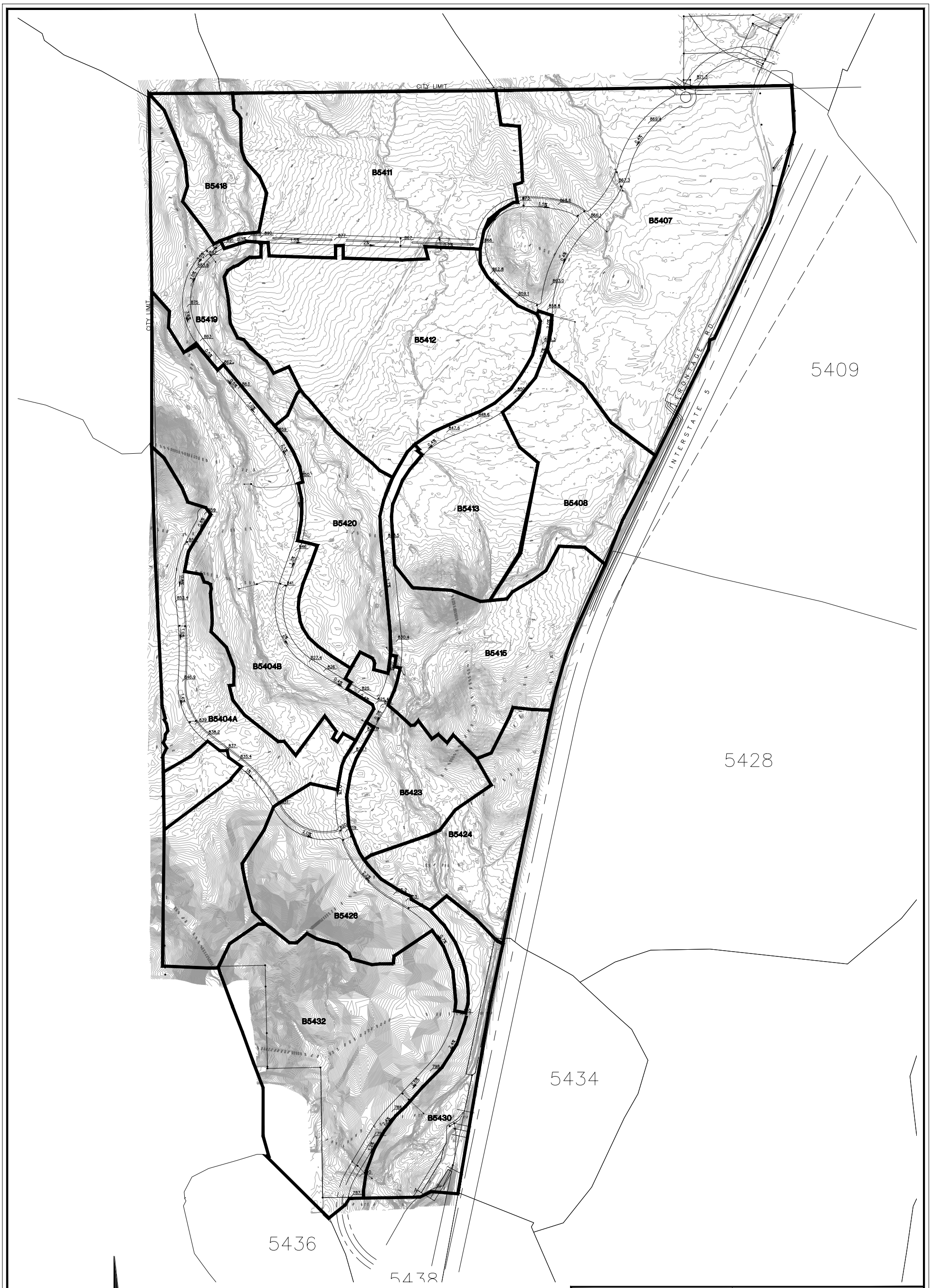


CITY OF REDDING

MT. GATE
PRE-DEVELOPMENT
DRAINAGE BASIN MAP

DATE: OCTOBER 2013	SHEET 1 OF 1
VERTICAL: 1"=NA	
HORIZONTAL: 1"=300'	

p:\proj\p\04122\dwg\04122 tm-drainage08jan14.dwg 2.002

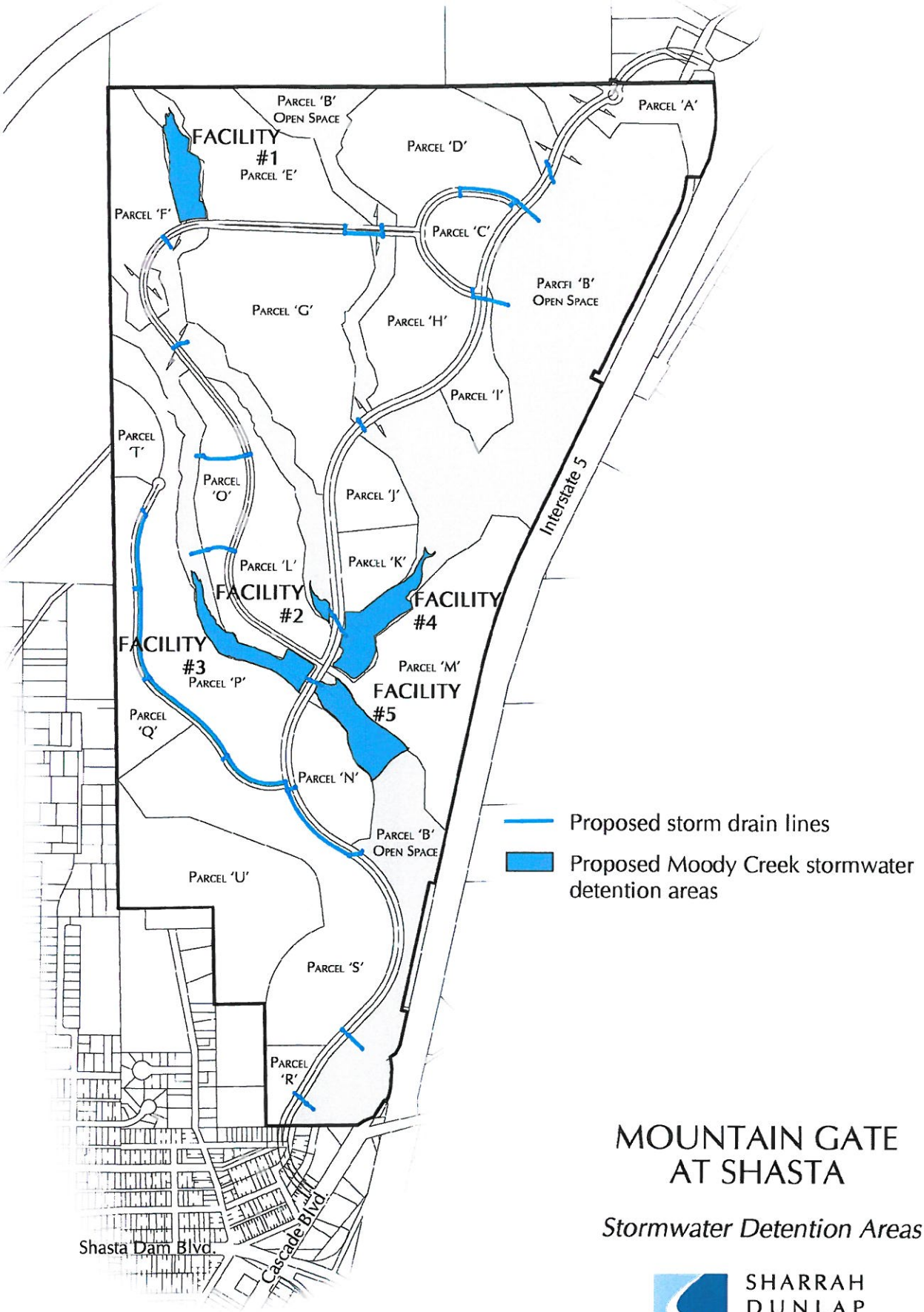


CITY OF REDDING

MT. GATE
POST–DEVELOPMENT
DRAINAGE BASIN MAP

DATE: OCTOBER 2013	SHEET 1 OF 1
VERTICAL: 1"=NA	
HORIZONTAL: 1"=300'	

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MOUNTAIN GATE AT SHASTA

Stormwater Detention Areas

SHARRAH DUNLAP SAWYER
INCORPORATED

Appendix 4.8-1

GEOTECHNICAL REPORT – CGI

CGI TECHNICAL
SERVICES INC.

December 6, 2011
CGi: 11-2012.01

Mr. Ronald Alvarado
Mountain Gate Meadows, LLC
c/o SBM Site Services
5241 Arnold Avenue
McClellan, CA 95652

Subject: Preliminary Geotechnical Report
Mountain Gate at Shasta Lake
Shasta Lake, California

Dear Mr. Alvarado:

CGI Technical Services, Inc. (CGI), is pleased to present this report providing preliminary geotechnical recommendations for the proposed Mountain Gate Subdivision within the City of Shasta Lake, California. The general site location is shown on Plate 1 – Site Location Map. The following report presents our understanding of the project, our study purpose, and the preliminary findings, conclusions, and recommendations from this study.

PROJECT UNDERSTANDING

Based on information provided by Sharrah Dunlap Sawyer, Inc. (SDS, 2011a), the project engineer, we understand that the project consists of the subdivision of a 590-acre property into 17 distinct parcels ranging is size from about 4.5 to 43.5 acres. That property is located at the southwestern corner of Old Oregon Trail and Wonderland Boulevard in the City of Shasta Lake, California. The parcels are proposed to be bordered by open spaces (forested hillsides, stream corridors and wetlands) of varying size. The proposed new parcels will be serviced by 4 new access roads that will tie into Shasta Dam Boulevard and Mountain Gate Road. Future developments are unkown at this time.

STUDY PURPOSE

The purpose of this study is to provide preliminary geotechnical information that can be used to design cut and fill slope inclinations, to identify geologic hazards that might adversely impact portions of the project site, and to provide general geotechnical design information. That information will assist in the layout and costing of future projects in their preliminary stages, and preparation of the project Tentative Map. Once the project scope has been finalized, additional geotechnical studies should be performed to verify or update the preliminary recommendations made during this study.

1612 Wedding Way
Redding, CA 96003
Ph: 530.244.6277
Fax: 530.244.6276

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DATA SOURCES

CGi referenced a number of local and regional data sources in preparing this letter. The references used during this study are cited in the References Section. The following are the primary references that we used to develop an understanding of the geologic and geotechnical conditions at the site:

- Dupras (1997), Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite Within Shasta County, California.
- Fraticelli, L.A., Albers, J.P., Irwin, W.P., and Blake, M.C., Jr. (1987), Geologic Map of the Redding 1x2 Degree Quadrangle, Shasta, Tehama, Humboldt, and Trinity Counties, California.
- Klaseen, T.A., and Ellison, D.K. (1974), Soil Survey of the Shasta County Area, California.

PREVIOUS WORK PERFORMED

Our review and research of the site revealed no existing geotechnical work performed for the site with the exception of the Environmental Impact Report prepared for a previously proposed subdivision (EIR, 1983).

FIELD INVESTIGATION

CGI conducted a limited geotechnical field investigation to evaluate subsurface soil conditions and to provide preliminary subsurface data for evaluation of the feasibility of future development. Our field geotechnical investigation was limited to reconnaissance-level geologic mapping of the project site and subsurface exploration through excavation of nine backhoe test pits. The test pits, designated TP-1 through TP-9, were excavated on December 2, 2011. Test pit locations are shown on Plate 2. Detailed descriptions of soils encountered are presented on the Soils Survey Information and Subsurface Conditions Section of this report. The soils encountered within the test pits were logged in general accordance with the Unified Soil Classification System (USCS). Surficial and subsurface soil samples were collected and transported to our laboratory for testing.

FINDINGS

Topography and Drainage

The development area is underlain by relatively flat to relatively steeply inclined slopes with inclinations ranging from about 3 to at least 30 degrees. The western part of the property is dominated by gently rolling hills. Moody and Rancheria Creeks dissect the property. At the northern part of the site, drainage occurs as sheet flow to the south and into Moody and Rancheria Creeks. At the southern part of the site, drainage occurs as sheet flow into a system of swales which discharge into Moody Creek and surrounding road storm drains.

In general, the property is covered with seasonal grasses, shrubs, trees, and seasonal vegetation. Locally, unpaved roads traverse portions of the project site.

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Elevations at the site, based on topographic information obtained from the 7.5-minute Project City U.S. Geological Survey quadrangle (Shasta Dam) and Topographic Map (SDS, 2011b), range from about 755 to 950 feet above mean sea level.

Soils Survey Information and Subsurface Conditions

According to the soil survey map for the project region (Klaseen and Ellison, 1974), the property is underlain by various soil types. These soil types are shown on Plate 3 – Soil Survey Map and described in Table 1 attached to this report.

As noted on Plate 3 and data presented in Table 1 indicate most of the soil units are fine-grained soils (clayey or silty), with up to 80 percent passing the No. 200 sieve. The onsite soils also can contain a relatively large gravel fraction (up to 60%). These soils have a plasticity index ranging from non-plastic (NP) to 30, which are indicative of soils that have a very low to high expansion potential (Day, 1999). The soils are reported to have a very low to high shrink-swell potential.

In general, based on test pits excavated for this project, on-site, subsurface materials consist predominately of sandy to silty clay overlaying gravely to sandy clay or metavolcanic bedrock composed of the Devonian-age Copley Greenstone (Dupras, 1977). Where observed, the Copley Greenstone ranges in consistency from stiff clay to a slightly friable rock near the surface and grades to a strong to very strong rock at depth. The rock is highly fractured and has a structural fabric consisting of closely spaced joints that are laterally continuous. The logs in Appendix A present specific soil descriptions encountered within each test pit.

Artificial fill was observed at localized areas. This fill appears to be thin (less than 5 feet) and consists mainly of road prism to provide access to the property and surrounding areas.

Groundwater

Groundwater was only encountered within test pit TP-9 at approximately 7 feet below the ground surface. It is anticipated that groundwater elevations will fluctuate over time. The depth to groundwater can vary throughout the year and from year to year. Intense and long duration precipitation, modification of topography, and cultural land uses, such as irrigation, water well usage, on site waste disposal systems, and water diversions can contribute to fluctuations in groundwater levels. Localized saturated conditions or perched groundwater conditions near the ground surface should be anticipated during and following periods of heavy precipitation and snowmelt. If groundwater is encountered during construction, it is the Contractor's responsibility to install mitigation measures for adverse impacts caused by groundwater encountered in excavations.

Geologic Information

Geologic maps of the project site show the parcel underlain by the Copley Greenstone Formation and Quaternary Alluvium Deposits (Dupras, 1997), as shown on Plate 2 and Plate 4 – Geologic Map.

The Copley Greenstone is early Devonian-age and typically consists of highly to moderately weathered, slightly to highly fractured greenstone (Dupras, 1977). The Quaternary-age colluvial soils observed at the site consisted of soil materials with minor aggregates, all of which were derived from erosion of the Copley Greenstone. Alluvial soils observed on site were similar to colluvial soils except that the alluvium contained a higher percentage of gravels, cobbles, and boulders.

Quaternary Alluvium Deposits (alluvium and colluvium) are typically easily excavatable using conventional heavy equipment, unless those materials are sufficiently wet and soft as to preclude access of that equipment. The alluvium and colluvium can be expected to contain moderate to abundant gravels, cobbles and boulders, some of which will not be acceptable for use within engineered fill material unless the aggregate particle size is mechanically reduced to less than 4 inches. Furthermore, depending on the time of year, colluvium and alluvium can yield groundwater as seeps or flows. Colluvial and alluvial soils are often compressible due to the presence of numerous fine to coarse pores and locally can contain abundant organics in the form of roots and decomposing vegetation.

The Copley Greenstone, when fresh, is hard, well indurated, fractured, and locally may not be excavatable using conventional heavy grading equipment. The Copley Greenstone exposed within cut slopes in the vicinity of the property has been excavated using conventional heavy equipment without apparent the use of blasting. The Copley Greenstone can weather to depths of greater than 15 feet and weathered materials can be easier to excavate than fresh materials. The presence of moderate to abundant fractures within the greenstone facilitates ripping and excavation. When ripped, this rock unit can generate oversized rock materials that may not be acceptable for use within engineered fill material unless the aggregate particle size is mechanically reduced to less than 4 inches

GEOLOGIC HAZARDS

Faulting

The State of California designates faults as active, potentially active, and inactive depending on the recency of movement that can be substantiated for a fault. Fault activity is rated as follows:

Fault Activity Ratings

Fault Activity Rating	Geologic Period of Last Rupture	Time Interval (Years)
Active	Holocene	Within last 10,000 Years
Potentially Active	Quaternary	>10,000 to 1.6 Million Years
Inactive	Pre-Quaternary	Greater than 1.6 Million Years

The California Geological Survey (CGS) evaluates the activity rating of a fault in fault evaluation reports (FER). FERs compile available geologic and seismologic data and evaluate if a fault should be zoned as active, potentially active, or inactive. If an FER evaluates a fault as active, then it is typically incorporated into a Special Studies Zone in accordance with the Alquist-Priolo Earthquake

Hazards Act (AP). AP Special Studies Zones require site-specific evaluation of fault location and require a structure setback if the fault is found traversing a project site.

No faults are known to project through the project site (Jennings, 1994; Hart & Bryant, 1997; Dupras, 1997). However, a number of regional and local faults traverse the project region. The most significant of these faults is the potentially active Battle Creek fault, located about 23 miles south of the site (Jennings, 1994). The closest fault mapped to the site is the inactive Bear Creek fault, located about 15 miles to the southwest (Jennings, 1994). The closest active fault, as zoned by the State, is the Hat Creek Fault, located about 44 miles northeast of the site.

In addition to the continental faulting noted above, the project area rests above the Cascadia subduction zone. West of the site, off the coast of California, the oceanic crust of the Gorda plate is being subducted beneath the continental crust of the Pacific Plate, in an area known as the Gorda Escarpment. The descending ramp caused by that subduction, called the Cascadia Subduction zone, extends beneath the project area at a depth of about 20 to 25 miles. That ramp is capable of storing elastic stress that periodically causes earthquakes that could affect the project area.

Historical Seismicity

Northern California is a seismically active area that has been subjected to numerous historical earthquakes. Between 1949 and 1985, a total of 927 earthquakes with local magnitudes (M_l) equal or greater than 3.0 have occurred (Uhrhammer, 1991). Approximately two-thirds of those earthquakes occurred in the seismically active region along the Cascadia Subduction zone (Gorda Escarpment). Of the 927 earthquakes mentioned, 48 strong earthquakes with $M_l > 5$ have occurred in northern California (Uhrhammer, 1991). There have been a total of six $M_l > 6$ in the region and all but one has occurred along the coast. The largest of the earthquakes recorded in that time interval was a M_l 6.9 that occurred within the Gorda Basin in November 1980.

A search of historical earthquakes occurring between 1800 and 1999, listed in the CGS catalog, was performed for a 100-mile radius around the project site (Blake, 2000). That search found that 231 earthquakes have occurred within that area. Of those earthquakes, only 46 with moment magnitudes (M_w) of 5 or greater, and 4 with M_w 6 and one with M_w 6.5 or greater have occurred in the search area. The largest earthquake to affect the area was a M_w 6.5 that occurred on December 21, 1954. The closest earthquake to affect the site was a M_w 4.6 that occurred approximately 3.3 miles from the site on July 21, 1998. The greatest estimated horizontal acceleration that the site has been subjected to is a conservatively estimated 0.16g. The most recent significant earthquake to affect the project area was a M_l 5.2 earthquake that occurred on November 26, 1998.

CBC Design Parameters

At a minimum, structures should be designed in accordance with the 2010 California Building Code (CBC) seismic design criteria. CBC-based design requires the definition of the following seismic parameters: Site Class Designation; Site Coefficients (F_a and F_v); Mapped spectral accelerations for short periods (S_s); and Mapped spectral accelerations for a 1-second period (S_1).

CBC SEISMIC DESIGN PARAMETERS

Parameter	CBC Designation
Site Class Designation	C/D[a]
Site Coefficient, F_a	1.1/1.2
Site Coefficient, F_v	1.525/1.850
Mapped Spectral Acceleration, S_s	0.750g
Mapped Spectral Acceleration, S_1	0.275g

[a] *C: Copley Greenstone (hard), D: Alluvium Deposits*

Liquefaction

Liquefaction is described as the sudden loss of soil shear strength due to a rapid increase of soil pore water pressures caused by cyclic loading from a seismic event. In simple terms, it means that a liquefied soil acts more like a fluid than a solid when shaken during an earthquake. In order for liquefaction to occur, the following are needed:

- Granular soils (sand, silty sand, sandy silt, and some gravels);
- A high groundwater table; and
- A low density in the granular soils underlying the site.

If those criteria are present, then there is a potential that the soils could liquefy during a seismic event.

The site appears to be underlain by predominately fine-grained soils or lithified rock, that are estimated to have a low potential for liquefaction, except possibly in the immediate proximity of drainages located on site. Those drainages could hold loose, saturated, alluvium soils that might liquefy when exposed to strong ground motion. If buffer zones are established around drainages on site (100-year flood plain) then liquefaction should not adversely affect the project development.

Landslides

The site is relatively flat to moderately inclined across the property with localized steep slopes. In general, the northern three-quarter of the property are relatively flat with the exception of localized mounds and the southern quarter of the property has generally increasingly steep terrain. No visible signs of landslides are evident from site observations. In its present condition, it is our opinion that there is a low potential for landsliding to occur at the site.

Expansive Soils

Expansion Index (EI) characteristics of onsite soils can be inferred from soil survey data discussed above and on Table 1. According to the soil survey for the project area, most of the onsite soils have a Plasticity Index ranging from non-plastic (NP) to 30 which are indicative of soils that have a very low to high expansion potential (Day, 1999). The soils have a very low to high shrink-swell

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[illegible] 11/10/2011

potential. Further testing of swell or expansion potential should be performed during future geotechnical studies for this project.

It is anticipated that moderately to slightly weathered rock materials of the Copley Greenstone will have a very low to low expansion potential. Those rock materials underlie most of the surficial soils covering the project site.

Soil Chemistry

A selected sample of the near-surface soil encountered at the site was subjected to chemical analysis for the purpose of assessment of corrosion and reactivity with concrete. The results of that test were not available at the time this report was prepared. If the results of the chemical analysis indicate corrosive soils, we will submit soil chemistry results in an addendum letter.

Because of the size of the project site, further testing of soil chemistry should be performed during future geotechnical studies for this project.

CUT AND FILL SLOPE INCLINATIONS

The following cut and fill slope recommendations are considered preliminary and should be used for planning purposes only. Further geotechnical studies should be performed to confirm and modify these preliminary recommendations, as necessary. In addition, when designing cut and fill slopes, specifications of the 2010 California Building Code should be followed, at a minimum, for design of benches, setbacks, etc.

Cut Slopes

Based on cut slopes in the vicinity of the property and on information obtained from the referenced sources, we have estimated maximum cut slope inclinations that can be graded for the project. These maximum inclinations are estimates based on observations and empirical data and will need to be confirmed during geotechnical studies for future project.

We estimate that cut slopes in geologic materials underlying the site can be excavated at inclinations of between 1.25:1 and 2:1, depending upon the materials exposed within the cut slope. Alluvium, colluvium, and residual soils resting on the Copley Greenstone should be excavated at inclinations no steeper than 2:1.

Rock materials of the Copley Greenstone can be excavated as steep as 1.25:1; however, local areas where highly fractured Copley Greenstone is exposed might require a 1.5:1 inclination to create a stable slope. Where those highly fractured areas might be located cannot be estimated at this time based on surficial exposures of the geologic materials.

Cut slope inclinations steeper than 2:1 exceed cut slope inclinations normally allowed by the City of Shasta Lake and Shasta County without site specific geotechnical studies. Because of this, we recommend that future geotechnical evaluations take into consideration slope stability and that 1.5:1 cut slope inclination be confirmed as having a static and pseudostatic factor of safety of at least 1.5

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and 1.1, respectively. Future geotechnical studies may indicate that slopes as steep as 1:1 in the Copley Greenstone rock materials meet minimum thresholds for slope stability.

Fill Slopes

Based on performance of fill slopes in the vicinity of the project and upon information obtained from the referenced sources, we have estimated maximum fill slopes inclinations that can be graded at the project site. These maximum inclinations are estimates based on observations and empirical data, and will need to be confirmed during geotechnical studies for future developments.

Most of the fill slopes observed were located along Highway 5, Shasta Way, Mussel Shoals Avenue and their tributary streets, and were inclined at slope inclinations of 2:1 or flatter. Those slopes have performed relatively well, with little erosion and minor raveling in isolated locations. We estimate that fill slopes constructed from on site materials can be constructed at 2:1 inclinations or flatter. If steeper fill slopes are desired, then future slope stability evaluations can be performed to estimate the maximum fill slope inclination acceptable for the project site. In addition, soil improvements such as geosynthetic reinforcement, can be designed during future studies to increase fill slopes inclinations.

Additional Geotechnical Considerations

This study has been based on empirical information available at the time of report preparation and on limited field observations of the subject property. We recommend that future geotechnical studies be performed to assess the presence of geologic hazards at the site and to provide geotechnical recommendations for design and construction of future project elements.

CGi appreciates the opportunity to assist you with this study. If you have any questions regarding this information please contact us at 530.223.1277 at your convenience.

Regards,

CGI TECHNICAL SERVICES, INC.

Azeddine Bahloul, P.E., G.E
Senior Geotechnical Engineer

James A. Bianchin, C.E.G.
Senior Engineering Geologist

Attachments: Plates 1 through 4 & Table 1

REFERENCES

Blake, T.F. (2000), Preliminary Fault-Data for EQFUALT and FRISKSP, dated December 1995, updated January 1998, 71 p.

Day, R.W. (1999), Geotechnical and Foundation Engineering, Design and Construction, McGraw-Hill, New York, p. 9.3.

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Fraticelli, L.A., Albers, J.P., Irwin, W.P., and Blake, M.C., Jr. (1987), Geologic Map of the Redding 1x2 Degree Quadrangle, Shasta, Tehama, Humboldt, and Trinity Counties, California, California Division of Mines and Geology Open-File Report 97-03, 18 p. with Plates.

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Sharrah Dunlap Sawyer (2011a), Mountain Gate at Shasta, Tentative Map, July 2011.

Sharrah Dunlap Sawyer (2011b), Mountain Gate at Shasta, Topographic Map, Undated.

Uhrhammer, R.A. (1991), Northern California Seismicity, in *Neotectonics of Northern California*, eds. Slemmons, D.B., Engdahl, E.R., Zoback, M.D., and Blackwell, D.D., Geological Society of America, Decade of North American Geology, Chapter 7, pp. 99 – 106.

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Job 1163804

TABLE 1 - SOIL SURVEY DATA (Klaseen and Ellison, 1974)

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	(In)				*(%)*	*(%)*					*(%)*	
Ad—Anderson gravelly sandy loam												
Anderson	0-14	Gravelly sandy loam	GM, SM	A-2	0	0-5	55-80	50-75	35-50	25-35	20-25	NP-5
	14-24	Gravelly sandy loam	GM, SM	A-1	0	0-5	55-80	50-75	35-50	25	20-25	NP-5
	24-60	Very gravelly sand	GM	A-1	0	5-15	40-55	30-50	20-35	10-15	0-0	NP
AnB—Auburn loam, 0 to 8 percent slopes												
Auburn	0-8	Loam	ML, CL-ML	A-4	0	0-10	95-100	75-95	70-90	50-80	20-30	NP-10
	8-24	Gravelly loam, Gravelly clay loam	SC-SM, GC, GC-GM, SC	A-6, A-4	0	0-10	55-80	50-75	45-70	35-50	25-40	5-15
	24-28	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
ArD—Auburn very stony loam, 8 to 30 percent slopes												
Auburn	0-8	Very stony loam	GC, GC-GM, SC, SC-SM	A-6, A-4	5-10	10-15	60-85	55-80	45-75	35-50	25-40	5-15
	8-20	Gravelly loam, Gravelly clay loam	GC, GC-GM, SC, SC-SM	A-6, A-4	0	5-10	55-80	50-75	45-70	35-50	25-40	5-15
	20-24	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

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TABLE 1 - SOIL SURVEY DATA (Klaseen and Ellison, 1974)

Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	(In)				*(%)*	*(%)*					*(%)*	
AsD2—Auburn clay loam, 8 to 30 percent slopes, eroded												
Auburn	0-5	Clay loam	CL	A-6	0	0-10	95-100	75-95	75-90	60-80	30-40	10-20
	5-27	Gravelly clay loam	CL, GC	A-6	0	5-10	55-80	50-75	45-70	40-55	30-40	10-20
	27-31	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
CdA—Churn loam, slightly wet, 0 to 3 percent slopes												
Churn	0-13	Loam	ML, CL-ML	A-4	0	0	80-95	75-90	65-80	50-65	25-35	5-10
	13-60	Loam, Clay loam	CL	A-6	0	0	80-95	75-90	70-85	55-75	30-40	10-20
CeA—Churn gravelly loam, 0 to 3 percent slopes												
Churn	0-13	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4	0	0	60-80	55-75	50-70	35-50	25-35	5-10
	13-60	Gravelly loam, Gravelly clay loam	GC, CL	A-6	0	0	60-80	55-75	50-70	40-60	30-40	10-20

CGI: Copyright 2011

TABLE 1 - SOIL SURVEY DATA (Klaseen and Ellison, 1974)

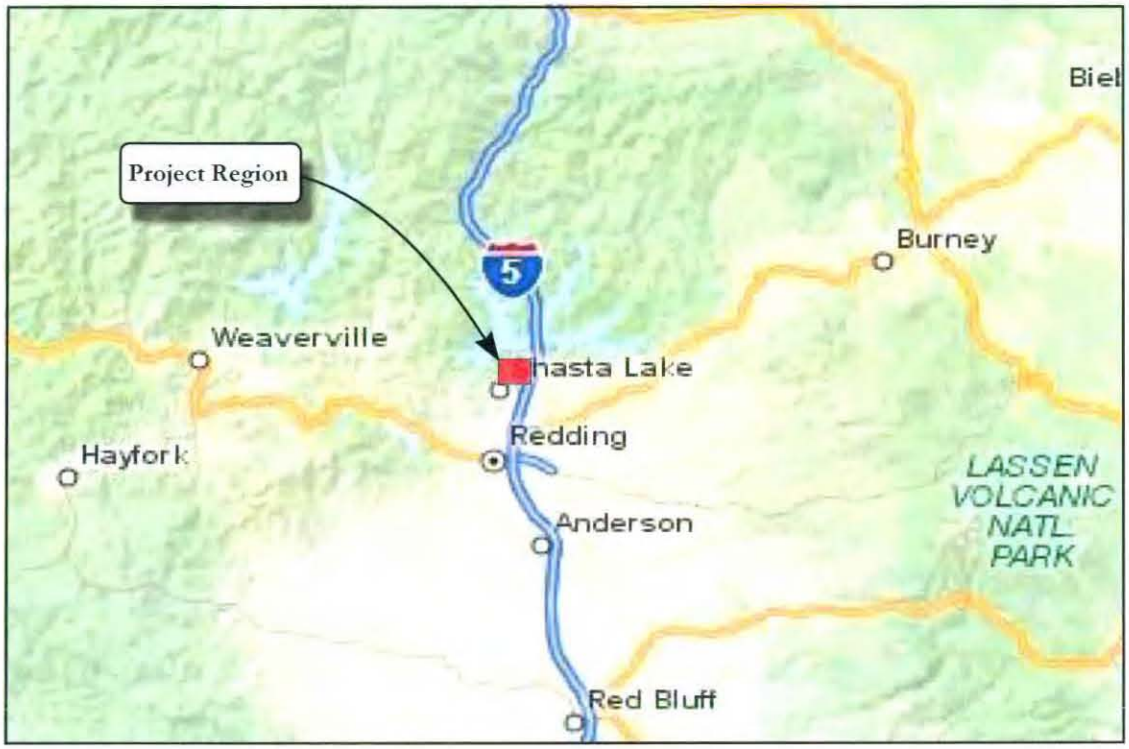
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	(In)				*(%)*	*(%)*					*(%)*	
CcB—Churn gravelly loam, 3 to 8 percent slopes												
Churn	0-13	Gravelly loam	SC-SM, SM, GC-GM, GM	A-4	0	0	60-80	55-75	50-70	35-50	25-35	5-10
	13-60	Gravelly loam, Gravelly clay loam	CL, GC	A-6	0	0	60-80	55-75	50-70	40-60	30-40	10-20
ChA—Churn gravelly loam, deep, 0 to 3 percent slopes												
Churn	0-13	Gravelly loam	GC-GM, GM, SC-SM, SM	A-4	0	0	60-80	55-75	50-70	35-50	25-35	5-10
	13-40	Gravelly loam, Gravelly clay loam	CL, GC	A-6	0	0	60-80	55-75	50-70	40-60	30-40	10-20
	40-60	Stratified gravelly loam to gravelly clay loam	CL, GC	A-6	0	0	60-80	55-75	50-70	40-60	20-40	10-20
PmC—Perkins gravelly loam, 8 to 15 percent slopes												
Perkins	0-10	Gravelly loam	GM, SM	A-4	0	0-10	55-80	50-75	50-65	35-50	25-35	NP-10
	10-60	Gravelly clay loam	CL, GC	A-6	0	0-10	55-80	50-75	50-70	35-55	30-40	10-20

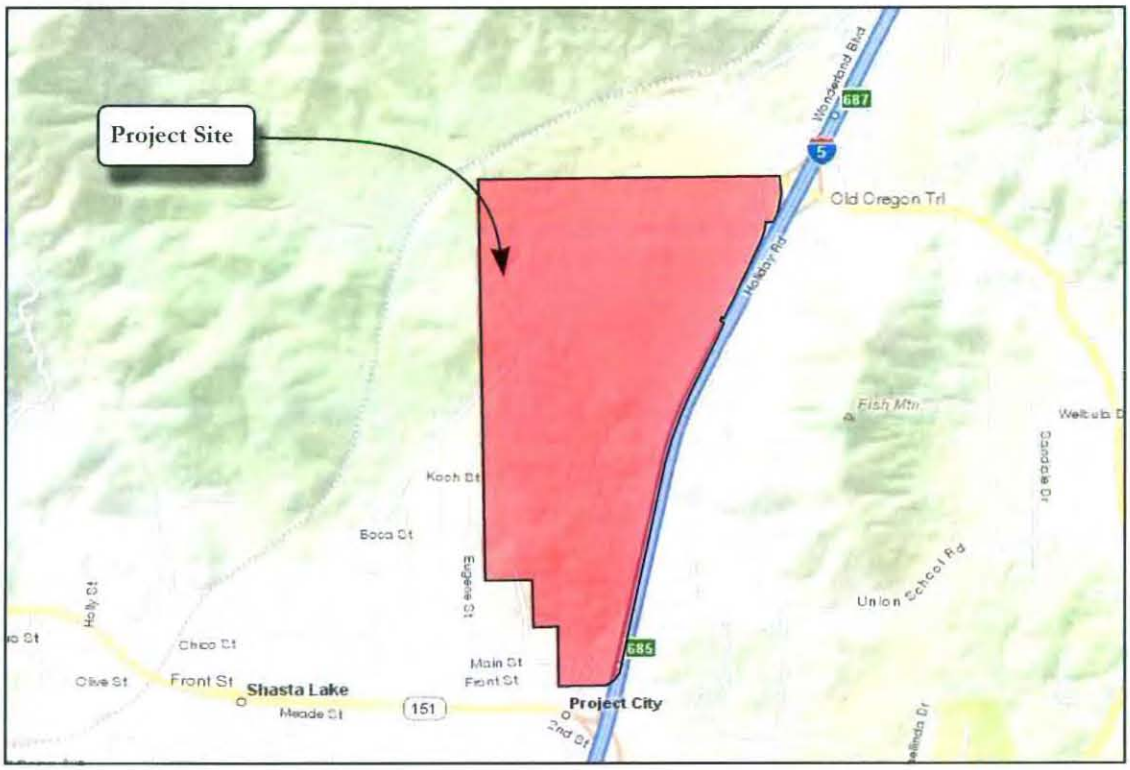
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TABLE 1 - SOIL SURVEY DATA (Klaseen and Ellison, 1974)

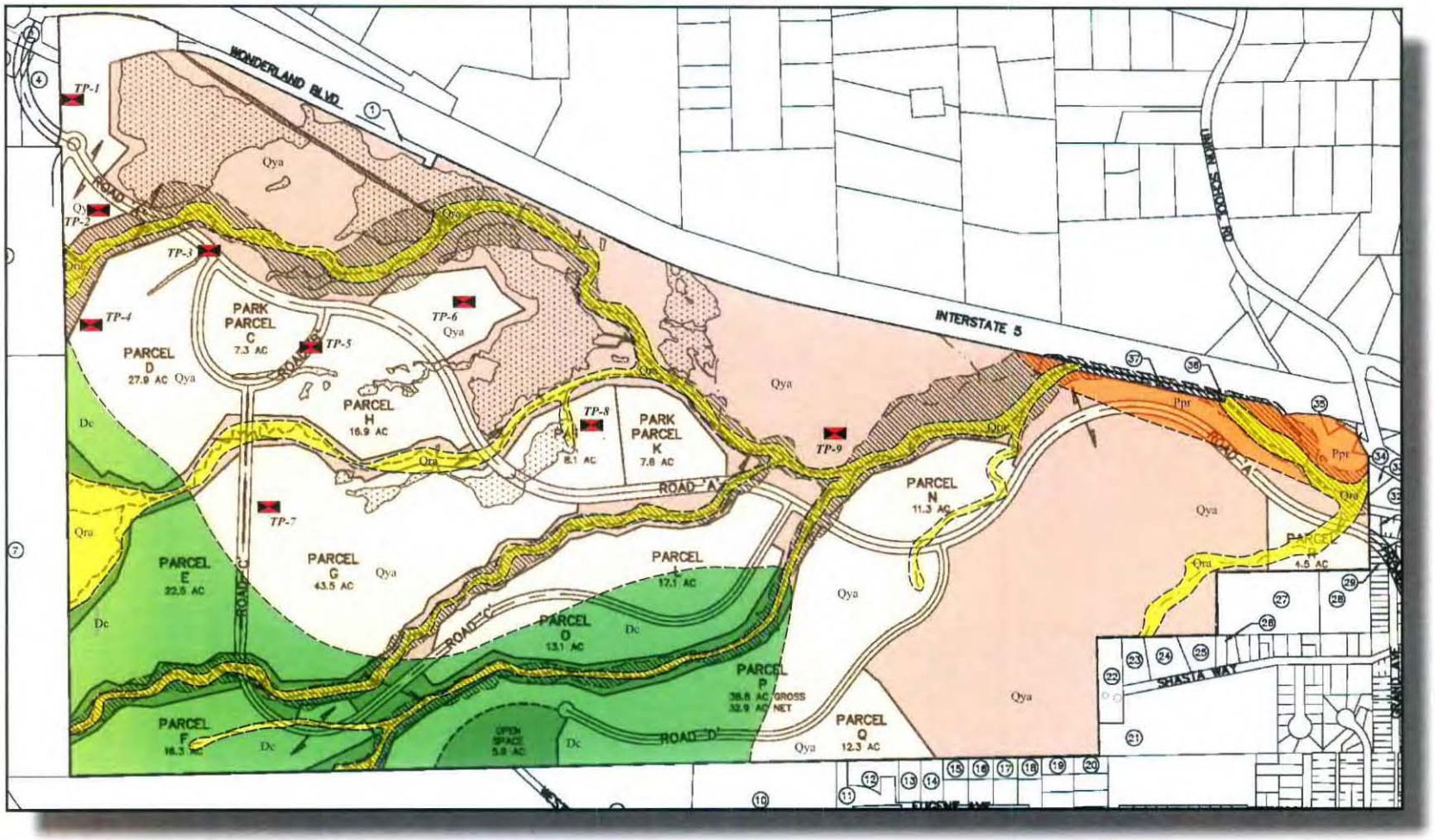
Map unit symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	(In)				*(%)*	*(%)*					*(%)*	
RbA—Red Bluff loam, 0 to 3 percent slopes												
Red Bluff	0-6	Loam	CL-ML, CL	A-6, A-4	0	0	80-100	75-95	65-80	50-60	25-35	5-15
	6-28	Clay loam	CL	A-6	0	0	80-100	75-95	70-85	60-75	30-40	10-20
	28-57	Clay loam, Clay	CL	A-7, A-6	0	0-5	80-100	75-95	70-85	60-75	35-50	15-30
	57-67	Gravelly clay loam, Clay loam	GC, CL	A-6, A-7	0	0-5	55-95	50-90	45-85	35-75	30-45	10-20
RbB—Red Bluff loam, 3 to 8 percent slopes												
Red Bluff	0-6	Loam	CL, CL-ML	A-6, A-4	0	0	80-100	75-95	65-80	50-60	25-35	5-15
	6-28	Clay loam	CL	A-6	0	0	80-100	75-95	70-85	60-75	30-40	10-20
	28-57	Clay loam, Clay	CL	A-6, A-7	0	0-5	80-100	75-95	70-85	60-75	35-50	15-30
	57-67	Gravelly clay loam, Clay loam	CL, GC	A-6, A-7	0	0-5	55-95	50-90	45-85	35-75	30-45	10-20

CGR Copyright 2011





CGI Technical Services Inc.	SITE LOCATION MAP MOUNTAIN GATE AT SHASTA SHASTA COUNTY, CALIFORNIA	Plate 1
Project No.: 11-2012.01		



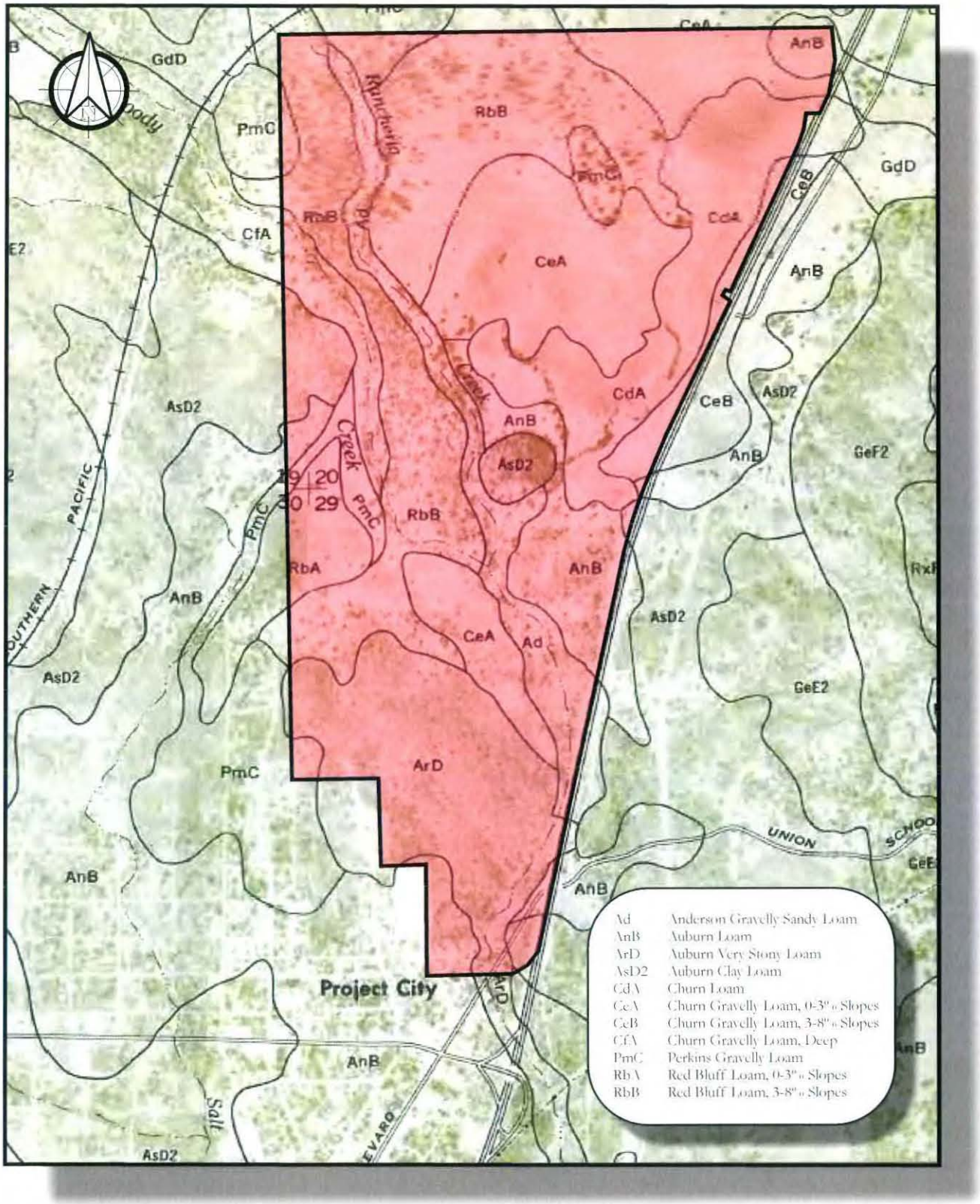
Base development map provided by Sharrah Dunlap Sawyer. Base geologic map obtained from Dupras (1997).

CGI Technical Services Inc.

Project No.: 11-2012.01

GEOTECHNICAL MAP
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate
2



Soils map from Klaseen & Ellison (1974)

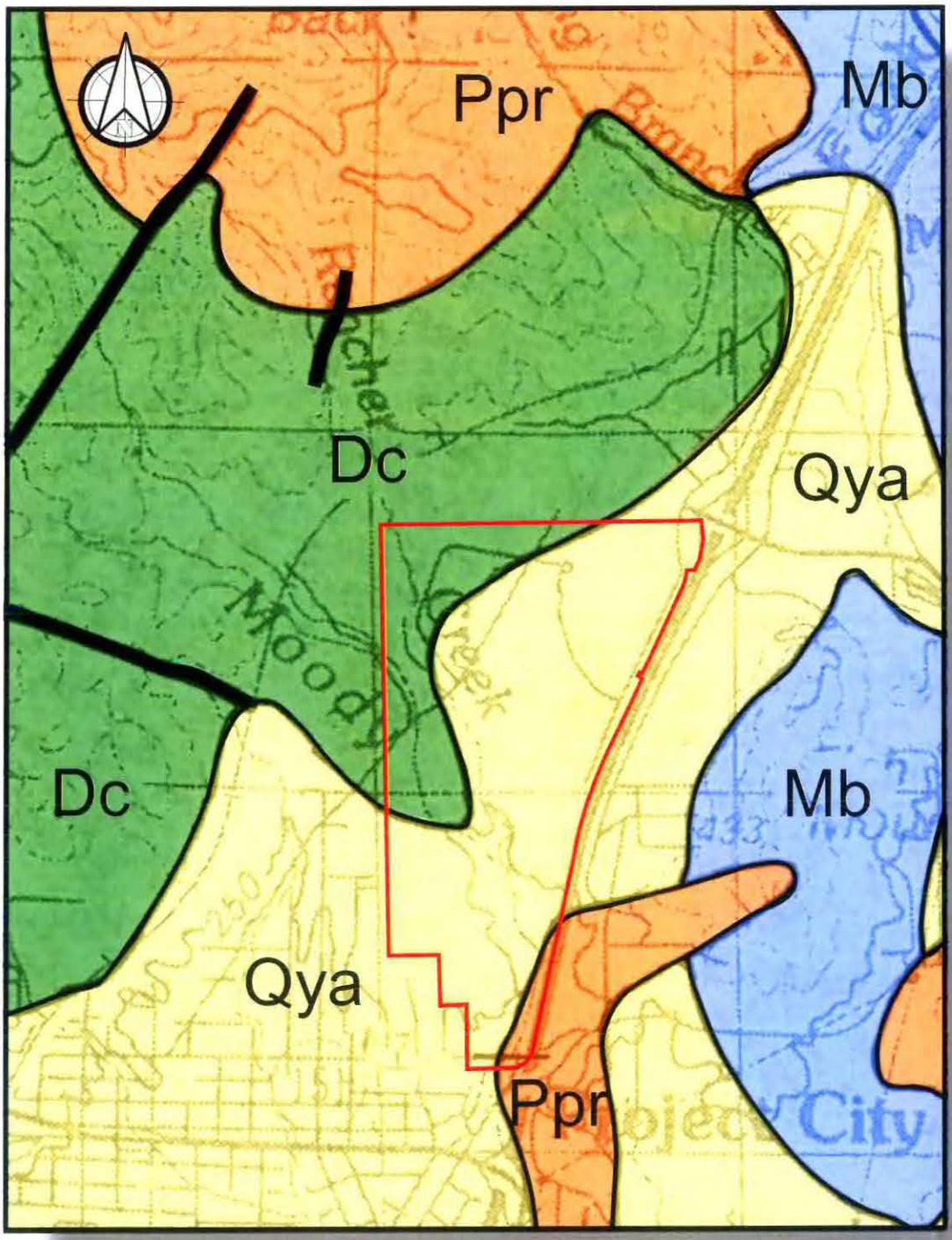
CGI Technical Services Inc.

Project No.: 11-2012.01

SOIL SURVEY MAP
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate

3



Qya Alluvium

Mb Bragdon Formation

Ppr Pit River Stock

Dc Copley Greenstone

Geologic Contact: dashed where approximate, dotted where covered, queried where uncertain

Fault: showing dip of fault and and trend of striae on fault surface (arrow); bar and ball on downthrown side; dashed where approximate, dotted where concealed; queried where uncertain

Basemap from Dupras (1997)

CGI Technical Services Inc.

Project No.: 11-2012.01

GEOLOGIC MAP
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate

4

Major Divisions			USCS Symbol	Description
COARSE-GRAINED SOILS More than 50% of sample or material is larger than the No. 200 Sieve (0.0029 inches)	GRAVELS More than 50% of the coarse fraction is retained on No 4 sieve (0.187 inches)	GRAVELS Clean Gravels, few fines	GW	Well graded gravels and sand mixtures with little to no fines
			GP	Poorly graded gravels & gravel/sand mixtures with little to no fines
		GRAVELS With appreciable fines	GM	Silty gravels and poorly graded gravel/sand/silt mixtures
			GC	Clayey gravels and poorly graded gravel/sand/clay mixtures
	SANDS More than 50% of the coarse fraction passes the No 4 sieve (0.187 inches)	SANDS Clean Sands, few fines	SW	Well graded sands and gravelly sands with little to no fines
			SP	Poorly graded sands and gravelly sands with little to no fines
		SANDS With appreciable fines	SM	Silty sands and poorly graded sand/gravel/silt mixtures
			SC	Clayey sands and poorly graded sand/gravel/clay mixtures
FINE-GRAINED SOILS More than 50% of sample or material is smaller than the No. 200 Sieve (0.0029 inches)	SILTS & CLAYS Liquid limit less than 50		ML	Inorganic silts with very fine sands, silty and/or clayey fine sands, clayey silts with slight plasticity
			CL	Inorganic clays with low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and clays with low plasticity
	SILTS & CLAYS Liquid limit greater than 50		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts
			CH	Inorganic clays with high plasticity, fat clays
			OH	Orgainic silts and clays with high plasticity
HIGHLY ORGANIC SOIL			PT	Peat, humus, swamp soil with high organic content

Samples

- Bulk or disturbed sample
- Relatively undisturbed sample

Symbols

- Groundwater
- Caving
- Contact Between Soil/Rock Layers

GENERAL NOTES

Dual symbols (such as ML/CL or SM/SC) are used to indicate borderline classifications.
In general, USCS designations shown on the logs were evaluated using visual methods. Actual designations (based on laboratory tests) may vary.
Logs represent general soil conditions observed on the date and locations indicated. No warranty is provided regarding soil continuity between locations.
Lines separating soil strata on logs are approximate. Actual transitions may be gradual and vary with depth.

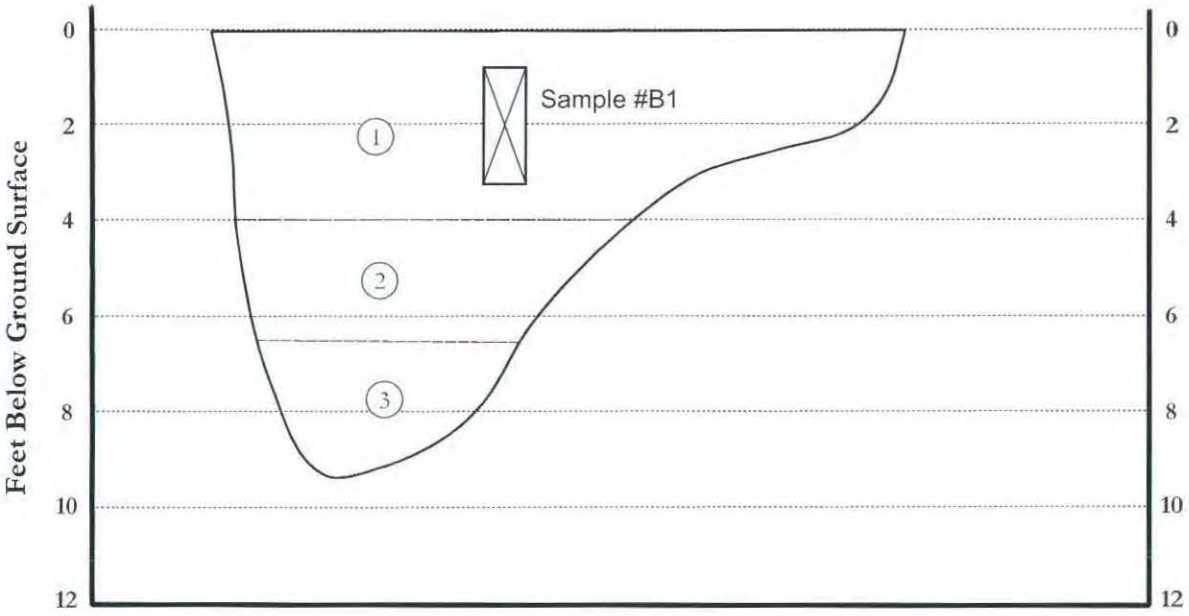
CGI Technical Services Inc.

Project No.: 11-2012.01

LEGEND TO TEST PIT LOGS
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.
A-1.0

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), dark brown, moist, soft to slightly stiff, low to medium plasticity, with roots in the upper 6 inches.
2	Gravelly CLAY (CL), orangish brown, moist, slightly stiff, with subrounded gravel.
3	Silty to Sandy CLAY (CL), yellowish orange, moist, slightly stiff to stiff, low plasticity, with gravel to cobble fragments (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

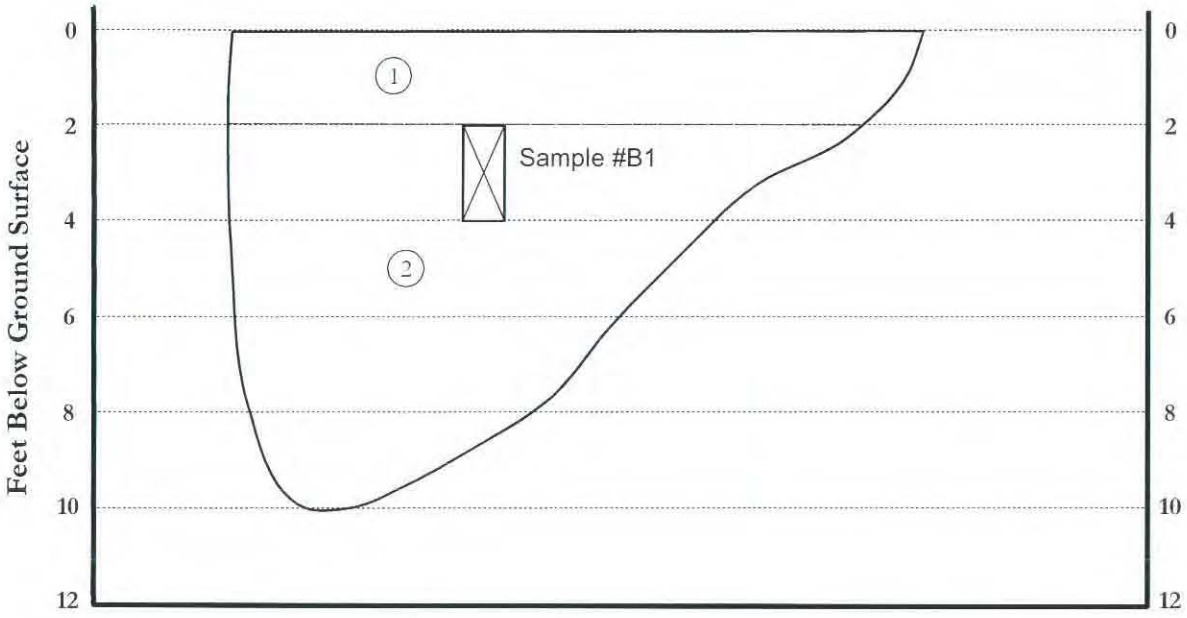
CGI Technical Services Inc.

Project No.: 11-2012.01

TEST PIT TP-1
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.
A-2.1

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), dark brown, moist, soft to slightly stiff, low to medium plasticity, with roots in the upper 6 inches.
2	Gravelly CLAY (CL), orangish brown, moist, slightly stiff, with subrounded gravel.

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

CGI Technical Services Inc.

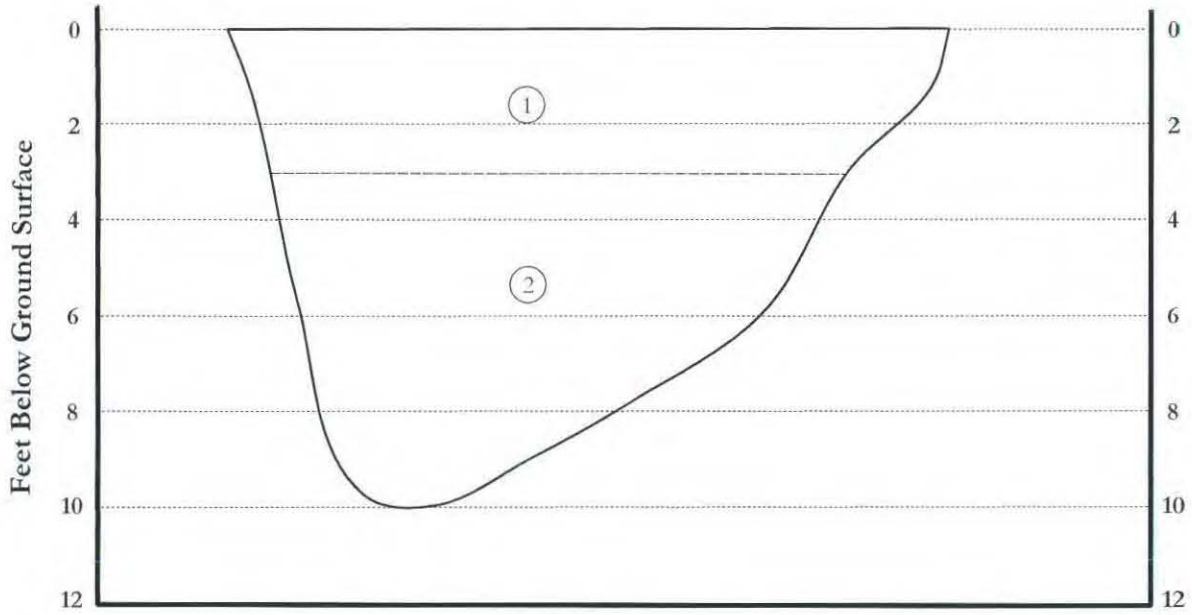
Project No.: 11-2012.01

TEST PIT TP-2
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.

A-2.2

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), dark brown, moist, soft to slightly stiff, low to medium plasticity, with roots in the upper 6 inches.
2	Silty to Sandy CLAY (CL), yellowish orange, moist, slightly stiff to stiff, low plasticity, with gravel to cobble fragments (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

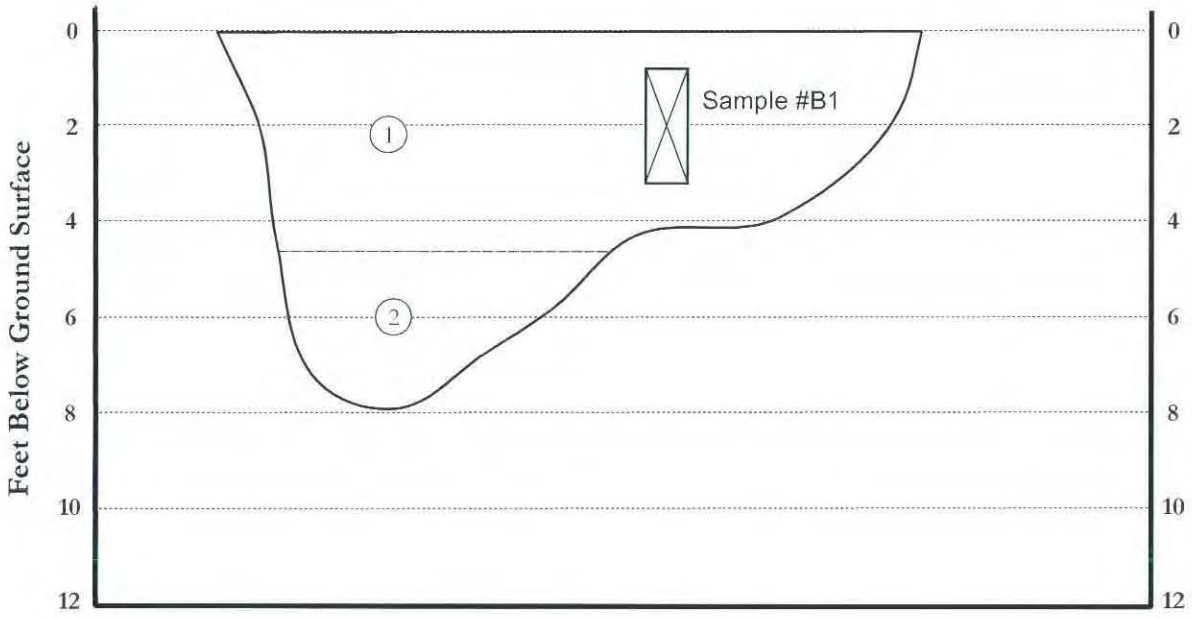
CGI Technical Services Inc.

Project No.: 11-2012.01

TEST PIT TP-3
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.
A-2.3

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), orangish brown, moist, soft to slightly stiff, low to medium plasticity.
2	Silty CLAY (CL), light yellowish brown, moist, slightly stiff to stiff, low to medium plasticity (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

CGI Technical Services Inc.

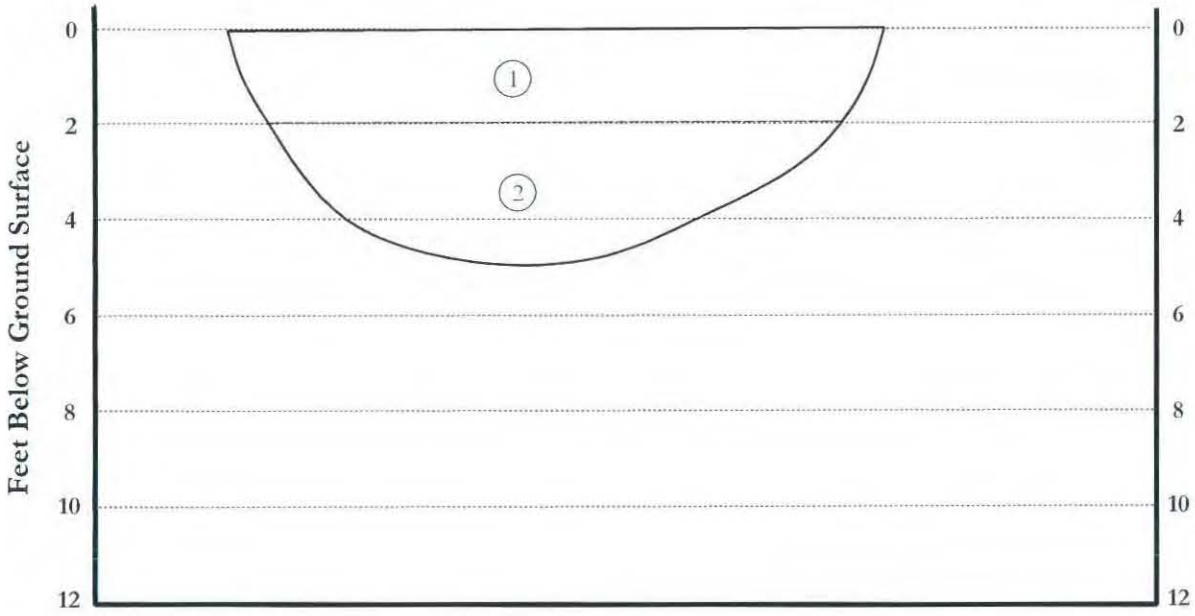
Project No.: 11-2012.01

TEST PIT TP-4
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.

A-2.4

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), dark brown, moist, soft to slightly stiff, low to medium plasticity, with roots in the upper 6 inches.
2	Silty to Sandy CLAY (CL), yellowish orange, moist, slightly stiff to stiff, low plasticity, with gravel to cobble fragments (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

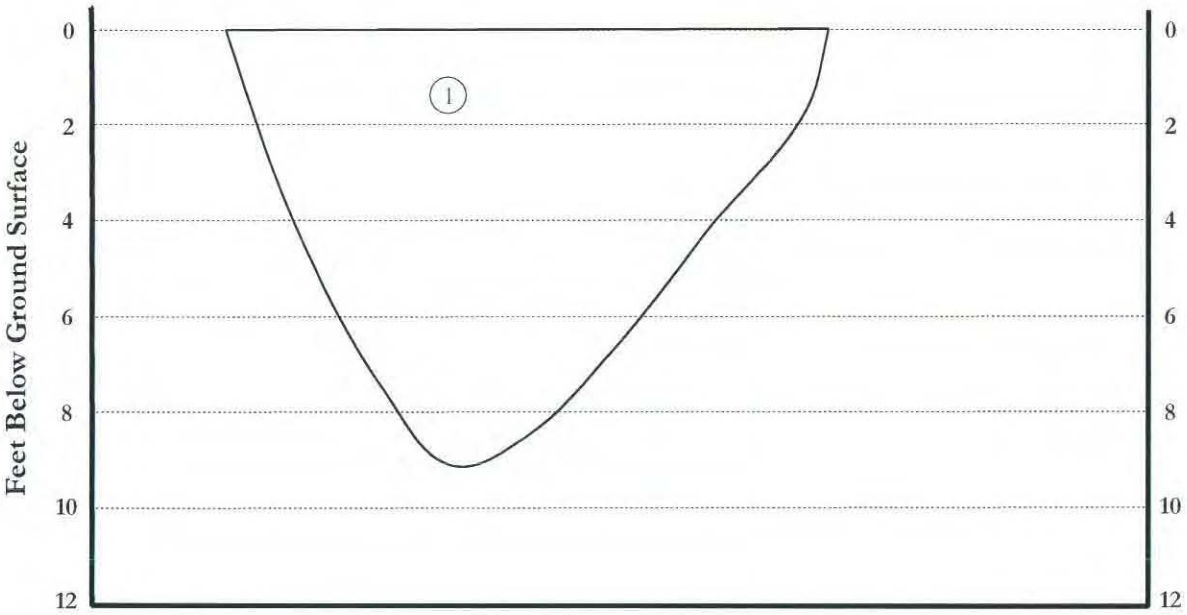
CGI Technical Services Inc.

Project No.: 11-2012.01

TEST PIT TP-5
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.
A-2.5

LOG OF TEST PIT



Soil Descriptions	
1	Gravelly CLAY (CL), orangish brown, moist, slightly stiff, with subrounded gravel. Increased gravel below 7 feet.

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

CGI Technical Services Inc.

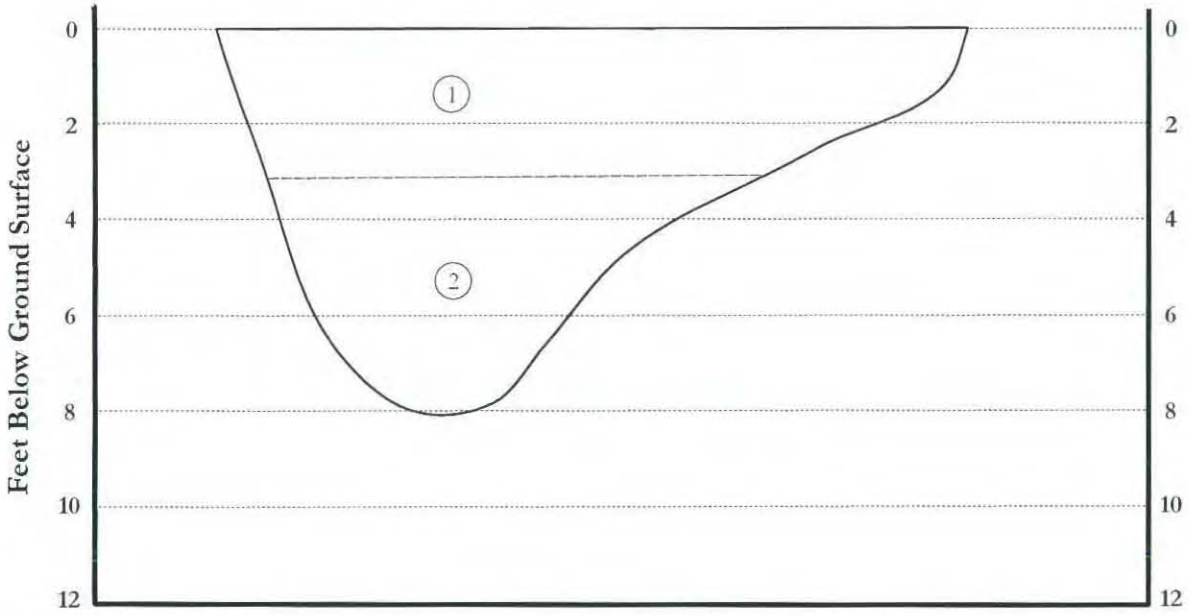
Project No.: 11-2012.01

TEST PIT TP-7
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.

A-2.7

LOG OF TEST PIT



Soil Descriptions	
1	Gravelly CLAY (CL), orangish brown, moist, slightly stiff, with subrounded gravel.
2	Silty CLAY (CL), light yellowish brown, moist, slighrly stiff to stiff, low to medium plasticity (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	Not Encountered

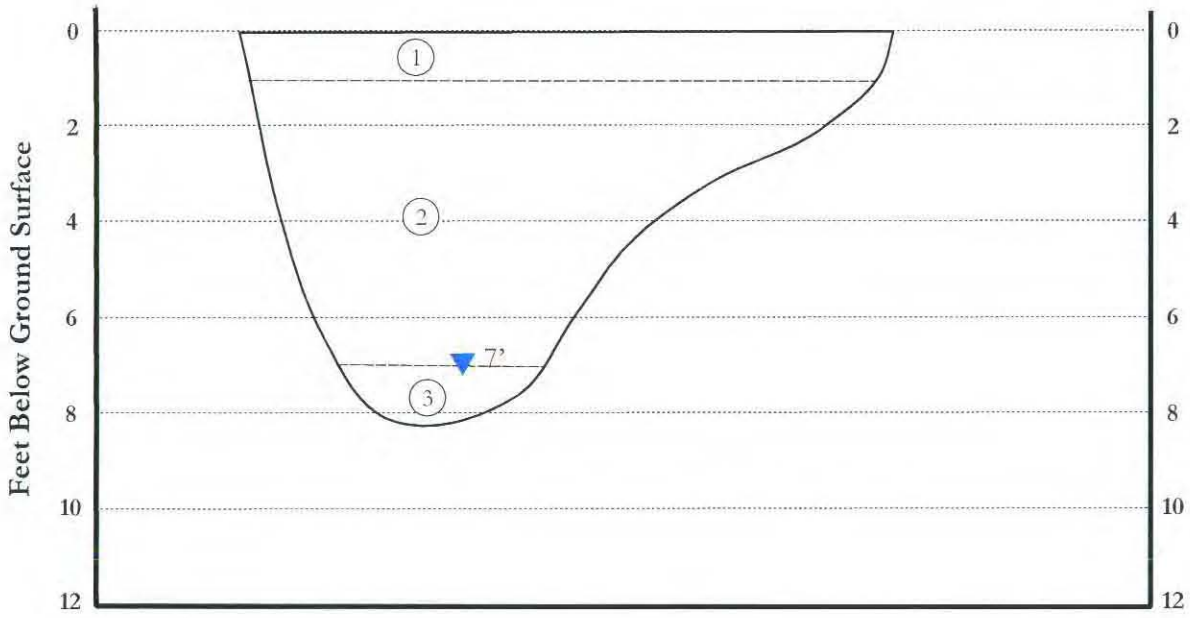
CGI Technical Services Inc.

Project No.: 11-2012.01

TEST PIT TP-8
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.
A-2.8

LOG OF TEST PIT



Soil Descriptions	
1	Sandy to Gravelly CLAY (CL), dark brown, moist, soft to slightly stiff, low to medium plasticity, with roots in the upper 6 inches.
2	Gravelly CLAY (CL), orangish brown, moist, slightly stiff, with subrounded gravel.
3	Silty to Sandy CLAY (CL), yellowish orange, moist, slightly stiff to stiff, low plasticity, with gravel to cobble fragments (weathered greenstone).

Date Logged:	December 2, 2011	Excavated With:	Caterpillar 303.5C
Logged by:	Azeddine Bahloul	Backfilled With:	Excavated Cuttings
Excavator:	Stamm Construction	Depth to Water (ft):	7 Feet

CGI Technical Services Inc.

Project No.: 11-2012.01

TEST PIT TP-9
MOUNTAIN GATE AT SHASTA
SHASTA COUNTY, CALIFORNIA

Plate No.

A-2.9

Appendix 4.8-2

GEOTECHNICAL REPORT – ENGEO

Project No.
6727.5.001.01

August 16, 2005

Mr. Milo Terzich
Premier Homes Properties, Inc.
8205 Sierra College Boulevard, Suite 100
Roseville, CA 95661

Subject: Mountain Gate 600 Acre Property
Mountain Gate Road
Shasta County, California

GEOLOGIC AND GEOTECHNICAL RECONNAISSANCE

Dear Mr. Terzich:

ENGEO Incorporated prepared this preliminary geologic and geotechnical assessment for the Mountain Gate 600 Acre Property as outlined in our agreement signed March 23, 2005. We performed a geotechnical site reconnaissance and document review to provide the enclosed geologic and geotechnical information for use in the Environmental Impact Report that is being prepared for the project site by Pacific Municipal Consultants.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Reviewed by:

Dustin G. Smyth, PG
Project Geologist

Mark M. Gilbert, GE
Principal

DRAFT

GEOLOGIC AND GEOTECHNICAL RECONNAISSANCE

MOUNTAIN GATE 600 ACRE PARCEL

MOUNTAIN GATE, CALIFORNIA

SUBMITTED

TO

PREMIER HOMES PROPERTIES, INC.
8205 SIERRA COLLEGE BOULEVARD, SUITE 100
ROSEVILLE, CA 95661

ROSEVILLE, CALIFORNIA

PREPARED

BY

ENGEO INCORPORATED

PROJECT NO. 6727.5.001.01

AUGUST 16, 2005

DRAFT

Dustin G. Smyth, PG

Mark M. Gilbert, P.E., G.E.

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DRAFT

FIGURES

Figure 1: Site Vicinity Map
Figure 2: Site Topographic Map
Figure 3: Site Development Plan
Figure 4: Regional Geologic Map
Figure 5: Regional Fault Map
Figure 6: Site Photographs

DRAFT

1. INTRODUCTION

ENGEO Incorporated prepared this geologic and geotechnical report for use in preparation of your Environmental Impact Report for the Mountain Gate 600 Acre Property in Mountain Gate, California.

For our use we received a Conceptual Site Plan prepared by Murray Duncan Architects, dated November 18, 2004.

1.1 SCOPE OF SERVICES

ENGEO prepared this report as outlined in our agreement signed March 23, 2005. You authorized ENGEO to conduct the proposed scope of services, which included the following:

- Service plan development
- Site reconnaissance
- Review of readily available aerial photograph
- Review of readily available maps and reports
- Review the site condition for geologic hazards
- Data Analysis and Conclusions
- Report Preparation.

1.2 PROJECT LOCATION

Figure 1 displays a Site Vicinity Map. The site is located southwest of the intersection of Interstate 5 (I 5) and Mountain Gate Road near Mountain Gate, California. Access to the site is gained by using unimproved dirt roads.

Figure 3 shows site boundaries and proposed building and pavement areas. The site is bounded on the east by I 5, the southwest and south by the Town of Shasta Lake, and the northwest and north by undeveloped land and rural ranchettes.

1.3 PROPOSED DEVELOPMENT

Based on our discussion with of Premier Homes Properties, Inc. and Pacific Municipal Consultants (PMC) and review of the information provided, we understand that the Environmental Impact Report is being prepared for a project that will consist of construction of:

- Single-family detached residential lots
- Single-family attached residential lots

- Multiple-family residential lots
- Single-family detached cluster home lots
- Live/work lots
- Commercial lots
- Highway commercial lot
- Health spa
- Parks
- Wetlands
- Waterways
- Paved Streets
- Underground utilities
- Sidewalks
- Landscaping

DRAFT

2. SITE SETTING

We reviewed readily available aerial photographs, historical topographic maps and published geologic maps. We visited the site in April 20, 2005 to perform our site reconnaissance. The results of our document review and site reconnaissance are summarized below.

2.1 SITE DESCRIPTION

The approximately 600-acre project site is located south of Mountain Gate, Shasta County, California. Based on review of the United States Geological Survey (USGS) 15-minute Project City Topographic Quadrangle (1969) the topography is variable across the property, with site grades ranging from approximately Elevation 800 to 950 feet (Datum 0 feet = North American Datum 1983). Most of the property is a mountain meadow surrounded by steeply dipping hilly terrain to the north, west, and across I-5 to the east. Approximately ¾ of the property is gently sloping from north/northwest to the south/southeast with little topographic relief. A few isolated hills punctuate the meadow. The southern ¼ of the property and small portions of the western boundary have steeply dipping hills with up to 150 feet of relief. Due to the large resolution of the USGS quadrangle map, accurate measurement of the slope inclination was not possible, but a visual estimation of the slopes indicates that portions of the slopes in the southern property could be as steep as 2:1 (horizontal:vertical).

2.2 AERIAL PHOTOGRAPH REVIEW

We reviewed available aerial photographs obtained from the United States Department of Agriculture (USDA) in Redding, California. These photos were from 1952 and 1994. In addition, we reviewed an aerial photograph from an online source for 1999. We present our observations of the photographs as follows:

1. 1952: The aerial photograph shows several large areas with differing geometric shapes and color. These patterns are indicative of farming. No structures are apparent on the photograph, however small structures would be difficult to discern on the photograph due to the large scale. Dirt roads are visible on the property. Small stands of trees are visible throughout the property with denser tree growth in the southern and western portions of the property.

2. 1994: The farming patterns are no longer apparent on the photograph. Additional dirt roads are visible on the photograph. The areas of tree growth appear denser.

3. 1999: The property appears similar to the 1994 photograph.

2.3 HISTORIC TOPOGRAPHIC MAP REVIEW

We reviewed historical topographic maps of the United States Geological Survey 7.5' Project City Quadrangle from 1957, 1969 and 1991. The 1957 topographic map shows one small structure near the northeast corner of the property and another small structure along the eastern boundary towards the south end of the property.

The 1969 topographic maps shows a third structure near the first structure in the northeast portion of the property.

The 1991 topographic map appears similar to the 1969 map.

2.4 SITE RECONNAISSANCE

We observed the following site features during our reconnaissance:

- Three drainages cross the meadow portion of the property with flow in a southerly direction. The easternmost and the central drainages are shown on the USGS topographic map as Rancheria Creek, and the westernmost is labeled Moody Creek.
- The drainages display a meandering style geomorphology and are incised 1 to 3 feet deep in some areas.
- Moody Creek and the two branches of Rancheria Creek are generally densely vegetated with trees and seasonal plants.
- Water was observed in all three of the drainages.

- The hilly areas were observed to be densely vegetated and tree-covered. In gently sloping areas, scattered trees and small stands of trees were observed.

- Some areas along the eastern and central portions of the property appeared wet with abundant tall grasses and muddy areas. Muddy areas were deeply rutted where it appeared vehicles had attempted to drive through them.
- We observed a few dirt roads that appear to provide access to the property. The direction of the roads appeared random and many were inaccessible to vehicle traffic due to wet and muddy conditions.

- One dirt road lead to an abandoned farmstead in the northeastern portion of the property at the top of a small hill. These buildings are in the same area as those shown in the northeast portion of the property on the topographic map. We observed perimeter concrete footings for a raised wood floor structure and small areas of concrete assumed to be remnant sidewalk and patio areas. Footings for a raised wood floor outbuilding were observed just west of the assumed main residence. A corral with footings for an outbuilding was observed northwest of the main structure. None of the buildings were intact, and a pile of rubble and rotting lumber was all that remained. The location of the buildings is shown on Figure 2.

- No building was observed along the eastern boundary in the southern portion of the property, as shown on the 1957 and 1969 topographic maps.

- Two areas with concrete wells were observed. The wells are located to the west and northeast of the abandoned residential structure. The concrete pads were approximately 6 feet square with a 3-foot diameter hole in the middle filled with water. The depth of the wells is unknown. The western well also had a 5-inch diameter metal pipe with a small concrete pad near it. The location of the wells is shown on Figure 2.

- Two pipes extending out of the ground were observed in the east-central portion of the property. One pipe was a 6-inch diameter steel pipe with red, yellow and white flagging tied around it. There was a white detached valve cover laying next to the pipe. The second pipe was a 6-inch diameter white PVC pipe that had been broken off approximately 1 foot from the ground surface. This pipe had flagging tied around it as well and was protected by an old tire. The area where these pipes were observed is shown on Figure 2.

- Several billboard signs were observed on the property along the alignment of I 5.

- Large pieces and piles of debris were scattered across the property. The debris consisted largely of old rolls of barbed wire, abandoned cars, dumped appliances, sheets of corrugated tin, a sleeping bag, and piles of old lumber.

- A gas station is located northeast of the property at the Mountain Gate exit off I 5.
- A railroad alignment passes near the property beyond the northwest corner.
- A water tank for the Town of Shasta Lake is located on top of the large hill beyond the southern boundary.
- The Town of Shasta Lake borders the property to the south and along the southwestern boundary.

Selected site features are shown on Figure 2. Photographs of selected site features are shown in Figure 6.

2.5 REGIONAL SETTING

The project site is located in the very northern tip of the Great Valley Province of California. To the north and west is the Klamath Mountain Province and to the east is the Cascade Range Province. Shasta Reservoir and the Shasta National Forest are located north of the project site (Figure 2).

2.6 REGIONAL SEISMICITY

The project is considered to lie in a seismically active region. Northern California has a long history of faulting and associated earthquakes. Figure 5 shows mapped faults considered by the California Geological Survey (CGS) to be active.

Using the computer program EQFault (Blake, 2000), we identified all known faults considered active by the CGS within a 100 km radius of the site. We then used the program to calculate the deterministic mean peak ground acceleration for those faults. This data is presented in the table below.

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Table 1: Active Faults in a 100 Km Radius of the Site				
Fault Name	Approx. Dist. (Km)	Source Type	Moment Magnitude	Det Peak Site Accel. g
Battle Creek	35	B	6.5	0.14
Foothill Fault System 2	51	C	6.5	0.10
Foothill Fault System 1	52	C	6.5	0.10
Foothill Fault System 3	55	C	6.5	0.10
Hat Creek – Macarthur - Mayfield	74	B	7.2	0.11
Mohawk – Honey Lake Zone 5	79	B	7.3	0.09
Cedar Mountain – Mahogany Mountain	100	B	7.1	0.08

2.7 SITE GEOLOGY

The geology of the project site and surrounding area is shown on the Geologic map of the California, Redding Sheet (R. G. Strand et al., 1962). Two Geologic units are mapped within the project boundaries. The youngest unit is the Pleistocene nonmarine sedimentary deposits (Qc) that consist of the Hookton Formation and the Red Bluff Formation. The older unit is the Devonian and Pre-Devonian? metavolcanic rocks (Dv?) of the Copley Greenstone. The mapped geology is shown on Figure 4.

The sediments of the Hookton Formation consist of yellow to orange gravel, sand, and clay. The Red Bluff Formation consists of well-rounded boulders and gravel within a tan to brick-red iron-stained matrix of sand and some clay (R. G. Strand et al., 1962).

The Copley Greenstone is comprised of several types of metamorphosed volcanic and igneous intrusive rocks. The upper portion of the unit consists of pillow lava, coarse pyroclastic material, and diabase. The lower portion of the unit is comprised of some tuff beds and fine-grained volcanic/igneous rocks with a composition of albite or albite-oligoclase, chlorite, epidote, and calcite.

2.8 GROUNDWATER

The California Department of Water Resources website of historical water data does not map any wells within a 5-mile radius of the project site. Groundwater in the Redding area, approximately 10 miles south, ranges from 50 to 150 feet below ground surface. Fluctuations in the level of groundwater may occur due to variations in rainfall and other factors.

3. GEOLOGIC HAZARDS

3.1 FAULT RUPTURE

A regional fault map illustrating known active faults relative to the site is presented in Figure 5. Review of the CGS website does not list the towns of Redding, Shasta Lake, or Mountain Gate or Shasta County as located within a currently designated Earthquake Fault Hazard Zone (known formerly as a Special Studies Zone). According to the Geologic Map of California Redding Sheet (R. G. Strand et al., 1962) and the Fault and Geologic Maps of California (Jennings, 1985), no known active faults are shown within the property. In our review of aerial photographs, we did not observe any readily apparent geomorphic evidence of recently active faulting. No known surface expression of active faults is believed to exist within the site. Therefore, the potential impact of fault rupture on the site is **less than significant** and no mitigation is required.

3.2 GROUND SHAKING

The Redding area is located in a seismically active area where strong ground shaking can be expected at the site during moderate to severe earthquakes in the general region. Earthquake ground shaking could result in significant damage to structures and pose a threat to public safety and human lives. Effects of ground shaking can include possible seismically induced liquefaction, lateral spreading, lurch cracking, differential compaction and/or settlement. Structural damage resulting from ground shaking is caused by the transmission of earthquake vibrations from the ground into the surface improvements. The primary variables that determine the extent of damage, among others, are the characteristics of the underlying earth materials, the design of the structure, the quality of materials and workmanship used in construction, the location of the epicenter and magnitude of the earthquake, and the duration and intensity of shaking. The most destructive effects of earthquakes are usually experienced where the ground is unstable and the structures are poorly designed and constructed.

According to parameters of the 1997 Uniform Building Code, this site is in Earthquake Zone 3. The closest known faults classified as active by the State of California Geologic Survey are the type A Little Salmon fault located approximately 130 km away to the west and the type B Battle Creek fault located approximately 35 km to the southeast of the site. The Little Salmon fault has an estimated moment magnitude of 7.0 and the Battle Creek fault has an estimated moment magnitude of 6.5 (CDMG Open-File Report 96-08). The Little Salmon fault and the Battle Creek fault could produce peak site ground accelerations at the site of 0.08g and 0.14g respectively (EQfault).

The map of *Seismic Shaking Hazards in California,* based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA) Model, 2002 (revised April 2003) maps mean peak ground accelerations that have a 10% probability of being exceeded in 50 years. This map shows that the site may experience mean peak horizontal ground shaking levels on the order of 0.1g to 0.2g for a 10 percent in 50 years exceedance level.

Without proper planning and engineering, the impacts of seismic ground shaking could be significant. A design level geotechnical exploration should be conducted to determine the appropriate soil treatment and site grading. By following the recommendation of the design geotechnical engineer and adhereing to local and UBC building codes, it is our opinion that the impacts posed by ground shaking will be **less than significant.**

3.3 LIQUEFACTION

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded, fine-grained sands. Liquefiable sediments are not known to occur at the project site, however no geotechnical studies have been conducted to address the liquefaction potential at the project site to date.

Even though the site soil is potentially variable, loose, saturated, liquefiable sands are most likely to occur near modern drainages. The extent of impact would depend on the soil characteristics, groundwater depth and duration and intensity of the earthquake, among other variables. Evaluation of potential seismic hazards is required as part of a design level geotechnical report. Recommendations for measures to reduce the effects of liquefaction would be provided in such a study.

There are no significant constraints to the proposed development related to liquefaction that cannot be mitigated through the implementation of applicable regulations, codes and standard engineering practices; therefore we consider the impact of liquefaction to be **less than significant.**

3.4 SEISMIC INDUCED SETTLEMENT

Earthquake-induced subsidence or seismic induced settlement is the compaction of soils and alluvium caused by ground shaking. This generally occurs in areas underlain by loose, saturated, and/or soft sediments. Based on our topographic map review, aerial photograph review and our site reconnaissance, we observed no evidence of localized ground settlement on the project site. The site soils should be evaluated for the potential for seismic induced settlement during a design level geotechnical report.

Based on the potential variability of the site soils, seismic induced settlement could affect portions of the site. The extent of impact would depend on the soil characteristics, groundwater depth and duration and intensity of the earthquake. Evaluation of potential seismic hazards is required as part of a design level geotechnical report. Recommendations for measures to reduce the effects of seismic induced settlement would be provided in such a study.

There are no significant constraints to the proposed development related to seismic induced settlement that cannot be mitigated through the implementation of applicable regulations, codes and standard engineering practices; therefore we consider the impact of seismic induced settlement to be **less than significant**.

3.5 LATERAL GROUND MOVEMENTS

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "free" face such as an open body of water, channel, or excavation. Generally in soils, this movement is due to failure along a weak plane, and may often be associated with liquefaction. As cracks develop within the weakened material, blocks of soil displace laterally towards the open face. Cracking and lateral movement may gradually propagate away from the face as blocks continue to break free. Generally, failure in this mode is analytically unpredictable, since it is difficult to determine where the first tension crack will occur.

The incised creeks at the site are small and are located in proposed park areas. There are no cliff faces or large deeply incised or open bodies of water within an appropriate distance from the site in our opinion, for lateral spreading to occur on the site. For this reason, the probability of lateral spreading occurring at the site during a seismic event is low and the impact is considered **less than significant** without mitigation.

3.6 LANDSLIDES

A landslide is the movement of soil or rock down a slope due to the influence of gravity. Landslides generally occur in areas of topographic relief with weak soils or bedrock underlying the slope. Many portions of the project site are relatively flat lying with no significant slopes, however, there are steep hilly areas in the southern and western portions of the property. Depending on the subsurface geology, landslides could be possible in the hilly portions of the property. These areas are heavily wooded and therefore landforms are difficult to observe. Detailed topographic maps and exploration of the subsurface geology will be necessary to determine if any landslides exist. At this time, no landslides have been identified.

Without implementing proper engineering and mitigation techniques, the impact of landslides could be significant. To reduce the potential for damage to the planned structures, we recommend a design level geotechnical exploration be performed and a report be prepared with mitigation recommendations if evidence of landslides are found. By utilizing proper engineering techniques, the impact of landslides can be reduced to **less than significant**.

3.7 SUBSIDENCE

Subsidence is the downward movement of the land surface caused by a reduction in hydrostatic pressure in thick geologic units in response to the removal of subsurface fluids such as water or petroleum products. Since the effect of subsidence due to groundwater or petroleum product withdrawal is regional in nature, it is not expected to create a significant differential condition across the site improvements. Therefore, the impact of subsidence on the site is considered **less than significant** without mitigation.

3.8 SUBSURFACE GASES

Review of the California, Department of Oil, Gas and Geothermal Resources (DOGGR) website, shows that there are no occurrences of geothermal activity mapped within the site. The closest geothermal activity as mapped on the Geothermal Map of California (Hodgson and Youngs, 2002) is approximately 30 miles to the northeast and southeast in the Big Bend and Lassen areas respectively.

Review of the California DOGGR website, shows that there are no mapped occurrences of oil or gas within the site. The closest gas field as shown on the map of Oil, Gas, and Geothermal Field of California (DOGGR, 2001) is approximately 30 miles to the south in the abandoned Red Bank Creek field.

Since this site is not mapped in a gas field or geothermal field in the above referenced maps the impact from subsurface gases is considered **less than significant** without mitigation.

3.9 NATURALLY OCCURRING ASBESTOS

New state regulations were enacted regarding the identification and mitigation of naturally occurring asbestos. Asbestos Airborne Toxic Control Measure (ATCM) Section 93105 regulations apply to any project where serpentinite or ultramafic rock is encountered in the course of grading or construction or any property within a mapped serpentinite or ultramafic geologic unit on the California 1:250,000 scale geologic maps. The project site is not mapped within one of these zones on the Geologic Map of California, Redding Sheet. It is our opinion that it is highly unlikely that serpentinite or ultra mafic rocks are present within the proposed

project. Therefore, the project will be exempt from the Air Resources Board Asbestos Airborne Toxic Control Measure regulations. The impact from naturally occurring asbestos is considered **less than significant** without mitigation.

3.10 VOLCANIC ERUPTION

Shasta County is located near the Cascade Range, which has documented volcanic activity. The Map of Potential Hazards From Future Volcanic Eruptions in California (Miller, 1989) maps all of Shasta County in an area of potential hazard from future volcanic eruption. The Map of Major West Coast Volcanoes, Washington, Oregon, and California (Topinka, 1998) maps Medicine Lake and Mount Shasta to the northwest and Lassen Peak to the southwest as potential sources for volcanic eruption. The USGS website does not show the project site or the Redding area as areas that would be affected by any lava or pyroclastic flows. The area may receive some ash fall depending on the direction of prevailing winds at the time of a potential volcanic eruption from these volcanic sources.

Our geologic reconnaissance did not reveal any evidence of volcanic activity on the project site. Based on this information, we anticipate volcanic eruption to pose a **less than significant** impact to the subject property, without mitigation.

3.11 TSUNAMI OR SEICHE

A tsunami is a long period sea wave generated by underwater earthquakes or volcanic eruptions. The project site is not located near the sea coast, a major oceanic inlet, or a large body of water; therefore, we anticipate that the probability of the site being adversely affected by a tsunami is low.

Seiches are waves occurring in confined bodies of water, such as lakes, reservoirs or bays, that are generally created by winds, seismic events or landsliding. Shasta Lake is located approximately 3 miles to the north of the project site and is separated from the project site by a series of hills and ridges. In our opinion, it is unlikely that a wave from Shasta Lake would directly impact the site. We consider the impact of tsunami or seiche to be **less than significant** without mitigation.

3.12 EXPANSIVE SOIL

Expansive soils shrink and swell as a result of moisture changes. Expansive soil can cause distress to foundations, floor slabs, pavements, sidewalks, and other improvements which are sensitive to soil movements. No evaluation of possible expansive soil impacts to project site improvements has been conducted to date.

Without implementing proper engineering techniques, the impact of expansive soils could be significant. To reduce the potential for damage to the planned structures, we recommend a design level geotechnical report be prepared with grading and/or foundation recommendations that account for the potential impacts of expansive soil. By utilizing proper engineering techniques the impact of expansive soils can be reduced to **less than significant**.

3.13 SOIL COMPRESSIBILITY

Compressible soil is generally very soft soil with low shear strength that is unable to adequately support the structural loads imposed on it. In our opinion, the native soils should be able to support the proposed structures without significant settlement. This should be confirmed during the design level geotechnical study. There are no significant constraints to the proposed development related to compressible soil that cannot be mitigated through the implementation of applicable regulations, codes and standard engineering practices; therefore we consider the impact of compressible soil to be **less than significant.**

3.14 SOIL EROSION POTENTIAL

Site grading activities and improvements such as paved streets can have an impact on erosion potential at the site. Construction of the project would require grading to create the building pads and other improvements, creating the potential for erosion and sedimentation both on- and off-site.

The impact of soil erosion is significant without mitigation. Erosion and sediment control require implementation of measures before, during and after grading activities. By implementing a storm water pollution prevention plan and best management practices the areas of exposed, erodible material can be minimized and concentration of rapidly flowing runoff in unprotected, erodible areas can be avoided. Through the implementation of appropriate engineering and best management practices; we consider the impact of soil erosion potential as **less than significant.**

3.15 SOIL CORROSION POTENTIAL

Soil and bedrock containing iron sulfides can generate sulfuric acid when exposed to air. The acid, when present, can present corrosion potential to buried utilities, foundations and other structures in contact with the soil. Sulfates are associates with the minerals pyrite and gypsum, brackish water or swamp sediments, mine sites, and black shales. Freshwater is generally low in sulfate, so freshwater deposits and fluvial deposits are not usually associated with a corrosion potential; however, indicators include iron stains, yellow jarosite coatings and Holocene brackish water sediments. Soils with low resistivity and/or chlorine content can also be corrosive to buried metals and concrete.

No evaluation of possible corrosion impacts to project site improvements has been conducted to date. During preparation of a design level geotechnical report soil corrosion potential should be evaluated. If the soil is potentially corrosive the impact to site improvements would be significant without mitigation. By following UBC codes and appropriate recommendations for mitigation of soil corrosion provided by a corrosion specialist, the impact could be reduced to **less than significant.**

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4. RISK MANAGEMENT

Our experience and that of our profession clearly indicates that the risk of costly design, construction, and maintenance problems can be significantly lowered by conducting a design level geotechnical exploration and retaining the design geotechnical engineering firm to provide construction monitoring services as outlined below:

1. Retain ENGEO to conduct a design level geotechnical exploration.

2. Retain ENGEO to review the final grading and drainage plans prior to construction to determine whether our recommendations have been implemented, and to provide additional or modified recommendations, if necessary.

3. Retain ENGEO to perform construction monitoring to check the validity of the assumptions we made to prepare this report. Our services would include testing and observation during site clearing, mass grading, subdrain installation, underground utility construction, and pavement subgrade and aggregate base compaction.

4. If any changes occur in the nature, design or location of the proposed improvements, then retain ENGEO to review the changes and prepare a written response and validate the conclusions and recommendations in this report.

If we are not retained to perform the services described above, then we are not responsible for any parties interpretation of our report (and subsequent addenda, letters, and verbal discussions).

5. LIMITATIONS

This report presents reconnaissance level geotechnical and geologic review and observations for use in preparation of an Environmental Impact Report by others for the Mountain Gate 600 Acre multi-use project. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any.

We strived to perform our professional services in accordance with generally accepted geotechnical and geological engineering principles and practices currently employed in the area. No warranty is expressed or implied.

We developed this report with limited reconnaissance and review data. We assumed that our surface observations and review data are representative of soil/rock and ground water conditions across the site. Our work did not include subsurface exploration, foundation recommendations,

grading recommendations, excavation sloping or shoring, soil volume change factors, flood potential, a geohazard exploration or corrosion potential estimates.

This geotechnical reconnaissance and review did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, then notify the proper regulatory officials immediately.

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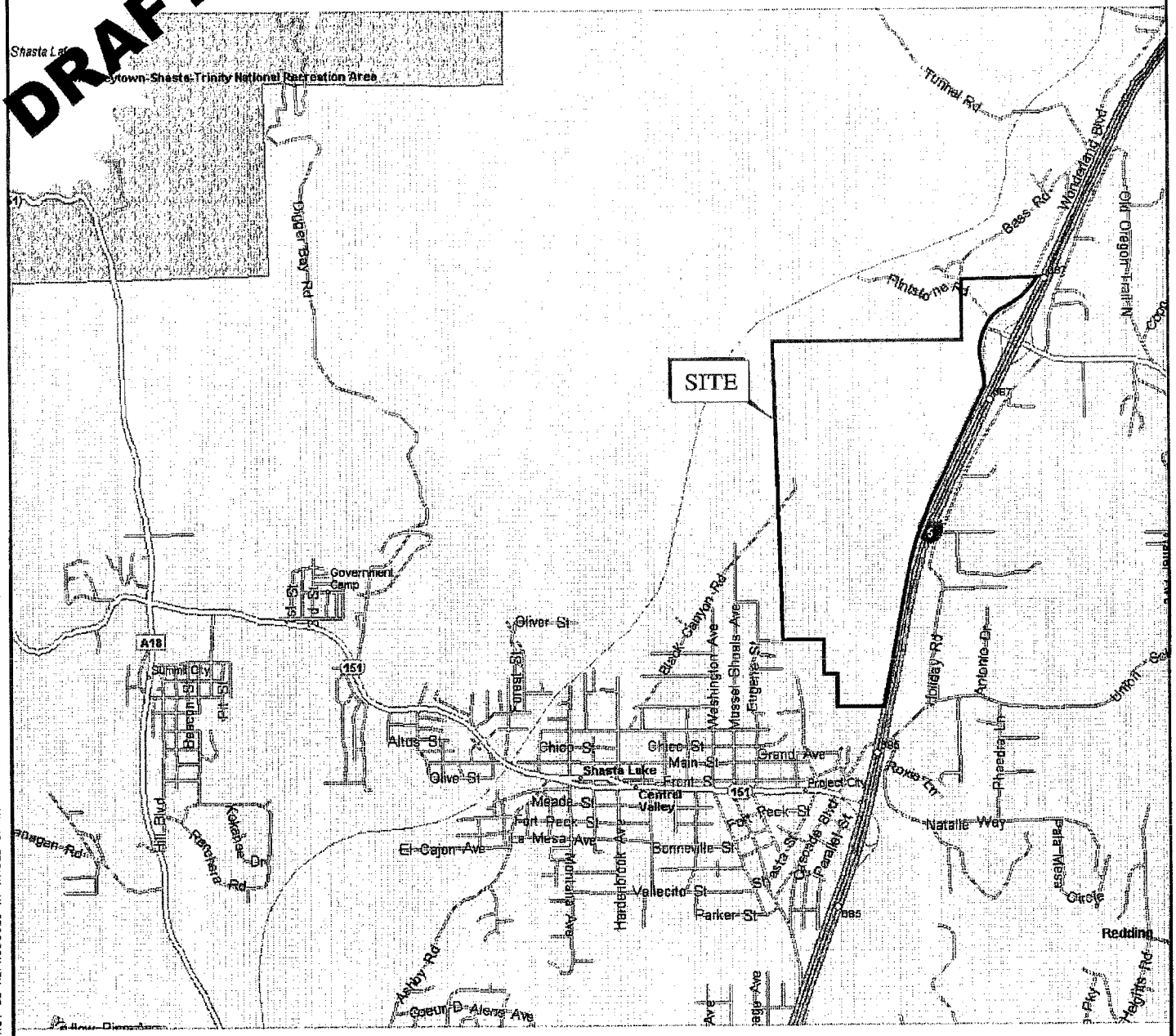
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BASE MAP SOURCE: MS STREETS AND TRIPS

NO SCALE

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SITE VICINITY MAP

MOUNTAIN GATE 600 ACRE PROPERTY

SHASTA COUNTY, CALIFORNIA

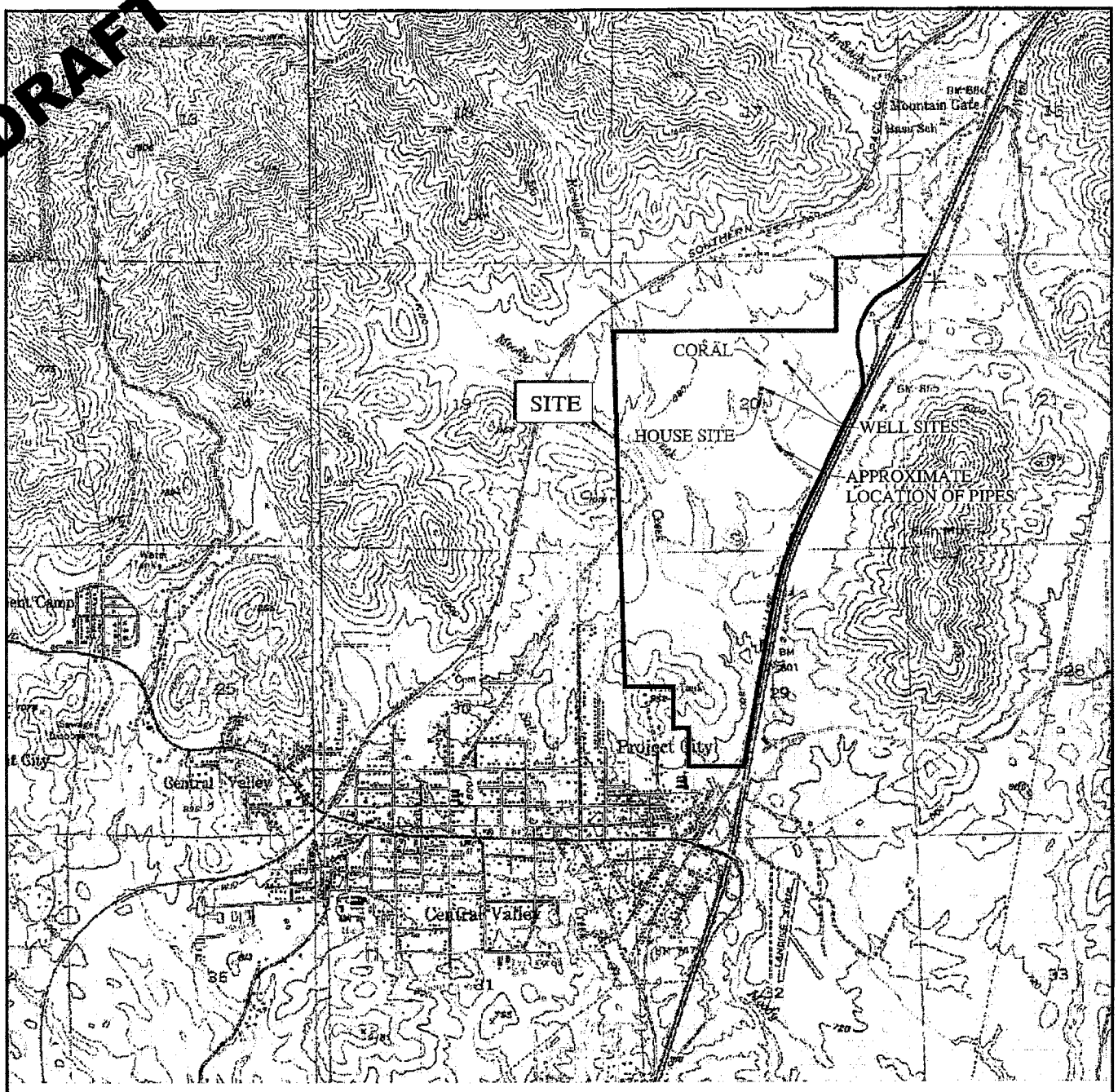
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DATE: AUGUST 2005		
DRAWN BY: DLB	CHECKED BY: DGS	

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BASE MAP SOURCE: U.S.G.S.

NO SCALE

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SITE TOPOGRAPHIC MAP

MOUNTAIN GATE 600 ACRE PROPERTY

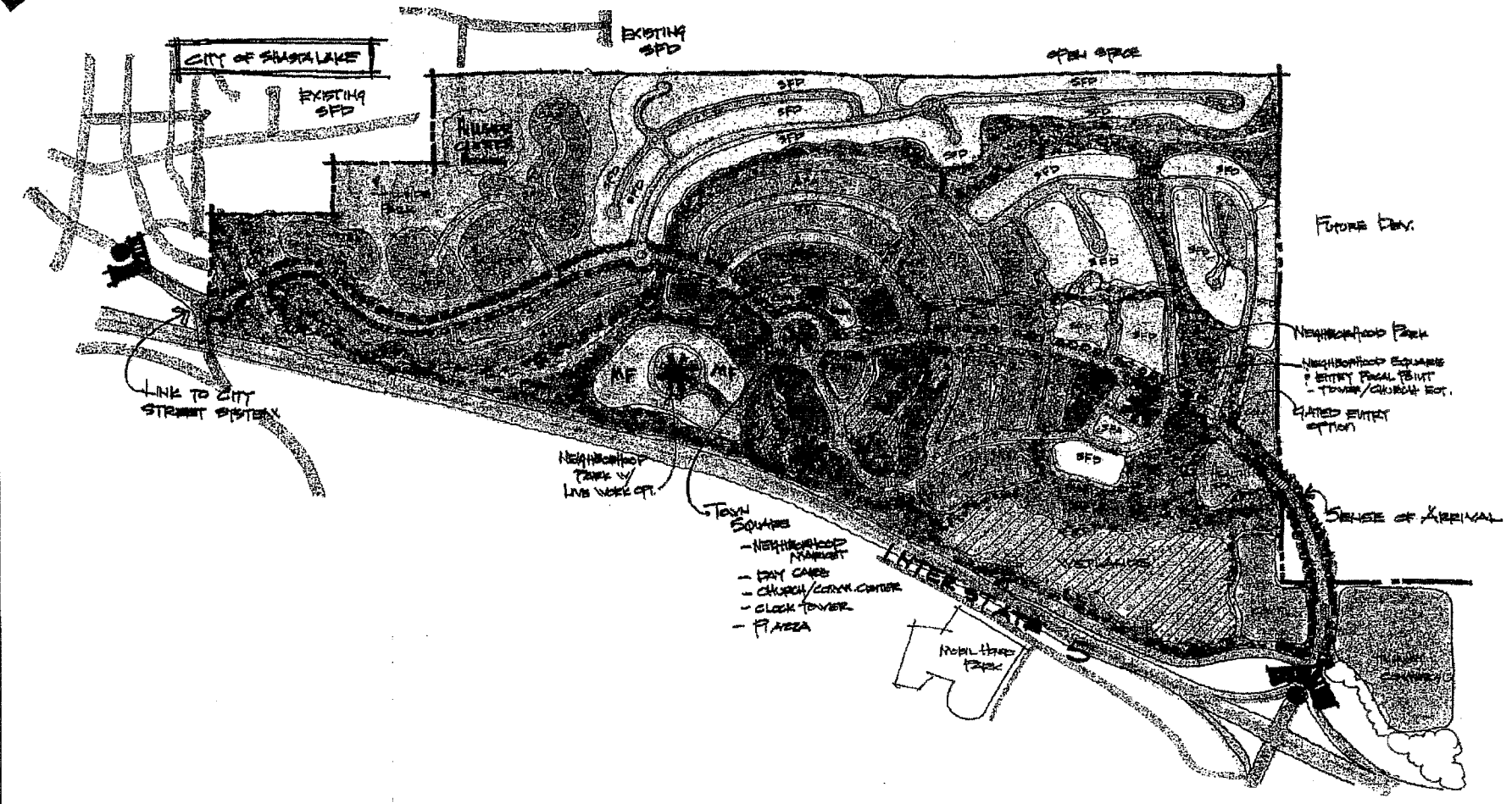
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PROJECT NO.: 6727.5.001.01		FIGURE NO. 2
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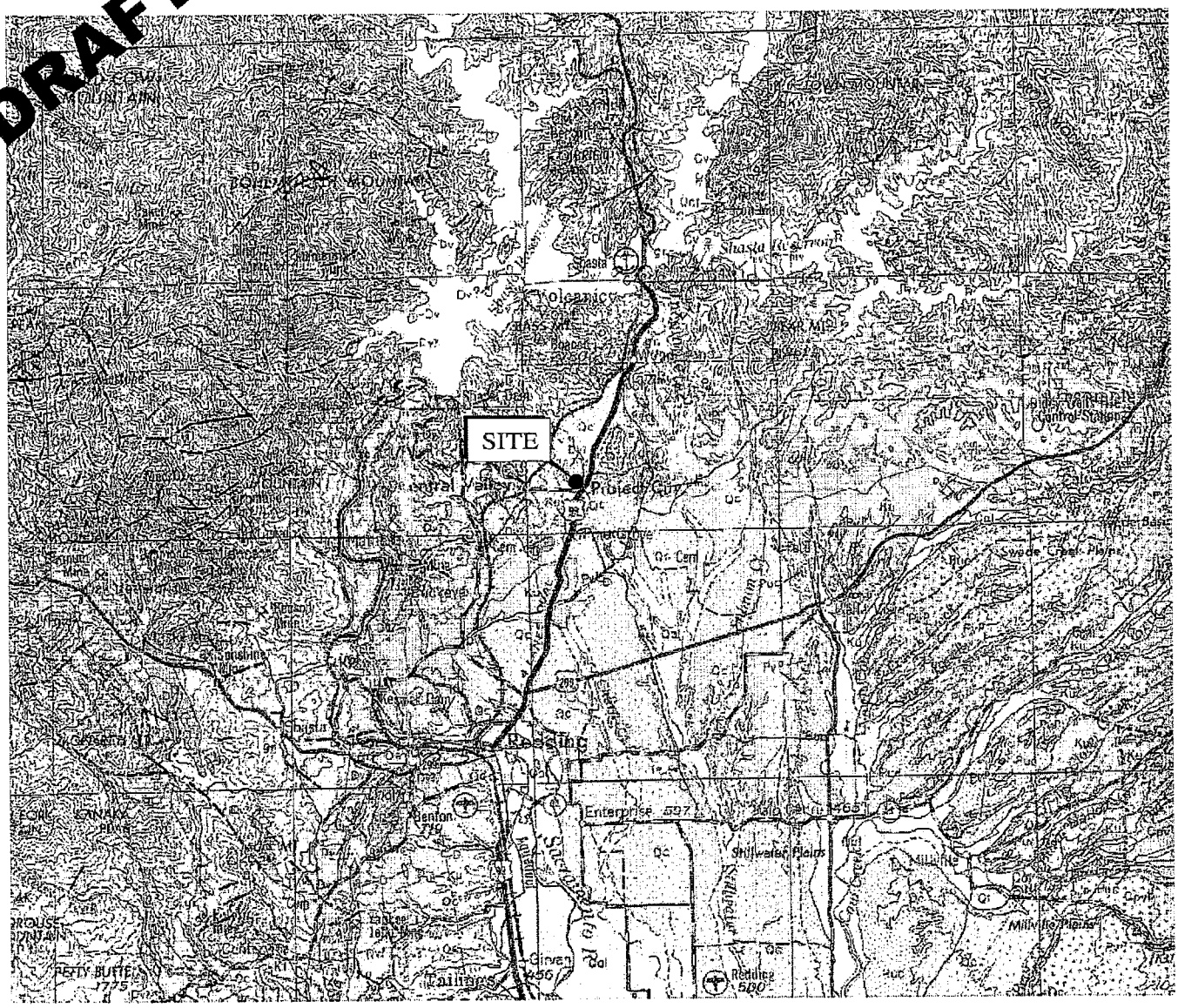
SITE DEVELOPMENT PLAN
MOUNTAIN GATE 600 ACRE PROPERTY
SHASTA COUNTY, CALIFORNIA

PROJECT NO.: 6727.5.001.01
DATE: AUGUST 2005
DRAWN BY: DLB CHECKED BY: DGS

FIGURE NO. 3

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EXPLANATION

Qc PLEISTOCENE NONMARINE

Ku UPPER CRETACEOUS MARINE

Dv? DEVONIAN AND PRE-DEVONIAN? METAVOLCANIC ROCKS

N

0 MILES 4

0 KILOMETERS 8

DRAFT

NO SCALE

BASE MAP SOURCE: JENKINS

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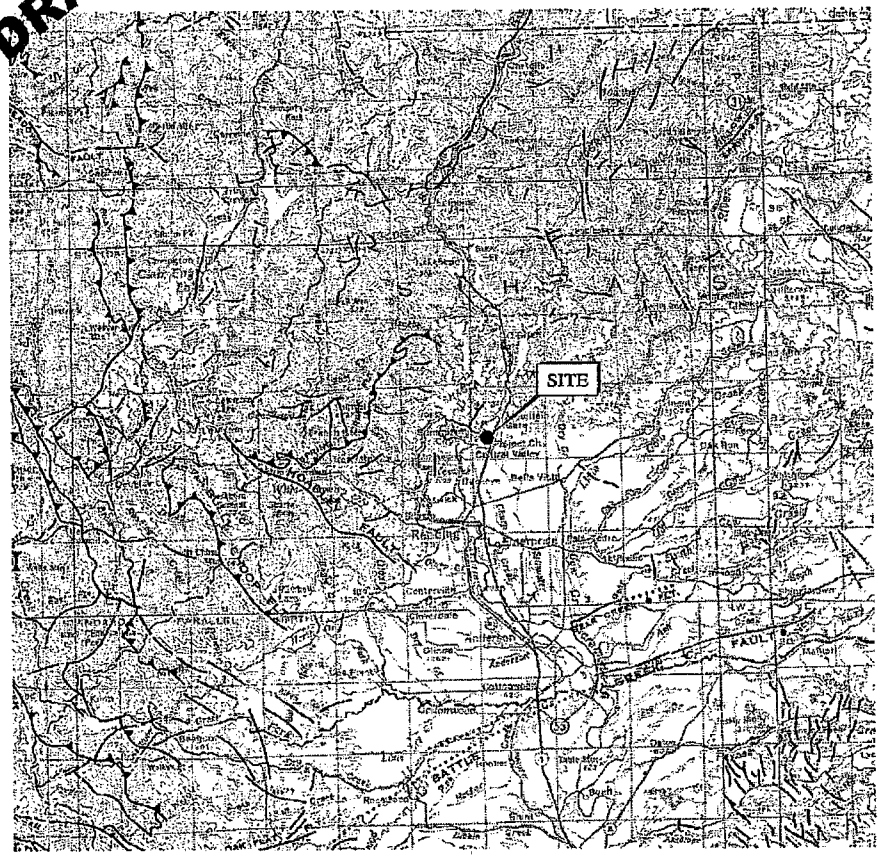
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REGIONAL GEOLOGIC MAP
MOUNTAIN GATE 600 ACRE PROPERTY
SHASTA COUNTY, CALIFORNIA

PROJECT NO.: 6727.5.001.01		FIGURE NO. 4
DATE: AUGUST 2005		
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0 MILES 10
0 KILOMETERS 20

N

EXPLANATION

Fault traces on land are indicated by solid lines where well located, by dashed lines where approximately located or inferred, and by dotted lines where concealed by younger rocks or by lakes or bays. Fault traces are queried where continuation or existence is uncertain. Concealed faults in the Great Valley are based on maps of subsurface horizons, so breaks are shown as approximate and may indicate structural trend only. All offshore faults based on seismic reflection profile records are shown as solid lines where well defined, dashed where inferred, queried where uncertain.

FAULT CLASSIFICATION COLOR CODE
(Indicating Recency of Movement)

Fault along which historic (last 200 years) displacement has occurred and is associated with one or more of the following:

(a) a recorded earthquake of Richter force or greater. (Also included are some well-defined surface breaks caused by ground shaking during earthquakes, e.g., extensive ground breakage, not on the White Wolf fault, caused by the Arvin-Tehachapi earthquake of 1952). The date of the associated earthquake is indicated. Where repeated surface ruptures on the same fault have occurred, only the date of the latest movement may be indicated, especially if earlier reports are not well documented as to location of ground breaks.

(b) fault creep slippage — slow ground displacement usually without accompanying earthquakes.

(c) displaced survey lines.

Fifth bound [illegible] added to emphasize location of historic fault displacement.

SPECIAL NOTATIONS

A triangle to the right or left of the line indicates termination point of observed surficial displacement.

Date bracketed by triangles indicates local fault break.

No triangle by date indicates an intermittent color along fault break.

Dot on fault indicates location where fault creep slippage has been observed and recorded.

Square on fault indicates where fault creep slippage has occurred that has been reported by an investigator on some page (ask), dates of events if confidently inferred. Squares to right and left of date indicate terminal points between which reported creep slippage has occurred (creep either continuous or intermittent between dates and points).

Holocene fault displacement (during past 10,000 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age alluvial debris: stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting different is based on the interpreted age of the youngest strata displaced by faulting. Paleoseismic band [illegible] added to emphasize location of Holocene fault displacement.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Fault may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement somewhat during the past 1.6 million years; possible exceptions are faults which displace rocks of undifferentiated Plio-Pleistocene age. Unconfirmed Quaternary faults were based on Fault Map of California, 1975, Geo Bulletin 201, Appendix D for source data.

Late Cenozoic faults within the Sierra Nevada including, but not restricted to, the Foothills fault system. Faults show stratigraphic and/or geomorphic evidence for displacement of late Miocene and Pliocene deposits. By analogy, late Cenozoic faults in this system (not from basin investigations in detail) may have been active in Quaternary time. (Data from PSHLE, 1993).

Pre-Quaternary fault (older than 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of geophysical and other information is old, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

Fault segment associated with a significant cluster trend of seismicity located earthquake epicentres (magnitude 0.2 or greater). Generally aligned along strike slip faults having Quaternary displacement, but not necessarily with historic surface rupture. Lack of seismic activity along any fault is no indication that the fault may not be active in the future (e.g. San Andreas fault north of San Francisco). Epicenter data are derived from closely spaced, telemetered stations and include only earthquakes recorded sufficiently accurately and which are associated with relatively large earthquakes.

Alleged seismicity on fault segments are referenced in Appendices C and E.

ADDITIONAL FAULT SYMBOLS

U = Upthrown side (relative or apparent)
D = Downthrown side (relative or apparent)

Bar and ball on downthrown side noted where space is limited.

Arrows along fault indicate relative or apparent direction of lateral movement.

Arrow on fault indicates direction of dip.

Low angle fault (barbs on upper plate). Fault surface generally dips less than 45° but locally may have been subsequently steepened. On offshore faults, barbs simply indicate a reverse fault regardless of steepness of dip.

OTHER SYMBOLS

Numbers refer to annotations listed in the Appendices of the accompanying report. Annotations include fault name, age of fault movement, and pertinent references including Earthquake Fault Zone maps where a fault has been zoned by the Alquist-Priolo Earthquake Fault Zoning Act. This Act requires the State Geologist to delineate zones to encompass all potentially and recently active faults.

Circles: cone and other types of volcanoes. Most were active in Pleistocene time, some are Holocene, a few are historic.

Number in box or circle refers to Table 4 (Recent Volcanic Eruptions) in accompanying report. (Plot refers to California, circle to Nevada.)

(1786 A.D.) = Date of historic volcanic eruption.

(9,600 B.P.) = Eruption occurrence in years before present (B.P.).

(0.5 m.y.) = Age of volcanic flow or eruption in million years (m.y.)

BASE MAP SOURCE: JENNINGS, 1994

ENGEO INCORPORATED
EXCELLENT SERVICE SINCE 1971

REGIONAL FAULT MAP
MOUNTAIN GATE 600 ACRE PROPERTY
SHASTA COUNTY, CALIFORNIA

PROJECT NO: 6727.5.001.01
DATE: AUGUST 2005
DRAWN BY: DLB CHECKED BY: DGS

FIGURE NO. 5

DRAFT

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ORIGINAL FIGURE PRINTED IN COLOR

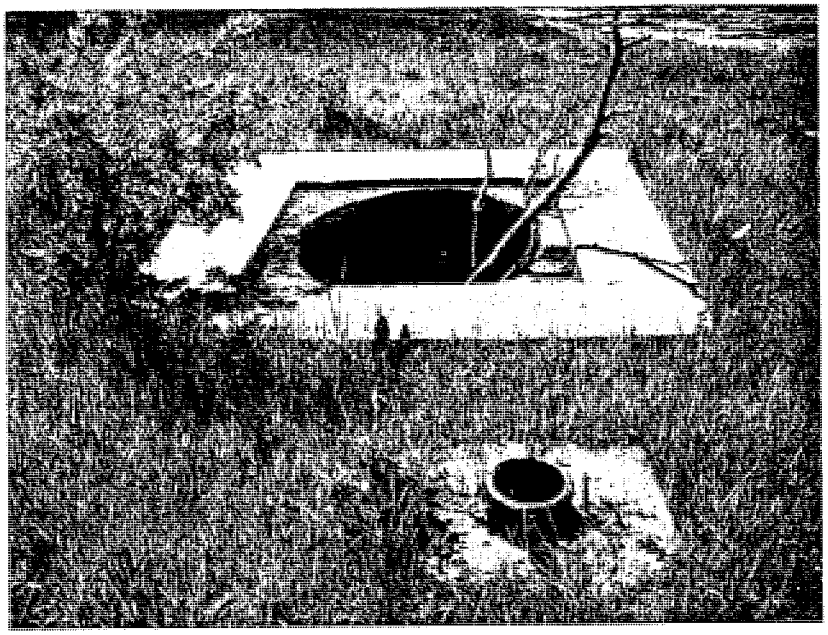
FIGURE 6: Site Photographs



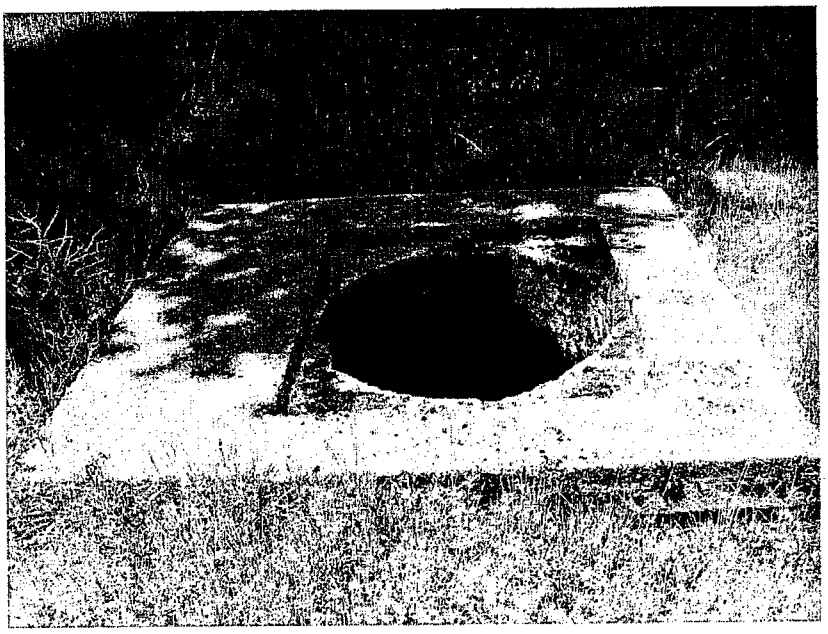
Typical meadow areas.



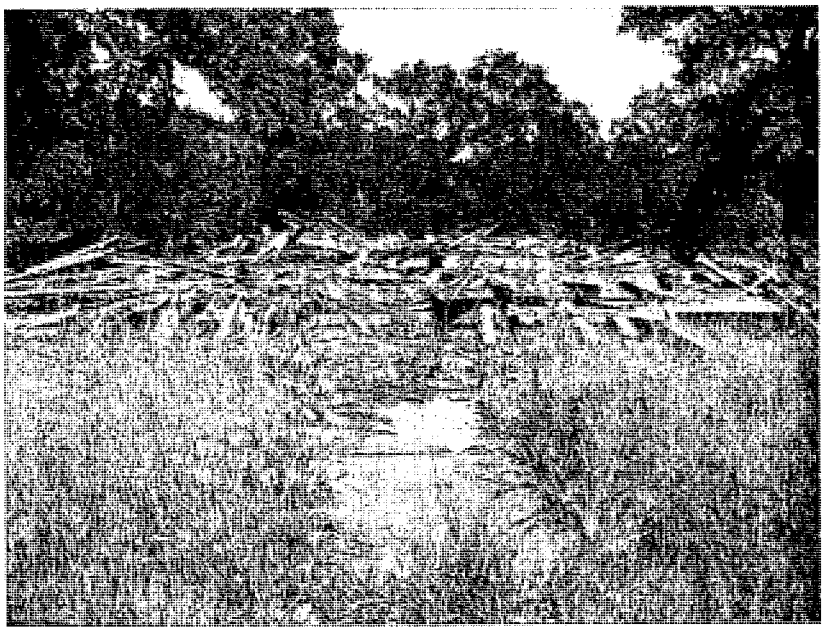
Typical densely wooded areas.



Well located west of the abandoned house structure.



Well located east of the abandoned house structure.



Abandoned house-site including sidewalks, remnant foundation, and pile of rubble.



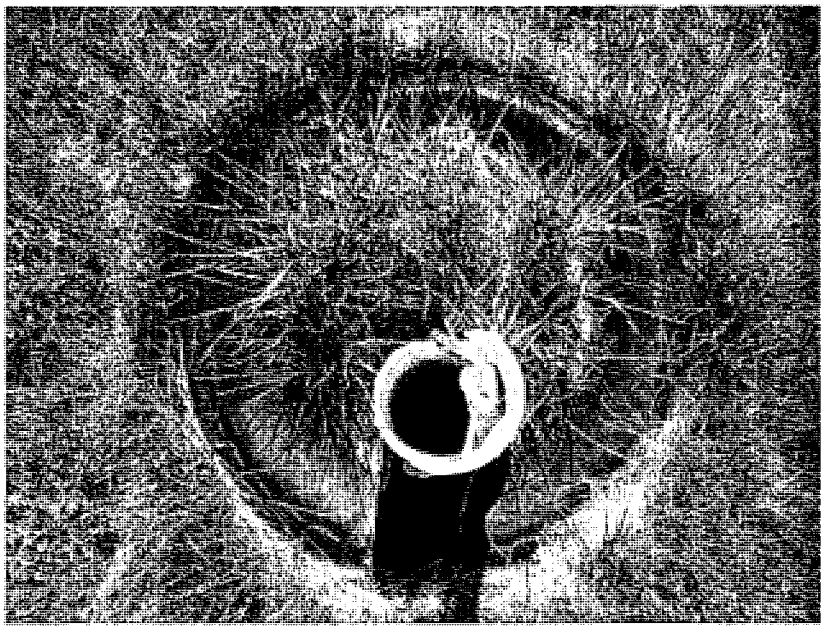
Abandoned corral area with remnant foundation from an outbuilding.



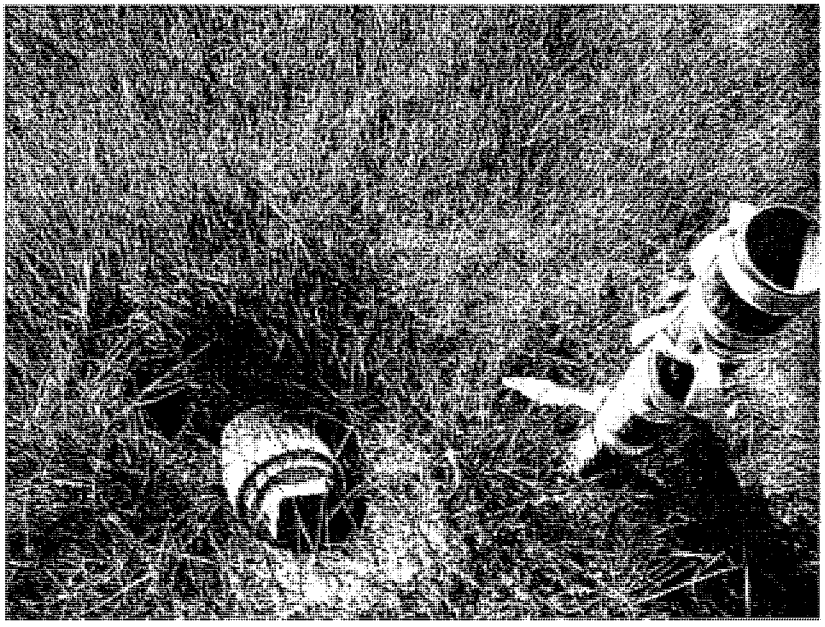
Typical debris pile.



Typical debris pile.



Pipe with flagging and tire.



Pipe with flagging and detached valve cap.



Typical billboard sign and area of standing water and saturated ground.

Appendix 4.8-3

ENVIRONMENTAL SITE ASSESSMENT

ENVIRONMENTAL SITE ASSESSMENT

Premier Homes
Mountain Gate
Redding, California 96003

Prepared
For

Premier Homes
Sacramento, California

Prepared
By

Environmental Safety Services

Modesto California

March 21, 2005

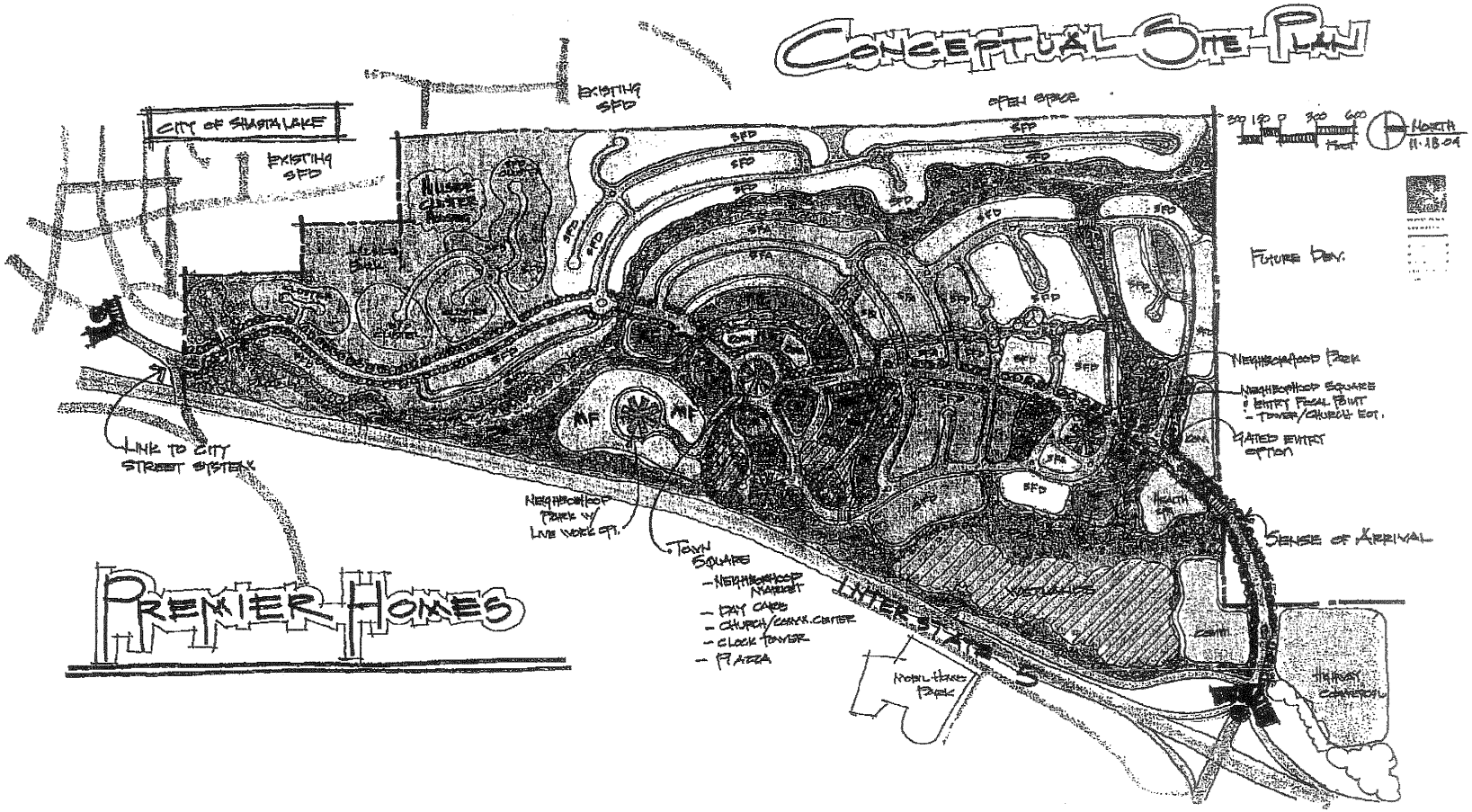

CONCEPTUAL SITE PLAN
CITY OF SHAKOPEE LAKE
EXISTING SFD
OPEN SPACE
SFD
MF
AF
NORTH
11-18-04
FUTURE DEV.
NEIGHBORHOOD PARK
NEIGHBORHOOD SQUARE
ENTRY FOCAL POINT
- TOWER/CHURCH ETC.
GATED ENTRY OPTION
SENSE OF ARRIVAL
LINK TO CITY STREET SYSTEM
NEIGHBORHOOD PARK W/ LIVE WORK SF.
TOWN SQUARE
- NEIGHBORHOOD MARKET
- DAY CARE
- CHURCH/COMM. CENTER
- CLOCK TOWER
- PLAZA
WETLANDS
INTERSTATE 5
NORTH HIGH PARK
PREMIER HOMES

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2.0 Introduction

3.0 Site Description

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5.0 Site Survey

6.0 Findings and Conclusions

7.0 Certification and Limitations

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Composite Assessors Parcel Map

Seasonal Wetlands Map

Alquist-Priolo Special Study Map for Shasta County

Topographical Maps

Findings From Database Search

Photographs

Aerial Photograph

1.0 SUMMARY

Environmental Safety Services (ESS) conducted a Phase I Environmental Assessment, of the proposed Mountain Gate Meadows development in Shasta County California. The assessment addressed the following Shasta County Assessor parcels; (007-400-037,007-400-052, 007-400-053, 007-400-54, 307-210-028, 307-210-031, 307-210-032, 307-210-033, 307-210-034, 307-210-035, 307-210-036, 307-210-037, 307-220-001, 307-220-002, 307-220-003, 307–220-004, 307-230-005, 307-230-006, 307-230-007, 307-230-008, 307-240-001, 307-380-019, 307-380-001, 307-380-002, & 307-380-003) located on the west side of Interstate 5 in Redding, California on February 25, 2005. The following summarizes the independent conclusions representing Environmental Safety Services (ESS) best professional judgment based on information and data available during this assignment. Information regarding operations, conditions, and other data provided by the client, owner or their representative has been assumed to be correct and complete. Additionally, the conclusions presented are based on the conditions that existed on the date of the assessment.

- Based on the results of the Phase I Environmental Assessment, I conclude that in the areas observed the subject property is not currently involved in the generation, treatment, storage or disposal of hazardous waste.

- The review of the regulatory agency data available for the general area of the subject property concluded that the site is not on any of the databases and that none of the sites listed are anticipated to have an impact on the subject property. In addition, the review suggests that the subject property has not been involved in the generation, storage or disposal of hazardous waste.

- The review of the historical data available for the site and the general area suggests that the subject property has not been involved in the use of hazardous chemicals, and the generation, treatment, storage, or disposal of hazardous waste.

- The majority of the site is zoned as rural vacant land with several parcels zoned as vacant commercial property.

2.0 INTRODUCTION

2.1 Purpose

The purpose of this site assessment is to evaluate and classify the environmental concerns associated with Mountain Gate Meadows Development located in Redding, California. This report ("Phase I Environmental Assessment") is limited to providing Premier Homes or his assigns an assessment concerning environmental conditions (limited to those issues identified in the report), as they currently exist at the site.

The assessment was conducted utilizing generally accepted Phase I industry standards. The scope of work included an evaluation of:

- Site background
- Physical characteristics of the site
- Historical site conditions
- Current site conditions including compliance with applicable regulations as they pertain to the presence or absence of:
  - Asbestos-containing materials (ACM)
  - Urea formaldehyde foam insulation
  - Radon gas
  - Facility storage tanks (above or below ground)
  - Transformers or other electrical equipment that uses dielectric fluid

Additionally, the assessment includes:

- Review of the project's current regulatory compliance posture, based on recorded fact, regarding any known or identified regulated activity that requires the use of hazardous chemicals, and the generation, treatment, storage, or disposal of hazardous waste.
- Cross check with information contained in database programs such as the NPL, CERCLIS, and other governmental databases.
- Visual observation of the adjacent properties to identify high-risk neighbors and the potential for a problem to migrate onto the project.

2.2 Special Terms and Conditions

The assessment is based upon the following terms and conditions and are as follows:

- A search of specified governmental databases following ASTM Standard (E1527) to identify and map nearby sites with potential or existing environmental liabilities.
- A physical site survey and evaluation of the site for evidence of potential environmental concerns.
- The limitations of the ASTM Standard and recommendations for mitigation of any hazardous conditions.

2.3 Limitations and Exceptions

This assessment was limited to the data reviewed and a physical survey of the site and the surrounding area.

3.0 SITE DESCRIPTION

The site is in Shasta County, California. The property is described as follows:

APN: 007-400-037 23 Acres 6003	Vacant Residential Land
APN: 007-400-052, 19.98 Acres 6003	Vacant Residential Land
APN: 007-400-053, 118.67 Acres 6004	Vacant Residential Land
APN: 007-400-054, 55.64 Acres 6004	Vacant Residential Land
APN: 307-210-028, 20.73 6003	Vacant Residential Land
APN: 307-210-031, 16.60 6003	Vacant Residential Land
APN: 307-210-032, 57.7 6004	Vacant Residential Land
APN: 307-210-033, 4.84 6002	Vacant Residential Land
APN: 307-210-034, 6.98 6002	Vacant Residential Land
APN: 307-210-035, 6.83 2002	Vacant Residential Land
APN: 307-210-036, 7.20 6002	Vacant Residential Land
APN: 307-210-037, 100.17 6004	Vacant Residential Land
APN: 307-220-001, 21.89 6003	Vacant Residential Land
APN: 307-220-002, Esmt., 6009	Vacant Residential Land
APN: 307-220-003, Esmt., 6009	Vacant Residential Land
APN: 307–220-004, 34.00 6003	Vacant Residential Land
APN: 307-230-004, 3.20 Acres, 2102	Vacant Commercial Land
APN: 307-230-005, 3.39 Acres, 2102	Vacant Commercial Land
APN: 307-230-006, 3.5 Acers, 2102	Vacant Commercial Land
APN: 307-230-007, 3.6 Acres, 2102	Vacant Commercial Land
APN: 307-230-008, 0.92 Acres, 2101	Vacant Commercial Land
APN: 307-230-019, 3.5 Acres, 2102	Vacant Commercial Land
APN: 307-240-001, 3.39 Acres, 2102	Vacant Commercial Land
APN: 307-380-001, 27.80 Acres, 6003	Vacant Residential Land
APN: 307-380-002, 28.51 Acres, 6003	Vacant Residential Land
APN: 307-380-003. 23.07 Acres, 6003	Vacant Residential Land

Total Acres 581.11

All of the parcels are open vacant land with no buildings. Some buildings may have been on the site in the past as noted on the topographical map from 1969. Seasonal wet lands are noted (see map in the appendix). Development of the site will require electric power, water and sewer systems for the development.

4.0 RECORDS REVIEW

4.1 Governmental Databases

A search of specified governmental databases according to ASTM standard (E-1527) was conducted to map sites with potential or existing environmental liabilities within a one-mile radius of the target site. Reference Online HAzmat Records Access ASTM Report Dated: March 12, 2005. A copy is in the appendix of this report.

The data search review showed the following:

- NPL (National Priorities List) The current NPL was reviewed. By cross-referencing name, address, and zip code, we conclude that the subject site is not listed on the current NPL listing. A one (1) mile radius check of the project for sites listed on the NPL identified no sites.

- CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) The current CERCLIS listing was reviewed. By cross-referencing name, address, and zip code, we conclude that the subject project is not currently listed on the CERCLIS. A one (1) mile radius check of the active sites listed on the CERCLIS identified no sites.

- CALSITES (California State Hazardous Waste Sites) The CALSITES database has information about sites that are contaminated with hazardous substances. A one (1) mile radius check of the active sites listed on the CALSITES database identified no sites..

- RCRIS (Resource Conservation and Recovery Information System) The current RCRIS listing was reviewed. RCRIS is used by the Environmental Protection Agency to track handler permit or closure status and cleanup activities. A one (1) mile radius check of the project for sites listed on the RCRIS identified no sites.

Additional Governmental Records

- SWIS (California Solid Waste Information System) SWIS contains information on the location and operation of active and inactive landfills. A one-half (½) mile radius check of the project for sites listed on the SWIS identified no sites.

- LUST (California Leaking Underground Storage Tank) The LUST report contains all open and closed LUST sites within a ½ mile radius. The radius search of the report of registered sites identified two (2) mapped sites. One has been properly closed by the county and the other has been designated no action required (soil only).

  UST (Underground Storage Tank) California maintains a statewide list of registered underground storage tanks. The historical data for active and inactive underground tanks is not maintained and dates from 1994. The radius search of the report of registered sites identified no mapped sites.

- ERNS (Emergency Response Notification System) The ERNS is a database used to store information on notifications of oil discharges and hazardous substances releases. The ERNS database does not include latitude and longitude information, and often provides only sketchy location information. The ERNS identified no sites within the search radius.

- Other databases reviewed identified no facilities on the subject property or adjacent properties.

5.0 SITE SURVEY

ESS staff member, M. G. Nelson PhD, conducted an on-site Phase I Environmental Assessment of the Mountain Gate parcels located in Redding, California near Interstate 5 on February 25, 2005. The assessment consisted of visual observations of the site and surrounding areas and a records review. In a telephone check with the Shasta County Environmental Department no concerns were noted for the site. The Alquist-Priolo special study zone (earthquake) did not identify any faults near the site.

For photographs and aerial photograph of the site see the appendix.

5.1 Hazardous Substances in Connection with Identified Uses

- Asbestos-containing materials (ACM)

  None . Vacant Parcels.

- Urea formaldehyde foam insulation

  None. Vacant Parcels.

- Facility storage tanks (above or below ground)

  None. Vacant Parcels..

- Transformers or other electrical equipment that uses dielectric fluid

  None noted.

- Radon gas

  A radon survey was not conducted at the Site. Radon occurs naturally and randomly in geographic settings. The California Department of Health Services (CDHS) conducted a statewide radon survey during 1990-1991 that entailed testing for radon in homes in designated geographic areas. The Site is in the Shasta County and according to this survey Radon concentrations detected averaged less than 1.0 pico Curies per liter. This compares favorably to the Environmental Protection Agency (EPA) safety standard for radon gas in residences of 4.0 pico Curies per liter and the United States National Council on Radiation Protection and Measurements (NCRP) standard of 8.0 pico Curies per liter. Radon is not considered an issue for the Site.

5.2 Hazardous Substance Containers and Unidentified Substance Containers

- None noted vacant parcels.

5.3 Indications of PCB's

- As noted in 5.1 above.

5.4 Indications of Solid Waste Disposal

- None noted.

5.5 Storm Water Drainage

- The storm water from this site remains on-site as seasonal wetlands or drain into a series of small creeks that flow south and drain the area .

6.0 FINDINGS AND CONCLUSIONS

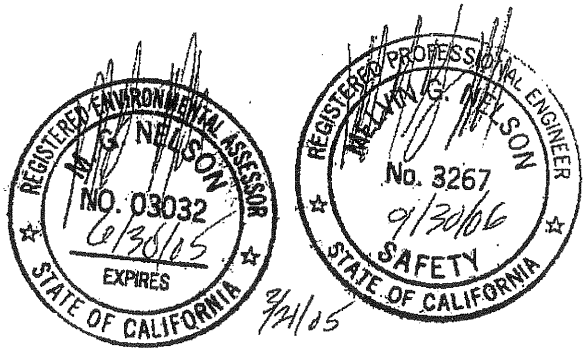
Based on the review of records and physical site survey the following findings are for the client's consideration and action:

- Changes to the site will require permits or approval from the appropriate regulatory agencies.

- Evaluation of the environmental database records does not indicate any environmental concerns due to the past or current use of the subject property.

7.0 CERTIFICATION AND LIMITATIONS

I, M. G. Nelson, certify that I have approved this report and that I am a Registered Environmental Assessor in the State of California, Certificate REA-03032 which expires 6/30/2005 and a Registered Professional Engineer for Safety in the State of California, Certificate # 3267 which expires 9/30/2006.



Environmental Safety Services

CERTIFICATION
AND
STATEMENT OF LIMITING CONDITIONS

Certification: The Environmental Inspector certifies to the Buyer, Seller and/or lender in a transaction as named in the inspection report "Principal Parties"; and the Inspector and the Principal Parties agree that:

1. The Environmental Inspector has no present or contemplated future (a) partnership with Principal Parties nor (b) an interest in the property inspected which could adversely affect the Inspector's ability to perform an objective inspection; and neither the employment of the inspector to conduct the inspection, nor the compensation for it, is contingent on the results of the inspection..
2. The Environmental Inspector has no personal interest in or bias with respect to the subject matter of the inspection report or any parties who may be part of a financial transaction involving the property. The conclusions and recommendations of the report are not based in whole or in part upon the race, color, creed, sex or national origin of any of the Principal Parties.
3. The Environmental Inspector has personally inspected the property, both inside and out and has made visual inspection of adjacent properties, to the extent possible by readily available access. The inspection does not include the removal of any soil, water or air samples, the moving of furniture or fixtures, or any type of inspection that would require extraordinary effort to access.
4. All contingent and limiting conditions are contained herein (imposed by the terms of the inspection assignment or by the undersigned affecting the conclusions and recommendations contained in the report).
5. This Environmental Inspection report has been made in conformity with and is subject to the requirements of the Code of Professional Ethics of the Environmental Assessment Association.
6. All opinions, conclusions and recommendations concerning the inspected property that are set forth in the inspection report were prepared by the Environmental Inspector whose signature appears on the report. No change of any item in the report shall be made by anyone other than the Inspector, and the Inspector shall have no responsibility for any such change.

Contingent and Limiting Conditions: The certification of the Environmental Inspector appearing in the environmental inspection report is subject to the following conditions and such other specific and limiting conditions as set forth by the Inspector in the report.

1. The inspector assumes no responsibility for matters of legal nature affecting the property inspected or the title thereto. The property is inspected assuming responsible ownership.
2. Any sketch appearing in or attached to the inspection report, or any statement of dimensions, capacities, quantities or distances, are approximate and are included to assist the reader in visualizing the property. The inspector has made no survey of the property.
3. The Inspector is not required to give testimony or appear in court because of having made the inspection with reference to the property in question, unless arrangements have been previously made therefore.
4. This report is not intended to have any direct effect on the value of the property inspected but simply to provide a visual Environmental Assessment solely for the benefit of the Principal Parties.
5. The Inspector assumes that there are no hidden, unapparent, or latent conditions or defects in or of the property, subsoil, or structures, other than those noted on the inspection report or any addendum to the report, which the Inspector has included. The Inspector assumes no responsibility for such conditions, or for the inspection, engineering or repair, which might be required to discover or correct such factors.
6. Information, estimates and opinions furnished to the Inspector, and contained in the report, were obtained from sources considered reliable and believed to be true and correct. However, the Inspector has made no independent investigation as to such matters and undertakes no responsibility for the accuracy of such items.
7. The Inspection and Inspection Report are made by the Inspector solely for the benefit and personal use of the Principal Parties. Disclosure of the contents of the Inspection Report is governed by the Bylaws and Regulations of the Environmental Assessment Association. No disclosure may be made of the Inspection Report without the prior written consent of the Inspector and the Inspector undertakes no responsibility for harm or damages to any party other than the Principal Parties.
8. Neither the Inspection Report, any part thereof, nor any copy of the same (including conclusions or recommendations, the identity of the inspector, professional designation, reference to any professional organization, or the firm with which the inspector is connected), shall be used for any purpose by anyone but the Principal Parties. The report shall not be conveyed by any one to the public through advertising, public relations, news, sales, or other media, without the prior written consent and approval of the Inspector.

APPENDIX

Area Map

Composite Assessors Parcel Map

Topographical Map

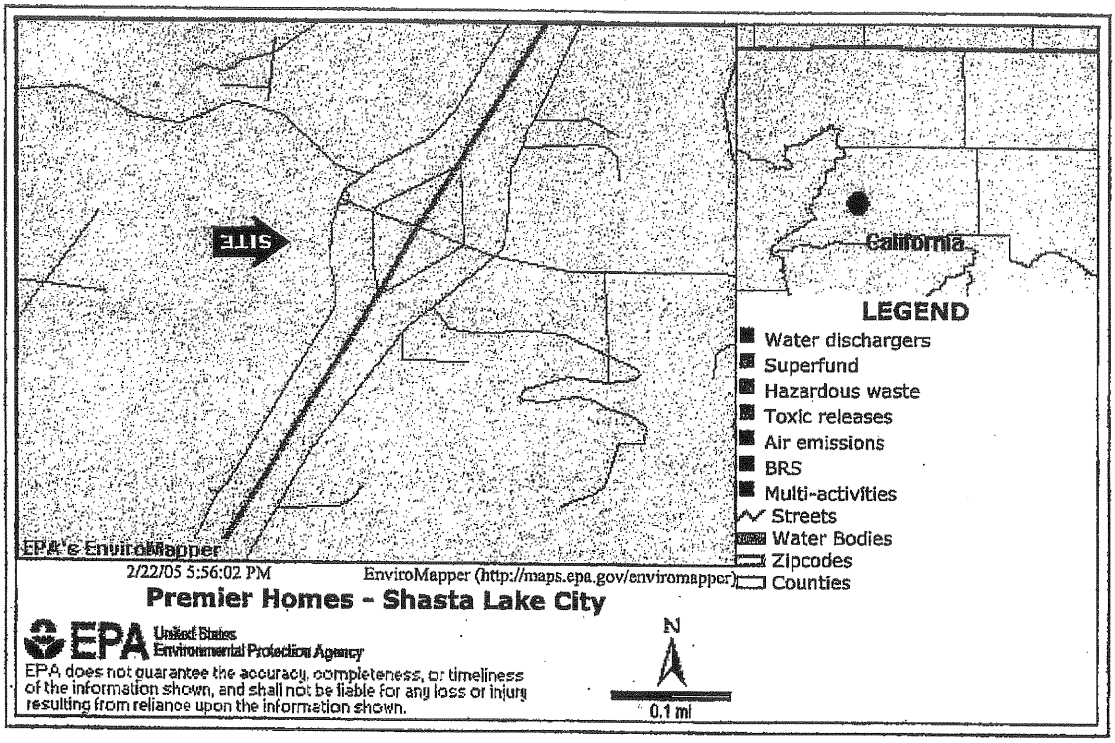
Seasonal Wetlands Map

Alquist-Priolo Special Study Map for Shasta County

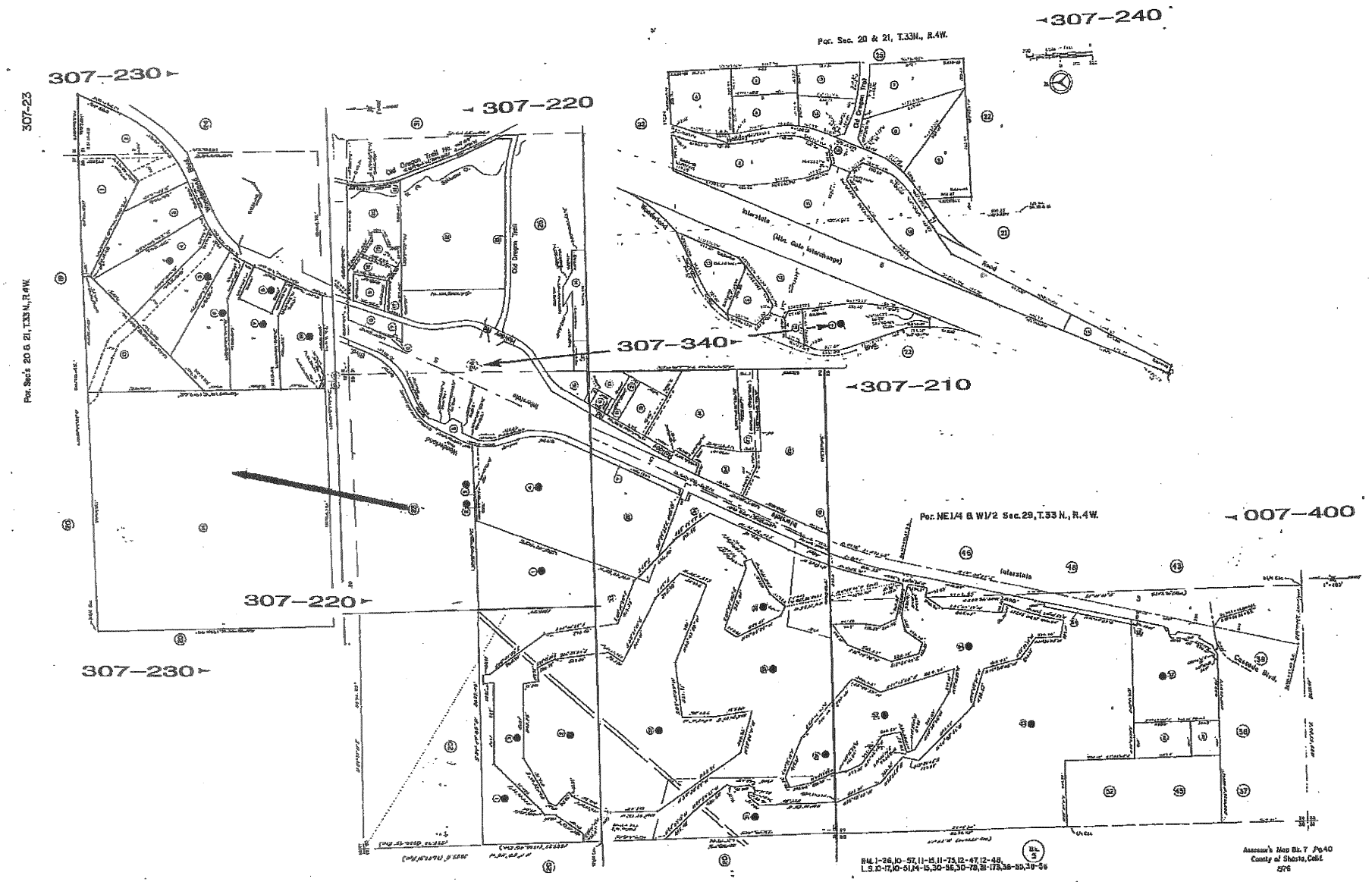
Findings From Database Search

Photographs

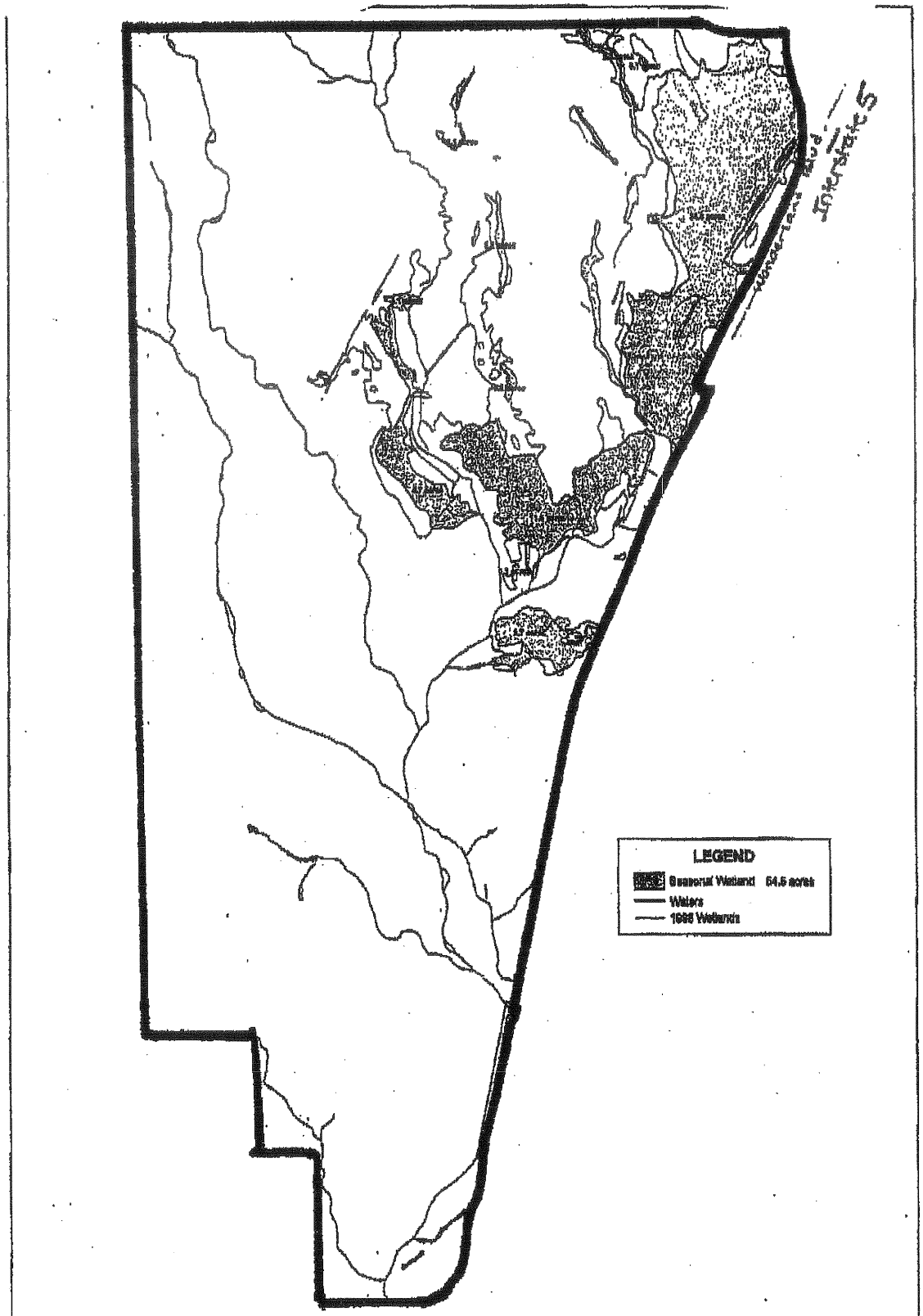
Aerial Photograph


SITE
California
LEGEND
Water dischargers
Superfund
Hazardous waste
Toxic releases
Air emissions
BRS
Multi-activities
Streets
Water Bodies
Zipcodes
Counties
EPA's EnviroMapper
2/22/05 5:56:02 PM
EnviroMapper (http://maps.epa.gov/enviromapper)
Premier Homes - Shasta Lake City
EPA United States Environmental Protection Agency
EPA does not guarantee the accuracy, completeness, or timeliness of the information shown, and shall not be liable for any loss or injury resulting from reliance upon the information shown.
N
0.1 mi

Area Map



COMPOSITE ASSESSORS MAP



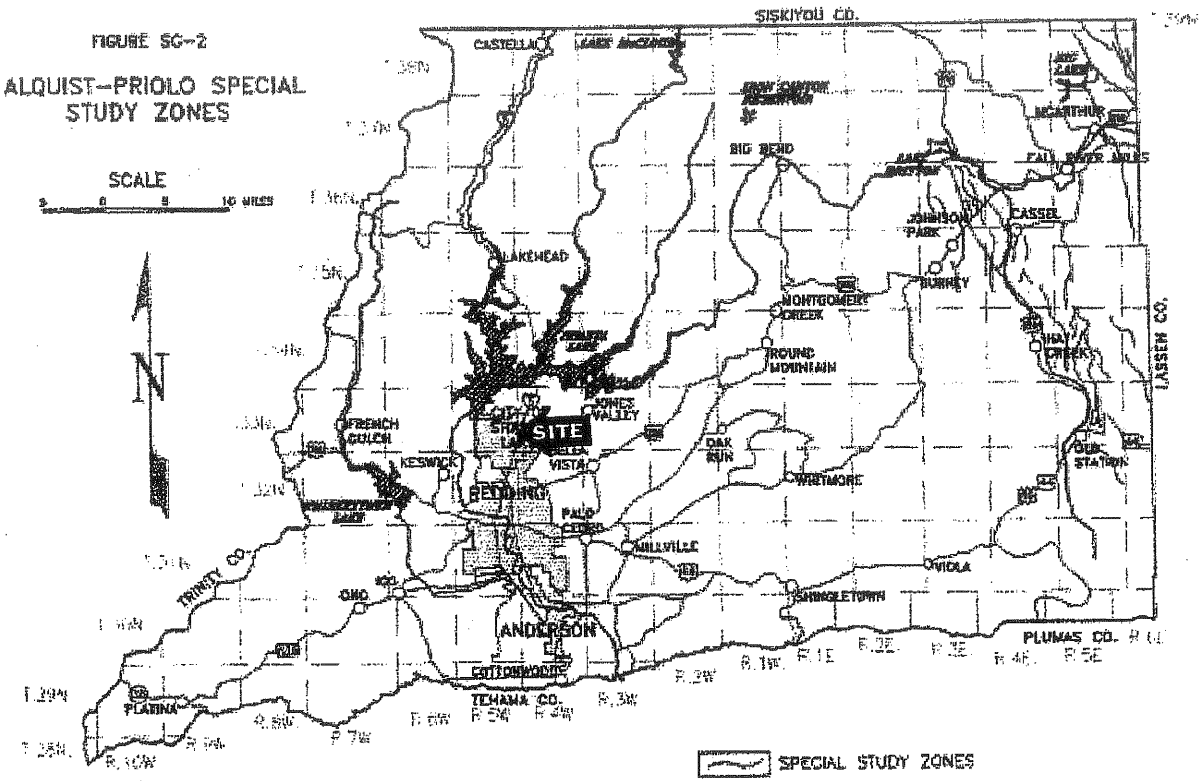
north fork

WETLAND ASSESSMENT
Mountain Gate Meadows

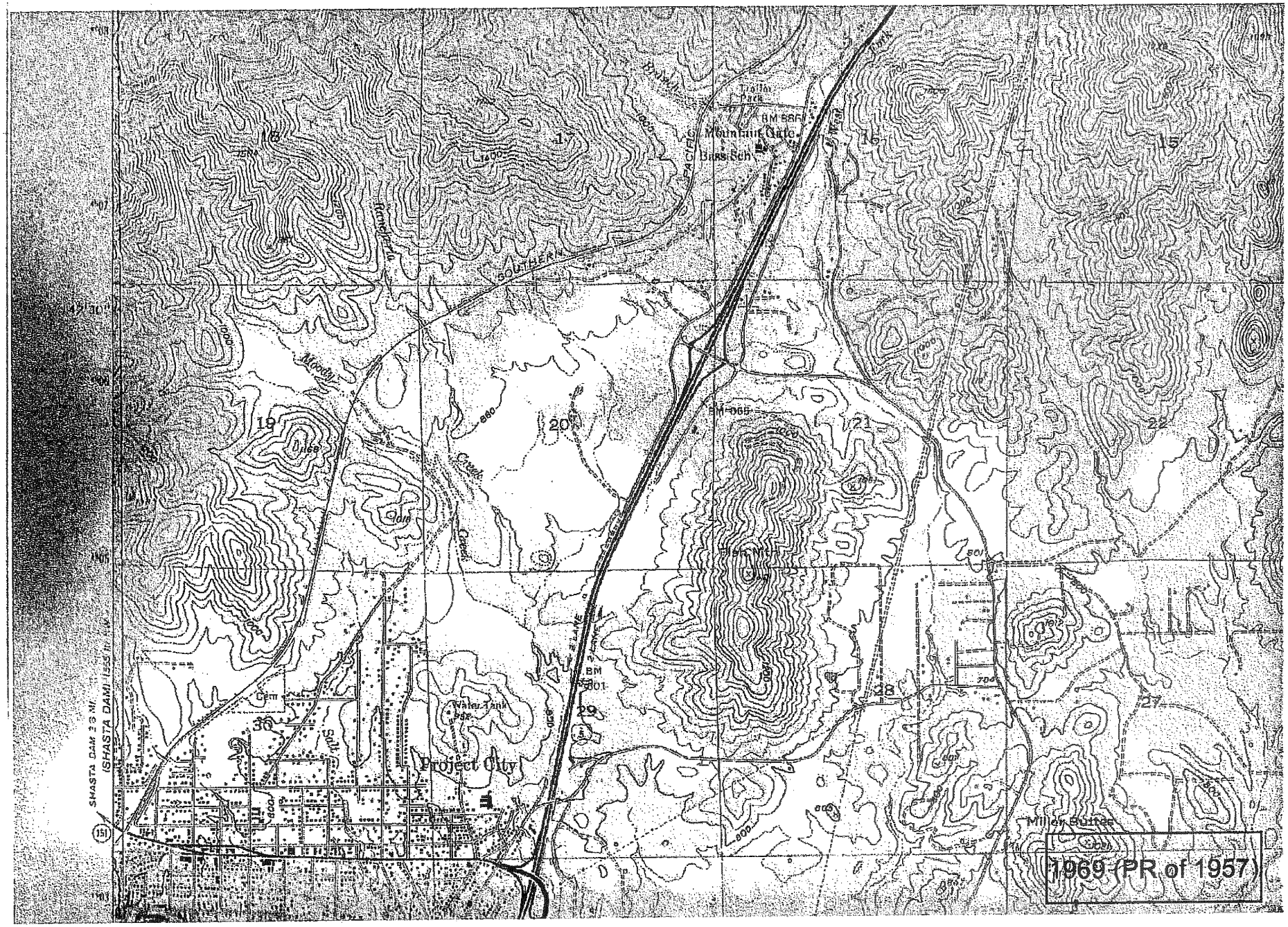
May 5, 2004

FIGURE SG-2

ALQUIST-PRIOLO SPECIAL STUDY ZONES



General Plan Revision Program: SHASTA COUNTY, CALIFORNIA


Project City
Mountain Gate
Trailer Park
Water Tank
Miller Buttes
1969 (PR of 1957)

1957
SITE
Project City
Ranchería
Creek
Mountain Gate
Basin Sch
SHASTA DAM 3.8 MI.
(SHASTA DAM)
42'30"

Online HAzmat Records Access

A service of O'Hara Environmental Consulting
18660 Mt. View Dr., Pine Grove,CA 95689•(209)304-2603
http://www.ohec.com

Search for Public Hazardous Materials Records for:

Premier Homes Shasta

Wonderland Blvd.
Redding, CA 96003

Latitude: 40.7042
Longitude: 122.3418

March 12, 2005

IMPORTANT: This report is based on public information data files provided by the various public agencies identified within. It has been generated by a computerized search service designed to meet the specifications of ASTM Standard E1527-00.

O'Hara Environmental Consulting maintains accurate copies of these data files, and updates the files regularly as new editions are released, but cannot be responsible for errors and/or omissions in the data.

Lack of appearance in this report does not constitute direct evidence that no contamination exists at a site.

This report is intended to be used as one tool, along with additional site review and analysis by a qualified environmental professional, to assist in making that determination.

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Online HAzmat Records Access

A service of O'Hara Environmental Consulting
Pine Grove,CA 95665-(209)304-2603
http://www.ohec.com

Summary of Findings

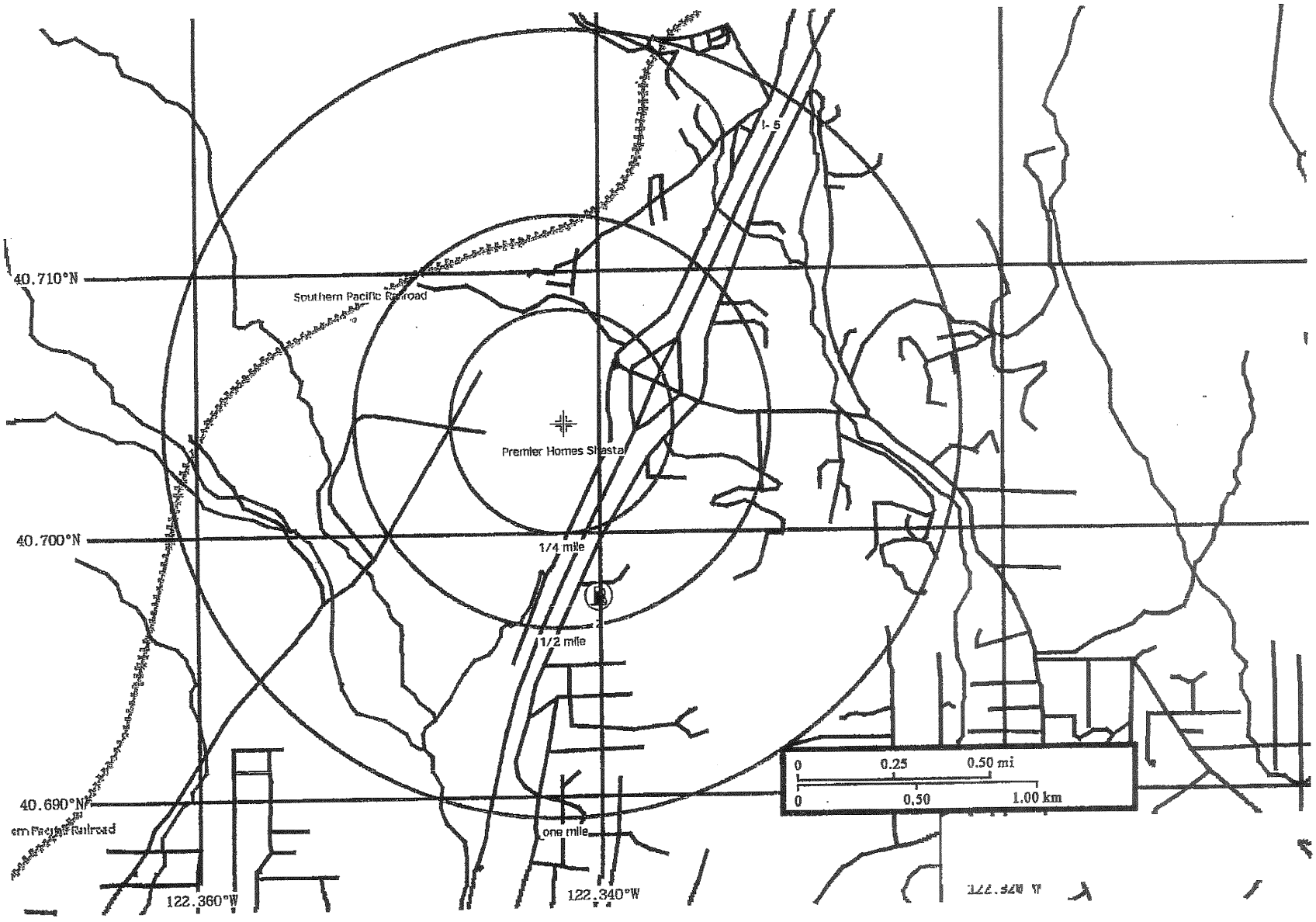
Map Symbol	Data Source		Date of data	Search Radius (mi.)	Mapped Sites	Unmapped Sites
		Hazardous Waste Cleanup Sites				
■	NPL	National Priorities List ("Superfund")	12/14/2004	1.00	0	0
◪	CERCLIS	CERCLIS: Hazardous Waste Cleanup Sites	12/14/2004	1.00	0	1
□	NFRAP	CERCLIS: No Further Remedial Action	12/14/2004	0.50	0	0
AWP	AWP	CalSites - Annual Workplan	12/02/2004	1.00	0	0
●	CALSITES	CalSites - State Hazardous Waste Sites	12/02/2004	1.00	0	0
		Hazardous Materials Handlers				
◊	TSD	RCRIS:Transport, Storage and Disposal	01/20/2005	1.00	0	0
◑	CORRACTS	RCRIS:Handlers with Corrective Actions	01/20/2005	1.00	0	0
◉	RCRIS	RCRIS Generators	01/20/2005	0.10	0	1
		Landfills				
Ⓛ	LANDFILL	State Permitted Landfills	01/22/2005	0.50	0	0
		Storage Tanks and Facilities				
⛽	LUST	State-listed Leaking UST Sites	02/26/2005	0.50	2	8
⛁	UST	Underground Storage Tanks	12/20/2004	0.10	0	5
⛁	UTNKA	Underground Storage Tanks - Active (1994	12/01/1994	0.10	0	11
⛁	UTNKI	Underground Storage Tanks - Inactive (1994	12/01/1994	0.10	0	2
		Spills ands Emergency Responses				
	ERNS	Emergency Response Notification System	12/16/1999	0.10	0	7

Unmapped sites include listings with incorrect or incomplete address information, and listings where the adress was not found in the geocoding database, for the following zipcodes:

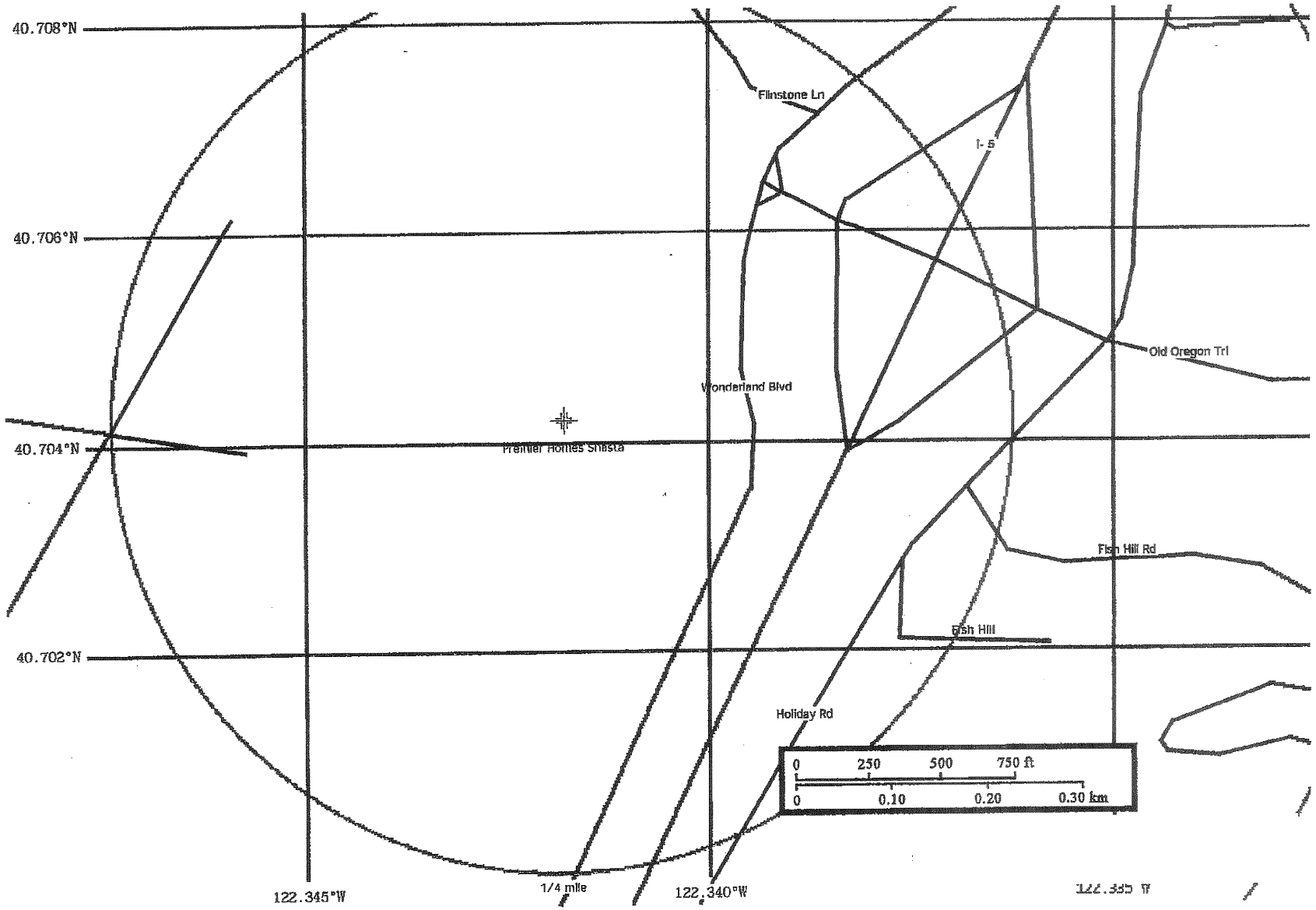
96003

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SHASTA COUNTY, CA



SHASTA COUNTY, CA



CERCLIS: Hazardous Waste Cleanup Sites

Sites located by city or zip code- not mapped

KESWICK SUBSTATION
2296 KESWICK DAM ROAD
REDDING CA 96003

Located by city or zip code, not mapped
Agency ID#: CA1890090003

Not on the NPL
- 19920918 DISCOVERY
- 19930920 PRELIMINARY ASSESSMENT

RCRIS Generators

Sites located by city or zip code- not mapped

SJ DENHAM CHRYSLER PLYMOUTH
773 N MARKET ST
REDDING CA 96003

Located by city or zip code, not mapped
Agency ID#: CAR000020537

Small Quantity Generator'

State-listed Leaking UST Sites

Sites within search radius

Map# 1 U SAVE MARKET
14361 HOLIDAY RD
I 5
REDDING 96003

Distance from subject property: 0.42 mi. SSE
Agency ID#: T0608900289

Case type: Soil Only
Substance leaked:
Status: Leak being confirmed
Abatement method(s):
No action required

Map# 2 USFS SHASTA LAKE RANGER DISTRI
6543 HOLIDAY RD
JONES VALLEY
REDDING 96003

Distance from subject property: 0.42 mi. SSE
Agency ID#: T0608900008

Case type: Soil Only
Substance leaked:
Status: No Action
Abatement method(s):
Excavate and dispose of contaminated soil

01/19/1987 Site closed

Sites located by city or zip code- not mapped

BELLA VISTA MINI MART
21471 HWY 299 E
FAWN DR
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900296

Case type: Aquifer Affected
Substance leaked:
Status: No Action
Abatement method(s):
No action required

BELLA VISTA WATER DIST WELL
4631 OLD 44 DR
CROSSROADS DR
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900203

Case type: Soil Only
Substance leaked:
Status: Case Closed
Abatement method(s):
Excavate and treat contaminated soil

10/15/1996 Site closed

HIDDEN VALLEY MARKET
22009 HIDDEN VALLEY DR
DRY CREEK RD
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608991406

Case type: Aquifer Affected
Substance leaked:
Status: No Action
Abatement method(s):
Other actions

J W WOOD COMPANY INC
3676 OLD HWY 44
OLD OREGON TR
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900228

Case type: Soil Only
Substance leaked:
Status: Case Closed
Abatement method(s):
Excavate and treat contaminated soil

02/05/1998 Site closed

KNIGHTON GARY
900 MARKET ST N
RIVERSIDE DR
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900050

Case type: Soil Only
Substance leaked:
Status: Case Closed
Abatement method(s):
No action required

09/18/1991 Site closed

PG&E PIT 1 FALL RIVER MILLS
0 HWY 299E
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900029

Case type: Aquifer Affected
Substance leaked:
Status: Case Closed
Abatement method(s):
Excavate and dispose of contaminated soil
Remove free product
Other actions

04/20/1993 Site closed

Continued

Case type: Soil Only
Substance leaked:
Status: Case Closed
Abatement method(s):
Excavate and dispose of contaminated soil

02/20/1996 Site closed

SEVEN UP BOTTLING PLANT
37258 MEADOWVIEW DR
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: T0608900102

Case type: Aquifer Affected
Substance leaked:
Status: Case Closed
Abatement method(s):
No action required

10/15/1991 Site closed

Underground Storage Tanks

Sites located by city or zip code- not mapped

BUDGET GAS FOOD MART 732 N MARKET ST REDDING 96003	Located by city or zip code, not mapped Agency ID#: 10492
COMMUNITY COLLEGE 11555 OLD OREGON TRAIL REDDING 96003	Located by city or zip code, not mapped Agency ID#: 10493
JAMES HENRY 978 Willow Brook Lane Redding 96003	Located by city or zip code, not mapped Agency ID#: 10291
KHYBER FOODS 1818 ROSSLYNN E 2	Located by city or zip code, not mapped Agency ID#: 17040
SPARKLE CAR WASH 1306 EUCLID S 2	Located by city or zip code, not mapped Agency ID#: 17039

Underground Storage Tanks - Active (1994 data)

Sites located by city or zip code- not mapped

B.V.W.D. WELL #2
4631 OLD 44 DR
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001045

BELLA VISTA MINI MART
5951 HWY 299 EAST
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001044

CHEVRON STATION #2535
732 NORTH MARKET STREET
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45000050

GEAREN'S AUTOMOTIVE
11114 RHYOLITE DR
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45000486

HIDDEN VALLEY MARKET
7015 HIDDEN VALLEY DR
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001099

J W WOOD CO INC
3676 OLD HWY 44 DR
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001169

KESWICK DAM
SHASTA OFC KESWICK DAM
REDDING 960039445
Located by city or zip code, not mapped
Agency ID#: 45001155

LAKEVIEW MARINA RESORT
20720 LAKEVIEW RD
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001111

MALL MART
1233 HILLTOP DRIVE
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001089

QUICKY'S FOOD & FUEL
11113 BLACK MARBLE WAY
REDDING 96003
Located by city or zip code, not mapped
Agency ID#: 45001128

WASTEWATER PUMP STATION NO 3
CASCADE BLVD
PINE GROVE 96003
Located by city or zip code, not mapped
Agency ID#: 45001152

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Underground Storage Tanks - Inactive (1994 data)

Sites located by city or zip code- not mapped

BUREAU OF RECLAMATION
SHASTA DAM 14MI N OF
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: 45001029

UNOCAL SERVICE STATION #3962
1300 N MARKET ST
REDDING 96003

Located by city or zip code, not mapped
Agency ID#: 45000063

Emergency Response Notification System

Sites located by city or zip code- not mapped

Ben"s Trucking — Located by city or zip code, not mapped
intersection Turn Creek Rd & Dana D — Agency ID#: 634634
Redding CA

04/04/1999: Merchant/Business Overturned Tanker Truck (set of doubles) is leaking into stormdrains.; Cleanup by: Responsible Party; OES Notification:AA/CUPA,DFG,DHS,DTSC,LANDS,WB,FWS Previous Case #: 99-1495; GASOLINE 3200 GAL

Ben"s Trucking — Located by city or zip code, not mapped
intersection Turn Creek Rd & Dana D — Agency ID#: 635153
Redding CA

04/04/1999: Merchant/Business Overturned Tanker Truck (set of doubles) is leaking into stormdrains.; Cleanup by: Responsible Party; OES Notification:AA/CUPA,DFG,DHS,DTSC,LANDS,WB,FWS Previous Case #: 99-1495; gasoline 3200 GAL

CITY OF REDDING — Located by city or zip code, not mapped
ALLEY BETWEEN SANTA FE & BENTON — Agency ID#: 172846
REDDING CA 96003-

07/11/1990: TRANSFORMER TRANSFORMER FAILED, RUPTURED.; AREA BLOCKED OFF, CLEANUP PENDING LAB ANALYSIS FOR PCB.; ; TRANFORMER MINERAL OIL 20 GAL

CITY OF REDDING, ELECTRIC DEPT — Located by city or zip code, not mapped
IN ALLEY AT BENTON ST. & SANTA FE A — Agency ID#: 172847
REDDING CA 96003-

07/11/1990: TRANSFORMER TRANSFORMER FAILED; CONTAINED BY R.P., SAMPLES TAKEN FOR ANALYSIS.; ; TRANSFORMER OIL (POSSIBLE PCB) 20 GAL

DOI - NATIONAL PARK SERV — Located by city or zip code, not mapped
38050 HWY 36 LASSEN VOLCANIC NATION — Agency ID#: 362302
MINERAL CA 96003

02/04/1994: A STORAGE TANK HAD A TRANSFER PIPE LEAK FROM A CRACK; A SORBENT BOOM WAS USED; ; OIL, FUEL: NO. 1-D 100 GAL

HOPKINS TRUCKING — Located by city or zip code, not mapped
VACANT LOT/2418 CASCADE BLVD — Agency ID#: 281584
REDDING CA 96003-

08/22/1992: FUEL LINE RUPTURED; A.C. IND CLEANING UP/NO WATERWAYS AFFECTED.; ; DIESEL 0 LBS

SHASTA COLLEGE — Located by city or zip code, not mapped
11555 OLD OREGON TRAIL — Agency ID#: 298568
REDDING CA 96003-

12/16/1992: QT= LARGE PILE BURNING PILE OF TIRES/RELEASE TOXIC CLOUD; FD TO CLEANUP; ; BURNING TIRES 0 OTH

PHOTOGRAPHS

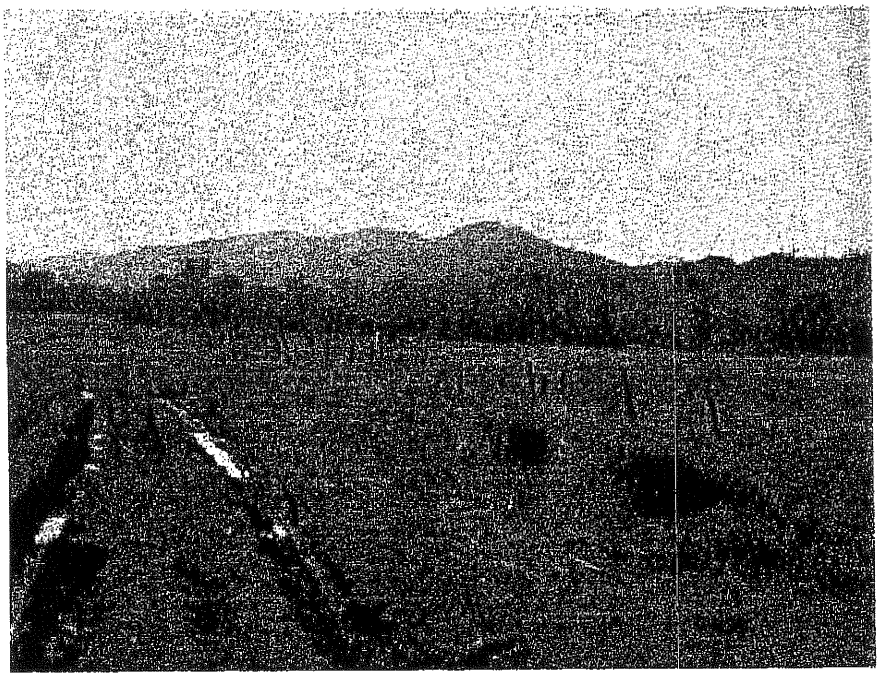


View of parcel 307-230-006

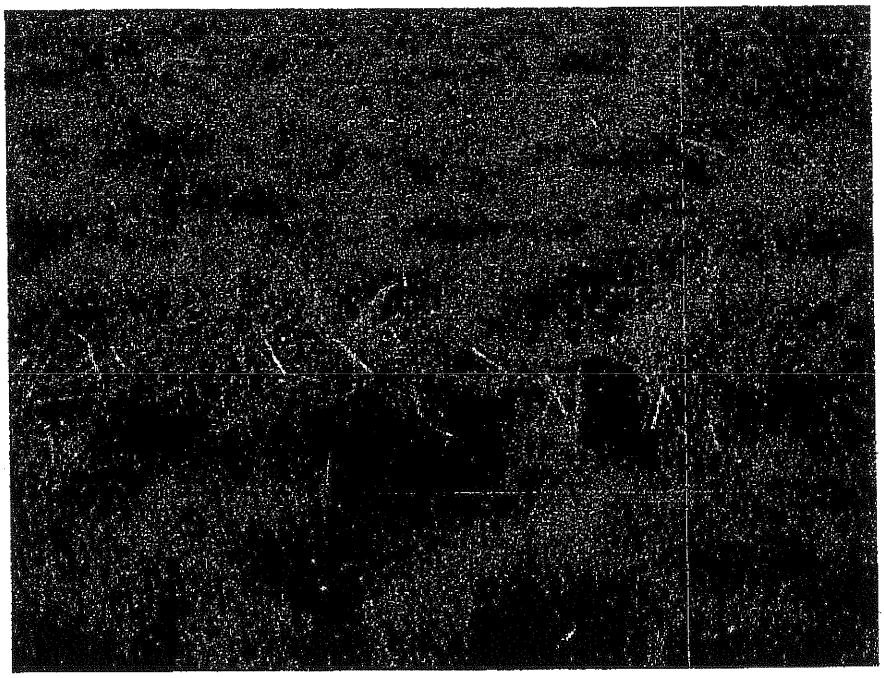


View looking east from parcel 307-230-008

PHOTOGRAPHS



View of the track traveling west from Wonderland Boulevard

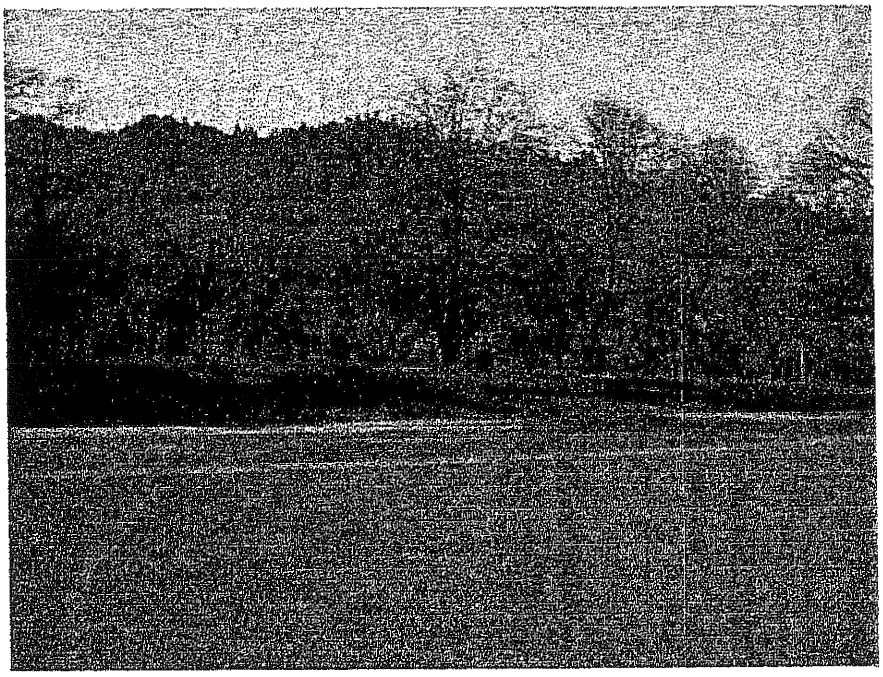


Typical wetland area

PHOTOGRAPHS



View from the I-5 interchange looking west



View from the I-5 interchange looking northwest

PHOTOGRAPHS

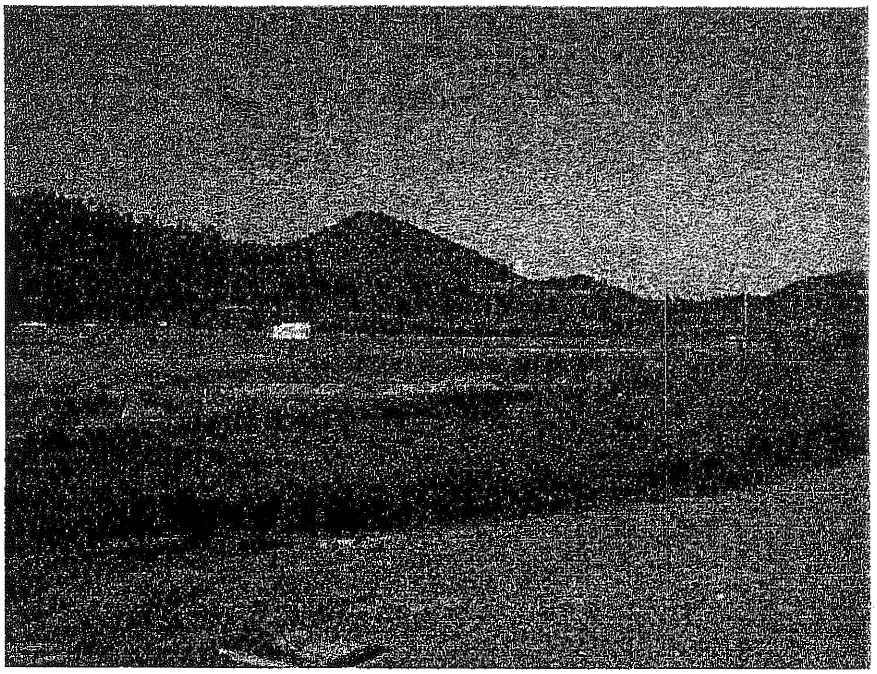


View of one of the streams that drain the site

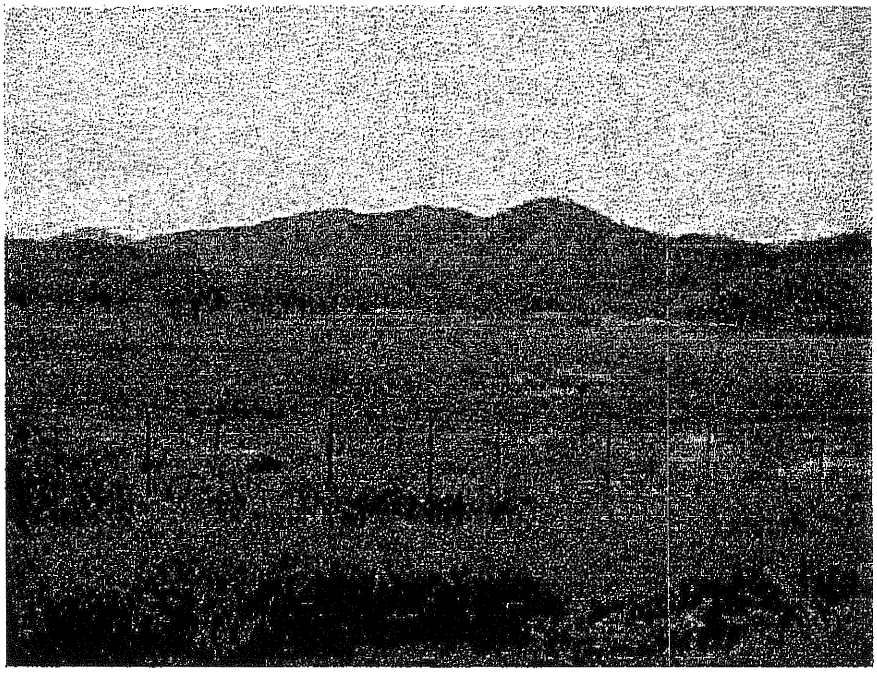


View of the track that crosses the site

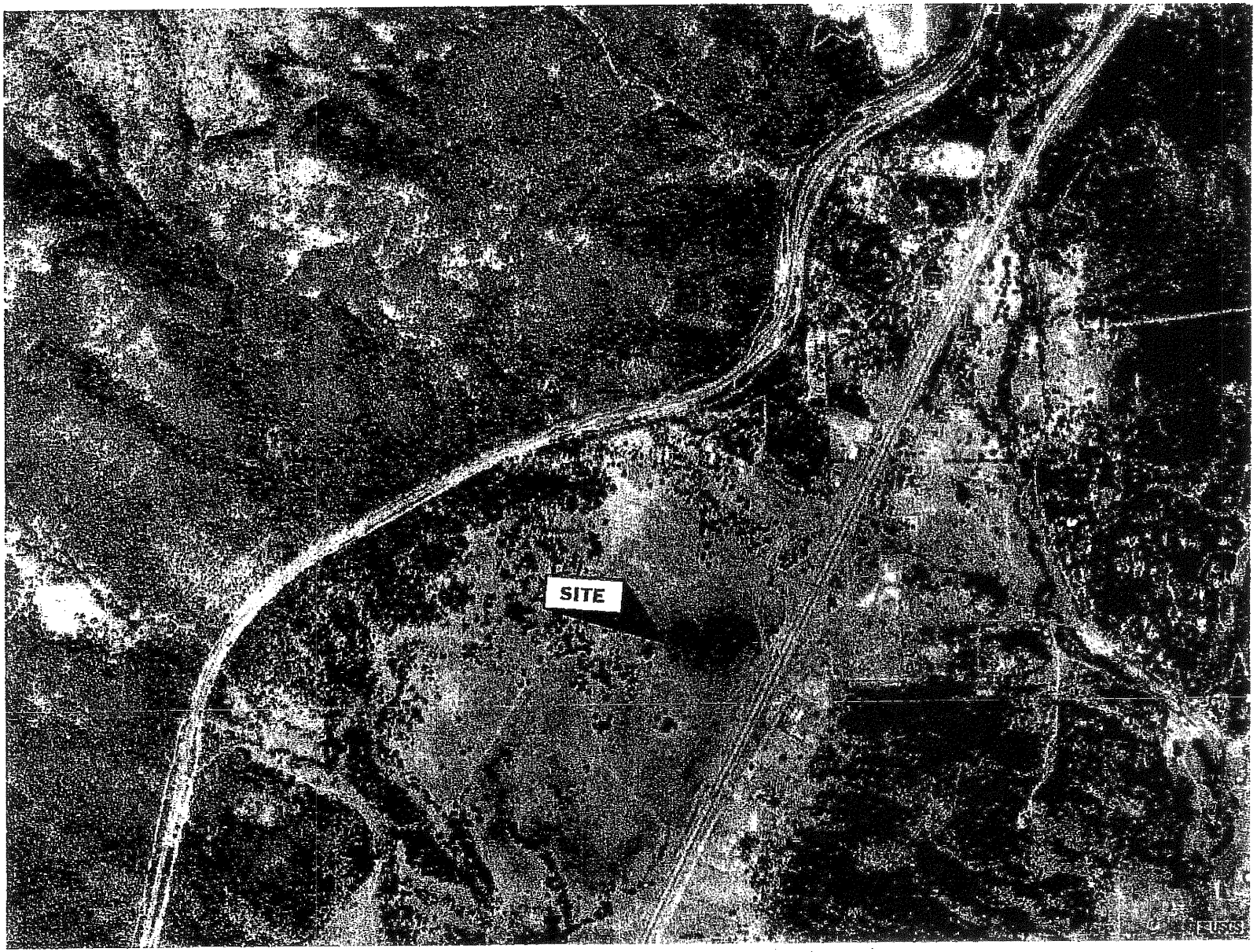
PHOTOGRAPHS



General view of the site looking northwest



General view of the site looking west



Aerial Photograph Mountain Gate Meadows

Appendix 4.9-1

ARCHAEOLOGICAL INVENTORY REPORT

ARCHAEOLOGICAL INVENTORY SURVEY

Mountain Gate Meadows Development Project,
c. 600-acres,
City of Shasta Lake, Shasta County, California.

CONFIDENTIAL – RESTRICTED CIRCULATION

This report contains sensitive information concerning archaeological sites and site locations. Do not include this report in publicly available documents.

Prepared for

Mountain Gate, LLC

Author

Sean Michael Jensen, M. A.

Keywords *for Information Center Use:*
Archaeological Inventory Survey, c. 600 acres, Shasta County, CEQA/NHPA, USGS Project City, Ca. 7.5' Quad.

November 16, 2012

GENESIS SOCIETY

ARCHAEOLOGICAL - HISTORICAL - CULTURAL RESOURCE MANAGEMENT SERVICES

ABSTRACT

The present archaeological inventory has been prepared for the Mountain Gate Meadows development project located within the City of Shasta Lake, Shasta County, California. The area of potential effects (APE) consists of a 600-acre property where a mixture of residential, commercial and infrastructure components are proposed, as well as two off-site areas which include a water storage and delivery system immediately west of the 600-acre property, and a new roadway connecting the southern portion of the 600-acres with Cascade Boulevard. Because cultural resources could be affected and since both state and federal agencies are involved, the present inventory accommodates both state law (per CEQA) and federal rules and regulations (per Section 106 of the National Historic Preservation Act).

A search of State data bases, including all records and documents available at the Northeast Information Center, consultation with Redding Wintu, consultation with the Native American Heritage Commission, and intensive-level pedestrian survey have resulted in identifying five prehistoric and two historic sites within the project area.

Extensive prior archaeological survey and site evaluations, coupled with the present project's re-examination effort and updated Native American consultation, support the following recommendations re. eligibility and site treatment:

Two of the prehistoric sites (CA-SHA-1082 and –1086) do not contain buried deposits and no surface features such as mortars, house pit depressions, petroglyphs, etc. Consequently, both of these prehistoric sites are recommended not eligible for the National Register under any of the relevant criteria.

Two project area sites (CA-SHA-1085 and –1822) contain buried deposits in the form of a midden and limited non-artifactual midden constituents. Based on the potential for a program of focused data recovery to acquire additional site dating information important in studies of regional settlement and land use patterns, it is recommended that these two sites retain limited data classes, not previously fully exploited, that render them eligible for the National Register under Criterion d). Recovery and analysis of these limited data classes as part of a program of data recovery would, it is also recommended, reduce project impacts to these sites to less than adverse levels. The recommended program of data recovery is detailed in the ***Treatment Plan*** contained in this report.

One project area site (CA-SHA-1823) contains buried deposits in the form of a midden associated with mortar holes and a petroglyph-bearing boulder. While this site has not been formally tested, dating of the deposit seems reasonably estimated and the midden has been well-defined on the basis of a 1994 program of shovel test pit excavation and other evaluative work. The site appears intact and not recently disturbed, and is recommended eligible under Criterion d) for research and information values, particularly since the midden is accompanied by features including especially the petroglyph. As well, this site may represent the ethnographic village of Simisbaki, assigned #55 in Guilford-Kardell and Dotta (1980:49). Lastly, Wintu representatives consulted commented that intact sites containing petroglyphs are becoming increasingly rare in the Redding area, with the petroglyph representing a feature of religious significance and signaling the possible presence of portable artifacts in the midden representing ceremonial activity and/or possible burials. Recommended treatment per the ***Treatment Plan*** in this report

is preservation, with implementation of a long-term monitoring plan to ensure that impacts to the site will not accompany proposed build-out of and subsequent activities within the project area.

Historic site CA-SHA-1824-H (a dilapidated ranch/residential complex) is not recommended eligible for the National Register under any of the relevant criteria. This site is not considered in the ***Treatment Plan*** in this report.

Historic site CA-SHA-1447-H (road corridor) within the project area is recommended as possessing qualities under Criteria a) and b) which contribute to National Register eligibility. However, the same segment is considered to have lost historic integrity re. original defining attributes (and thus eligibility per Criterion c). The absence of associated features and artifacts eliminates the potential of data recovery to contribute further to our understanding or appreciation of local or regional history, and thus this segment is not recommended eligible under Criterion d). Based on the premise that mitigative action/treatment has already been accomplished *de facto*, potential effects of the undertaking (build-out of the proposed project) are not considered adverse and therefore no preservation and no further treatment is recommended. This site is not considered in the ***Treatment Plan*** in this report.

As indicated above, extensive consultation with Redding Wintu occurred during previous survey and evaluative excavation work involving project area sites (in 1990-1994 and 2005). Consultation was updated during the present project by consulting with the Native American Heritage Commission that reports no sacred land listings within the project area, and Wintu representatives included on the NAHC consultation list. Extended consultation was undertaken with Mark Franco, Headman of the Winnemem Wintu Tribe. Mr. Franco indicated that the Winnemem Wintu Tribe is aware of prehistoric sites located both east and west of the project area, and further indicated that future correspondences regarding prehistoric resources within the subject property should be directed to Kelli Hayward of the Wintu Tribe of Northern California. As extensive consultation was previously undertaken with Kelli Hayward, and because her recommendations were incorporated into the present report, no additional consultation was undertaken.

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ATTACHMENTS

- Vicinity Map
- Archaeological Survey Area Map
- Records Searches from CSU-Chico
- Native American Heritage Commission Request Letter dated 10/26/10
- Native American Heritage Commission Response Letter dated 11/3/10
- Letters to Interested Native Americans listed by the NAHC.
- Extended Correspondences with Mark Franco.
- Site record forms for sites:
  - CA-SHA-1082
  - CA-SHA-1085
  - CA-SHA-1086
  - CA-SHA-1822
  - CA-SHA-1823
  - CA-SHA-1824-H
  - CA-SHA-1447-H

1. INTRODUCTION

Project Background

This report details the results of an archaeological inventory survey of approximately 600 acres of land located within the City of Shasta Lake, adjacent to the west side of Interstate 5, Shasta County, California. The proposed project is the creation of a mixed-use residential and commercial Planned Development within the City of Shasta Lake. Proposed residential development ranges from high density, multi-family housing to large-lot housing with densities between one and four lots an acre. Other land uses include retail and office commercial development, open space, parks and a fire station.

An entitlement application has been filed with the City of Shasta Lake to permit the development of residential lots and up to 35 acres of commercial/mixed-use development. In addition, the application proposes the development of neighborhood and community serving recreational uses, as well as substantial open space corridors designed to accommodate avoidance of the majority of waters of the United States within the project site. Full build-out of the project is anticipated to be phased and will likely take between 10 and 20 years.

The project also includes an internal circulation system, in the form of roads and trails, which link all of the uses in the proposed project and are designed to encourage walking and biking. The project's internal circulation system has been designed to conform to the site's existing topography. The roadway network has a number of different road widths and designs that are intended to minimize the amount of grading and pavement needed to serve the project. The trail system has also been designed to be located along biologically important areas such as drainages and wetlands, and at the base of slopes, to help limit the potential for adverse edge effects on jurisdictional waters. The trails are also designed to be both separated from roadways, and adjacent to roadways within the project boundaries.

The site is visible from Interstate 5 for much of its length but is accessed from the Mountain Gate interchange with Interstate 5 at the north end of the project site.

Off-site improvements include a new roadway from the southerly boundary of the site, extending south/southeast through the property previously owned by the Shasta Lake Redevelopment Agency, and connecting to Cascade Boulevard. This southerly connection is necessary to ensure public safety as a secondary access to the project site. Currently, the project site can be accessed from Wonderland Boulevard at the northeast section of the property. A new roadway will provide primary access to the project site via the Interstate5/Mountaingate Interchange.

While the property across which the new roadway must be constructed is owned by the project applicant, the property is outside of the City of Shasta Lake and is within the jurisdiction of Shasta County. Work on the roadway may require an encroachment permit and maintenance agreement between the City of Shasta Lake and Shasta County.

Extension of water and wastewater collection systems to the site will be required and will involve work in Cascade Boulevard and the new roadway extending from the Boulevard onto

the project site. These infrastructure extensions will follow major project circulation routes and are designed to limit the need for grading and site modification. The proposed project will also require construction of a water storage tank, and distribution system, to be located off-site, and situated on an elevated hill immediately west of the MGM property.

The proposed project, known as Mountain Gate at Shasta, will involve extensive physical disturbance to ground surface and sub-surface components and will therefore have the potential to impact any cultural resources that may be located within the Area of Potential Effects (APE). In this case, the APE consists of the 600-acre development property itself, as well as the two off-site components previously described. Evaluation of the project's potential impact to cultural resources must be undertaken in conformity with City of Shasta Lake rules and regulations, and in compliance with requirements of the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California CEQA Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines as amended).

As well, since the project would affect waters of the United States, the project proponent must meet requirements of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, and therefore, is seeking a permit from the U.S. Army Corps of Engineers, Sacramento District. Cultural studies must therefore also comply with federal guidelines, including in particular Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800), Section 2(b) of Executive Order 11593, Section 101(b)(4) of the National Environmental Policy Act, the Archaeological Resources Protection Act, and other rules and regulations.

Scope of Work

Compliance with CEQA requires completion of projects in conformity with the standards, guidelines, and principles outlined in the amended (October 1998) Guidelines, including in particular Section 15064.5. Compliance with Section 106 of the NHPA requires completion of projects in conformity with the standards, guidelines, and principles in the Advisory Council's Treatment of Archaeological Properties: A Handbook (1980), and Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (1983). Based on these rules, regulations and laws, the following specific tasks were considered an adequate and appropriate Scope of Work for the present archaeological inventory:

- Conduct a records search at the Northeast Information Center of the California Historical Resources Information System at CSU-Chico and consult with affected Native American representatives, the Native American Heritage Commission, and the Redding Museum. Collectively, the goals of the records search and consultation are to determine (a) the extent and distribution of previous archaeological surveys, (b) the locations of known archaeological sites and any previously recorded archaeological districts, and (c) the relationship between known sites and environmental variables.

- Conduct a pedestrian field survey of the project area. Based on the presence of high archaeological sensitivity throughout the 600-acre project area, a complete coverage, intensive pedestrian survey was considered appropriate. The purpose of the pedestrian survey is to ensure that previously recorded sites identified during the records search and

consultation are re-located and eligibility evaluations updated on the basis of existing conditions vis-à-vis site integrity. For previously undocumented sites discovered, the field survey would involve formally recording these on State DPR-523 forms. For both previously identified and newly identified sites, the level of field work would be sufficient to recommend measures designed to avoid, minimize or mitigate potential adverse effects of the proposed undertaking to any sites recommended eligible or potentially eligible for the National Register. The City of Shasta Lake subjected all of the residential and residential-related structures located within the off-site access road portion of the APE to examination/evaluation, and consequently, these components (structures) were not part of the present identification/evaluation.

- Upon completion of the records search, consultation and pedestrian survey, prepare an Archaeological Inventory Survey Report that identifies project effects and that includes an Historic Properties Treatment Plan for eligible or potentially eligible properties that might be affected by the undertaking.

The remainder of the present document constitutes the Final Report for this project, detailing the results of the records search and inventory survey and providing recommendations for treatment of properties that could be affected. All field survey procedures followed guidelines provided by the State Historic Preservation Office (Sacramento) and conform to accepted professional standards.

Location

The Mountain Gate at Shasta development property totals approximately 600 acres of land, as well as two off-site development areas, located within northern Shasta Lake City, adjacent to the west side of Interstate 5, Shasta County, California. Lands affected are located within a portion of Sections 19, 20 and 29 of Township 33 North, Range 4 West, as shown on the USGS Project City, California, 7.5' series quad (see attached ***Project Location Map***).

A number of important streams are located within this area north of Redding, including Moody Creek, Rancheria Creek and several unnamed ephemeral tributaries proceeding generally north-south through the project area. Additional streams in the vicinity include Churn and Salt Creeks to the west and southwest, and the Sacramento River located several miles west. These water courses were extremely important to the prehistoric and early historic occupants of the area.

Until recently, much of the land in this area remained largely undeveloped for residential and commercial use. During the past 20 to 25 years, however, the pace of development has increased dramatically, so that today much of the land in the vicinity, especially to the south, has been or is being developed for residential, commercial and related uses.

Based on examination of available topographic and other maps, but notwithstanding the effects of past and on-going land uses, the project area appeared to contain lands ranging from moderate to high in sensitivity for both prehistoric and historic-period sites and features.

2. EXISTING CONDITIONS

Several types of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within the project area. The information evaluated includes data maintained by the Northeast Information Center of the California Historical Resources Information System (CSU-Chico), and consultation with Wintu Tribe members, the Native American Heritage Commission and the Turtle Bay/Redding Museum. Also reviewed and considered prior to conducting field survey work were available published and unpublished documents relevant to regional environment, prehistory, ethnography, and early historic developments.

Northeast Information Center Records

The records of the Northeast Information Center (CSU-Chico) were examined for existing recorded prehistoric or historic sites (Walk-in Records Searches conducted October 27, 2010, I.C. File # W10-125, and August 6, 2012, I.C. File # 12-127, copies attached). These records indicate extensive prior archaeological survey, site recordation and excavation of select sites within the project area, as follows.

Previous Survey: Archaeological survey has been completed for all of the 600-acre project area. This work includes initial survey of the Mountain Gate Meadows project area by James Dotta (1981), followed by re-survey and site evaluation work by Jensen (1990, 1994, 2005, 2008). Furthermore, all of the off-site water tank and access road portion of the APE has been subjected to previous survey (Jensen 2006) which identified several historic properties, but none within the off-site portion of the APE (I.C. Report # 8378). Finally, Jensen (1996) conducted an archaeological survey of 13-acres which includes all of the off-site access road portion of the APE (I.C. Report # 1498). Jensen identified no historic properties within the 13-acre survey area. Additional archaeological surveys have been conducted on adjacent lands, although these other studies appear not to have extended into the present project area boundary.

Prehistoric and Historic Sites: To date, eight state site numbers have been assigned to cultural resources within the project area (six prehistoric sites and two historic sites). Two of these assigned numbers represent the same site recorded by James Dotta on two separate occasions; the site numbers originally assigned to this site include CA-SHA-1084 and –1822. The site number retained for on-going use is CA-SHA-1822. Therefore, the total number of sites within the project area for which State numbers have been assigned is seven (five prehistoric and two historic).

All five of the prehistoric sites within the project area have been subject to sub-surface testing via either formal testing or informal shovel test pits (sites CA-SHA-1085 and –1822 [Jensen 1990], CA-SHA-1823 [Jensen 1994] and sites CA-SHA-1082 and -1086 [Jensen 2008]). Site CA-SHA-1823 has been recommended significant by local Native Americans on the basis of the presence of petroglyphs (cupules).

The one historic site within the project area (CA-SHA-1824-H) has been subjected to detailed recording and extensive archival research (Mazzini in Jensen 1990). This historic

site collapsed and was then further affected by fire subsequent to the above referenced recordation and evaluation. Little integrity remains of the original built environment, and virtually all associative context has been lost.

Finally, one additional historic site is located within the project area. This site is CA-SHA-1447-H, an unrecorded segment of the historic Shasta Road, also known as Waughs Ferry Road and Buckeye Road. As will be noted below, the existence within the project area of this linear feature was determined during the records search by examining historic GLO Plats and early Shasta County maps, and the feature's route was also identified during the present field survey as a bulldozed and graded ranch access road.

Table 1 below summarizes project area sites in relation to previous testing work and recommendations offered to date as to significance per CEQA.

Table 1: Summary of Project Area Sites in Relation to Previous Testing and Significance/Eligibility Recommendations

SITE CA-SHA-XXXX	*TESTED/NOT TESTED*	*SIG./ELIGIBILITY*
-1082, surf. scatter	STP Tested	Not significant/eligible*
-1084, SAME AS CA-SHA-1822; CA-SHA-1084 NO LONGER USED		
-1085, midden, hab.	Tested	Not significant/eligible*
-1086, surf. scatter.	STP Tested	Not significant/eligible*
-1822, midden, hab.	Tested	Not significant/eligible*
-1823, midden, hab, petrog.	STP Tested	Significant/eligible, cult. values
-1824, historic site	Archive evaluation, mitig.	Not eligible, integrity destroyed
-1447-H, Shasta Road	Evaluated, Mazzini 1990	Not eligible, integrity destroyed, historic qualities lost to bulldozing & ranch use

* Note that "significance/eligibility" entries are consultant recommendations to date, per CEQA. As noted in the discussion above, sites in this category are being re-evaluated based on consideration of the accumulative effects of Shasta County site losses over the past decade, and on the basis of input received from updated Native American consultation.

Other Sources

In addition to examining the records at the Northeast Information Center at CSU-Chico, the following sources were also consulted while at the Information Center, or separately:

- The National Register of Historic Places (1986, Supplements to 10/10 and 8/12).
- The California Register of Historical Resources (2010 and 2012).
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1996).
- The California Points of Historical Interest (May 1992 and updates).
- The Office of Historic Preservation's Historic Property Data File (2010 and 2012).

- The Office of Historic Preservation's Determination of Eligibility (2010 and 2012).
- GLO Plats and Historic County Maps.
- Redding Wintu Representatives, including:
  1. Pit River Tribe of California.
  2. Redding Rancheria.
  3. Winnemem Wintu Tribe.
  4. Wintu Educational and Cultural Council.
  5. Wintu Tribe of Northern California.
  6. United Tribe of Northern California, Inc.
  7. Carol Sinclair.
  8. Matthew Root.
  9. Loretta Root.
- The Native American Heritage Commission, for Sacred Land Listings.
- Response from the Native American Heritage Commission dated November 2, 2010.
- The Redding Museum.
- Published and unpublished documents relevant to environment, ethnography, prehistory and early historic developments in the vicinity, providing a cultural context for assessing site types and distribution patterns for the project area (summarized below).

Environment: The Mountain Gate Meadows project is located several miles east of the Sacramento River at the northern-most end of the Sacramento Valley. The mountains of the North Coast Range rise to the west, the Klamath Mountains are to the north, the volcanic deposits of the Cascade Range to the east, and the remainder of the Sacramento Valley to the south. Structurally, the Sacramento Valley is a large, elongate, north-south trending, asymmetric trough. Fringing this trough along its mountain borders are dissected uplands which have been structurally deformed and which are underlain primarily by unconsolidated continental deposits of Pliocene and Pleistocene age. The resultant terrain ranges from gently rolling lands to dissected hills with relief of several hundred feet or more.

Annual precipitation is approximately 35 inches, most of which occurs as rainfall during the months of November through April. Warm, dry summer months have an average July maximum of over 100 F and winters exhibit an average January minimum in the mid-30s F (Klaseen and Ellison 1974:53-54, 155). Native valley oaks (*Quercus lobata*) occur throughout the project vicinity, particularly where pockets of deep soil have accumulated. As well, before impacts related to mining activity and the airborne pollution from turn-of-the-Century copper processing facilities on the west side of the Sacramento River, blue oak (*Q. Douglasii*), interior live oak (Q. *wislizenii*), digger pine (*Pinus sabiniana*), small patches of manzanita (*Arctostaphylow viscida*), and various annual grasses and forbes were even more abundant than today.

Major water courses within the Redding area supported dense riparian associations which were often separated from forest and chaparral associations by stands of live oak, dwarf interior live oak, manzanita, *Ceanothus* and redbud. These interface zones provided abundant resources and excellent habitat for numerous species of mammals and birds, many of which exploited several of these zones concurrently.

The environment of the project area has undergone some changes since the end of the Pleistocene. Paleoclimatic reconstructions by West (1983) suggest a shift from a warmer

period in which plant zones were ca. 300 meters higher in elevation and temperatures were 1.3-2.1 degrees C. warmer than at present, to the relatively cooler and more moist conditions prevalent today in which plant zones have shifted downward and southward (West 1983:3.20-3.21). This shift is believed to have occurred at around 2,500 to 2,800 years ago.

While the effects of long-term climatic change on environment and habitats are not fully assessed, there is no question that major environmental changes have occurred during very recent times. Biologically extractive practices during the past century-and-a-half have reduced soil nutrients in some areas, timber harvesting and livestock grazing have reduced the available biomass, and the elimination of the Indians' practice of annual burning has undoubtedly affected many of the primary ecological relationships which once existed within the Redding area. Combined with past mining, water diversion projects, recent urban expansion to the south, access road grading and vegetation clearing to improve pasture, there is no question that the environmental structure of this portion of Shasta County has in fact been significantly altered over the years.

Ethnography/Prehistory: At the time of Euroamerican contact, most of the western side of the Sacramento Valley north of about Suisun Bay was inhabited by Wintun-speaking people. This large group of Penutian stock was divided into a southern Patwin group, a central Wintun or Nomlaki group, and a northern Wintu stock. The northernmost group was further divided into nine sub-areas, with the project area being located within Redding (Keswick) Sub-group's territory (Du Bois 1935: Map 1).

Wintu subsistence was based on three main staples: deer, acorns and salmon. All three were abundant within the Redding area, although the latter two were available only seasonally. So crucial was salmon as a food resource to the Wintu and other groups of northern California that the availability of this food source has been used as an important variable in assessing prehistoric population levels (Baumhoff 1963) and is considered a major determinant of site distribution among various other California Indian groups (Chartkoff and Chartkoff 1975; Raven *et al*. 1984). Deer also constituted a major dietary staple, a food source which was both abundant and available essentially year-round. Lastly, acorns constituted the third primary staple of the Wintu, a food resource seasonally abundant as well as storable.

The available ethnographic information documents a pattern of land use, settlement and subsistence that was quite complex. The salmon runs, the locations of seasonally available big game (especially deer), and the distribution of acorn-yielding oak trees, which together supplied the primary staples, required major forays from the home base since all three were concentrated in different areas. This form of resource exploitation required not only that permanent villages be established, particularly along the Sacramento River and other major drainages, but that seasonal use be made of a wide variety of other habitat zones, where less-permanent villages/camps were established and special-purpose activities undertaken. In consideration of this fact, and supported by the results of previous survey work within the project area and on nearby lands, prehistoric site types for this area included the following:

- Surface scatters of lithic artifacts and debitage associated with dark brown to black "midden" deposits resulting from fairly substantial encampments. Within the project area and elsewhere around Redding, such sites are frequently located adjacent or close to perennial water sources, as along the project area's Rancheria and Moody Creeks.

- Surface scatters of lithic artifacts and debitage without associated middens, resulting from short-term occupation and/or specialized economic activities.
- Bedrock milling stations, including both mortar holes and metate slicks, located in areas where bedrock is exposed, particularly along stream channels.
- Petroglyphs, especially bedrock outcrops whose surfaces contain numerous "cupules".
- Isolated finds of aboriginal artifacts and flakes. Large, fine-grained basalt cobbles are frequently encountered along stream channels in the Redding area, and were often "assayed" in place resulting in isolated large cores and tabular flakes.

Based upon extensive archaeological excavations in the Redding area, a fairly long prehistoric sequence has emerged. This long sequence was apparently punctuated, and has in fact been largely defined, by several cultural introductions which may have coincided with population movements into the region. Specifically, the earliest occupants of this portion of northern California are believed to have been Hokan-speakers whose material culture closely resembled the Borax Lake and Mendocino Complexes assemblages dating to a similar time period. While population density was probably quite low during this period (c. 4,500 B.C. to A.D. 200), these people were widely distributed throughout the region and presumably were making use of at least portions of the Sacramento Valley floor and probably utilizing acorns. Large, wide-stemmed projectile points and manos and metates are frequently encountered artifact types.

Sometime between about A.D. 200 and A.D. 500, Penutian-speaking immigrants are believed, on the basis of linguistic (Whistler 1977) and other evidence, to have entered the region and initially disrupted but eventually to have displaced Hokan occupants in many areas. The Penutian subsistence pattern and related technology were, it has been hypothesized, more suited to the exploitation of a riverine environment and to more intensive and extensive use of bulbs and other plants. This was coupled with animal and fishing products more intensively processed with mortars and pestles, corner-notched and small stemmed projectile points more suited for use with bows and arrows, and a variety of other more specialized technological devices. The abundance of fish, clams, bulbs, tules, acorns and other resources, coupled with the Penutian penchant for more intensive and extensive exploitation of these items, are believed to have resulted in a rapid population increase which eventually resulted in the Penutians displacing the Hokan occupants from the Sacramento Valley floor and portions of the adjacent foothills and mountain ranges on both sides of the Sacramento valley. This process was still underway at the time of Euroamerican contact in the mid-19th century.

Historic Context: Historic evidence exists to document that some of the Spanish and Mexican expeditions may have come through and made brief stays within northern California. John Work's fur trapping expedition through central California in 1832-33, the best documented of the initial forays into the Redding area, introduced several communicable diseases to the Native inhabitants which turned out to be devastating to Wintu culture and society (Work 1945; Cook 1955).

The next major incursion by White men occurred during the Gold Rush period, which in this area began with Reading's 1848 discovery of gold south of Redding along Clear Creek. Mineral deposits along many of the streams in north Redding and streams located both to the east and west of the Sacramento River were intensively mined on a fairly small scale through

the end of the 19th Century. Just at the turn-of-the-Century, however, Shasta County began to experience accelerated population and economic growth as the mineral resource began increasingly to be mined with mechanized equipment. Hundreds of "wildcat" operations emerged to exploit the recently discovered, but low grade copper, gold and silver deposits. Mining stimulated the growth of other industries as well, and soon led to a burgeoning County population. Subsequently, during the 1930's, a number of dragline and bucket-line dredges were active in the Redding District, particularly along Clear Creek and Olney Creeks south of Redding and the present project area. Extensive drift mining was undertaken at various locales within the vicinity of Boulder and Sulphur Creeks, however, and within exposed areas above and on the east side of the Sacramento River within the general vicinity of the project area.

The early mining activity, coupled with subsequent copper mining within the Iron Mountain area west of the Sacramento River, water diversion and water storage projects along the Sacramento River, and contemporary urbanization north of Redding generally, have all impacted prehistoric and early historic sites in the region. The present land area has actually fared much better than other areas of the County, however, being located within a region that remained ranch land until relatively recently. While construction of Interstate 5 along the east side of the project area affected some lands within the Mountain Gate Meadows study area, most of the area has remained largely unaffected by historic through contemporary ranching and residential use.

3. CULTURAL INVENTORY

General

As indicated in the summary above under ***Northeast Information Center Records***, all of the project area has been subjected to intensive-level pedestrian survey. The initial survey effort was accomplished by Dotta (1981), and the methodology for that earlier survey is unknown.

Jensen (1990) conducted a complete re-survey of the property as well as test excavations at various sites located within the project property. The 1990 report's pedestrian survey was conducted in both late-1989 and early-1990 by Peter Jensen, William Shapiro and Sean Jensen. Intensive survey methods were accomplished by walking back and forth across the property with transect spacing set at 20 meter intervals for sensitive areas (i.e., stream courses, ridge lines, saddles and mid-slope benches. In areas considered less sensitive, transect spacing widened to between 40 and 50 meters.

In searching for cultural resources, the surveyors considered the results of background research and were alert for unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites. Trowel and boot scrapes were conducted approximately every 10 meters in order to visually inspect the surface and initial sub-surface soil conditions.

In 1994, Jensen conducted a Phase I examination of select cultural resources within the subject property. In addition, cursory pedestrian survey throughout the property, and intensive site boundary inspections were conducted. These efforts were undertaken by Peter Jensen and Sean Jensen.

Jensen (2005) also conducted additional field inspections, amounting to a combination of cursory and intensive pedestrian survey, throughout the subject property. These inspections occurred in March 2005, and included Wintu representative, Kelli Hayward.

The most recent field inspection of the larger 600-acre land area was undertaken by Sean Michael Jensen, M.A., on November 1, 2010, during which site conditions and the project area generally were found to remain essentially as described in existing survey and evaluative reports.

Finally, on October 12, 2012, intensive pedestrian survey was conducted for two off-site portions of the APE. Located within the southeast quarter of Section 21 is a proposed water storage tank and access road. This portion of the APE consists primarily of brush-covered hills strewn with contemporary trash, and evidence of tree and brush removal and limited fire suppression activities. A land area located within the southwest portion of Section 29 contains the potential for multiple routes connecting Cascade Boulevard with the project area. This land area consists primarily of residential parcels, several of which were subjected to demolition of the past decade. All of the built environment in this latter area was not included in the present intensive pedestrian survey, identification and evaluation efforts.

Mr. Jensen is a professional archaeologist, with 26 years experience in California archaeology, who meets the Secretary of Interior's Standards for Professional Qualification, as demonstrated in his inclusion on the California Historical Resources Information System's list of qualified consultants.

Specific findings with respect to sites present and site status/condition are described below (site records for project area sites are attached).

Prehistoric Sites

CA-SHA-1082: This site was initially encountered by Dotta and Brott in 1981 in conjunction with initial surveys for proposed long-term residential development for the proposed Mountain Gate Meadows development. The site was described a "lithic scatter" extending approximately 40 by 55 meters flanked by creeks on both sides, containing no formed artifacts and no evidence of subsurface accumulation but consisting solely of "crude waste flakes and cores" (Dotta and Brott 1981 Archaeological Site Record on file at the Northeast Information Center, CSU-Chico). Renewed interest in proposed residential development resulted in Jensen conducting additional survey in the area of the site and re-recording this site in 1989 (Jensen 1989 Archaeological Site Record update on file at the Northeast Information Center, CSU-Chico). Between 1981 and 1989, substantial ground disturbing impacts occurred to this site and environs in conjunction with road grading, brush clearing, and tree removal during preliminary planning and mapping for the proposed Mountain Gate Meadows project under new (1989) ownership. As a consequence, much more of the ground surface was exposed by 1989, and the Jensen re-survey and re-recording of this site expanded the site boundary to approximately 300 meters in length (north-south) by c. 65 meters in width, covering an overall surface area of approximately 15,000 square meters.

While the 1989 field survey extended the site boundary, observed cultural materials and densities were roughly the same as those made by Dotta and Brott in 1981 – evidence of prehistoric activities at this location consisted solely of a very light density surface scattering of basalt, chert and obsidian flakes and occasional cores, with surface density varying from 1-3 items per 100 square meters, to 1 item per 200 square meters. As in 1989, no features were observed – e.g., no house pit depressions, petroglyphs, rock alignments, bedrock milling stations. As well, no evidence of a subsurface component was observed, nor indications that a charcoal-stained or otherwise "dark" midden had accumulated within the site boundary.

With the objective of further evaluating the previous researchers' observations concerning the lack of midden or other subsurface accumulation at this site, a program of Shovel Test Pit (STP) excavation was undertaken in 2008.

A total of thirty Shovel Test Pits (STPs) were excavated throughout the entire site area. Each 50-cm square STP was excavated in arbitrary 10-cm increments, with excavated depths ranging from 30-50 cm. All excavated soil was passed through 1/4 mesh screen in order to determine the presence/absence and depth of any subsurface-occurring cultural material encountered, with the additional objective of characterizing the general age of any deposit assuming that diagnostic implement types might be encountered.

Fifty-eight (58) prehistoric artifacts were identified within the thirty STPs excavated. Materials recovered from the STPs consisted primarily of basalt (31), obsidian (21) and chert (6) waste flakes and cores between the surface and 10 cm depth (38 of the 58 items) and from 10 through 50 cm depth. (20 of the 58 items).

The data from excavation may be further summarized as follows:

- Volume of soil excavated: approximately 2.575 cubic meters.
- Recovery rate for prehistoric items: approximately 23 items per cubic meter based on the total recovery of 58 items.
- Number of formed prehistoric artifacts per cubic meter: Zero.
- Number of formed prehistoric artifacts from the surface: Zero.

Based on both surface observations and STP results, this site does not contain a subsurface cultural component.

CA-SHA-1085: Originally recorded by Dotta in 1981 and subsequently re-recorded by Shapiro and Jensen in 1989, this site consists of a prehistoric occupation locale located approximately 60 meters north of the confluence of Moody Creek with an unnamed ephemeral stream course, immediately south of a large knoll or hill. The site extends approximately 135 meters in length by 90 meters in width, and consists of basalt, chert and obsidian surface-occurring lithics, a midden deposit identifiable as a well-defined dark, "greasy-textured" soil, and one possible house pit depression. Disturbance to the surface and subsurface components of the site have accompanied cattle grazing and ranch road grading.

In order to more accurately establish the extent of the midden, Jensen implemented a program of surface artifact evaluation and subsurface excavation units. Five 1-m-sq units were placed within the midden and one unit was excavated within the "pit" feature within the

southern portion of the site. Midden depth averaged less than 40 cm of primary deposit, with deeper pockets at rodent holes and following oak tree roots. Excavation yielded a total of 673 items from the six units excavated, a very low recovery rate (low artifact density) when compared with other Late Period habitation locales in this part of Shasta County. Chipped stone tools were represented by 43 of the 673 recovered items, again a fairly low density of formed tool types, although 12 of these 43 items were projectile points, with all of the classifiable specimens being Gunther Series forms (Late Period/Redding Aspect) (see Figure 4, p. 21, in Jensen 1990). The single excavation unit placed within the "pit" feature at the site (Unit # 5E) suggested that this feature is recent and contemporary, and does not represent the remains of a semi-subterranean dwelling feature.

Similar results were obtained during excavation at nearby CA-SHA-1822. Both of these sites appear to represent single-component, Late Period special use areas with a restricted range of utilitarian tool types, including both chipped and ground stone implements. Neither site yielded significant faunal bone or other dietary remains, a finding that contrasts sharply with results obtained from numerous other Redding area sites that are believed to represent primary habitation locales. Debitage is dominated by interior flakes of obsidian, another indicator of Late Period occupation. Finally, the absence of significant quantities of fire-cracked rock (and mortar holes) suggests that intensive additional food processing and/or basket cooking may not have occurred, another finding consistent with the conclusion that site CA-SHA-1085 and –1822 both represent special-use areas likely linked with primary habitation elsewhere, perhaps at another nearby site – CA-SHA-1823.

CA-SHA-1086: This site was initially encountered by Dotta and Brott in 1981 in conjunction with initial surveys for proposed long-term residential development for the proposed Mountain Gate Meadows development. The site was described a "thinly distributed lithic scatter extending approximately 30 by 80 meters, containing no formed artifacts and no evidence of subsurface accumulation (Dotta and Brott 1981 Archaeological Site Record on file at the Northeast Information Center, CSU-Chico). Renewed interest in proposed residential development resulted in Jensen conducting additional survey in the area of the site and re-recording this site in 1989 (Jensen 1989 Archaeological Site Record update on file at the Northeast Information Center, CSU-Chico). Between 1981 and 1989, substantial ground disturbing impacts occurred to this site in conjunction with extensive road grading, brush clearing, and tree removal during preliminary planning and mapping for the proposed Mountain Gate Meadows project under new ownership. As a consequence, much more of the ground surface had been exposed by 1989 and/or cultural materials had been mechanically distributed over a wider area, and as a consequence the Jensen re-survey and re-recording of this site expanded the site boundary to approximately 425 meters in length (northwest-southeast) by c. 45 meters in width, covering an overall surface area of approximately 17,000 square meters.

While the 1989 field survey extended the site boundary, observed cultural materials and densities were roughly the same as observations made by Dotta and Brott in 1981 – evidence of prehistoric activities at this location consisted solely of a very light density surface scattering of basalt, chert and obsidian flakes and occasional cores, with surface density varying from 1-3 items per 100 square meters, to 1 item per 200 square meters. In addition to the flakes and occasional basalt cores, the 1989 survey identified a single obsidian Gunther Series projectile point fragment, and a large chert point tip fragment. As in 1989, no features

were observed – e.g., no house pit depressions, petroglyphs, rock alignments, or bedrock milling stations. As well, no evidence of a subsurface component was observed, nor indications that a charcoal-stained or otherwise "dark" midden had accumulated within the site boundary.

With the objective of further evaluating the previous researchers' observations concerning the lack of midden or other subsurface accumulation at this site, a program of Shovel Test Pit (STP) excavation was undertaken in 2008.

A total of thirty Shovel Test Pits (STPs) were excavated throughout the entire site area. Each 50-cm square STP was excavated in arbitrary 10-cm increments, with excavated depths ranging from 30-50 cm. All excavated soil was passed through 1/4 mesh screen in order to determine the presence/absence and depth of any subsurface-occurring cultural material encountered, with the additional objective of characterizing the general age of any deposit assuming that diagnostic implement types might be encountered.

Forty-five (45) prehistoric artifacts were identified within the thirty STPs excavated. Materials recovered from the STPs consisted primarily of basalt (27), obsidian (9) and chert (9) waste flakes and cores between the surface and 10 cm depth (26 of the 45 items) and from 10 through 40 cm depth. (19 of the 45 items).

The data from excavation may be further summarized as follows:

- Volume of soil excavated: approximately 2.625 cubic meters.
- Recovery rate for prehistoric items: approximately 17 items per cubic meter based on the total recovery of 45 items.
- Number of formed prehistoric artifacts per cubic meter: Zero.
- Number of formed prehistoric artifacts from the surface: Two projectile point fragments.

Based on both surface observations and STP results, this site does not contain a subsurface cultural component.

CA-SHA-1822: Originally recorded by Dotta in 1981 as site CA-SHA-1084 and -1822, and subsequently re-recorded by Shapiro and Jensen in 1989 as CA-SHA-1822, this site consists of a prehistoric occupation locale located adjacent to the west bank of Moody Creek. The site extends approximately 130 meters in length by 45 meters in width, and consists of basalt and obsidian lithics, a midden deposit, and a possible house pit depression. In late 1989, the property owner conducted limited tree and brush removal throughout the subject property, resulting in extensive damage to site CA-SHA-1822. Bulldozer scars and other ground disturbing activities within the site boundary were noted by Jensen (1990).

In order to more accurately establish the extent of the midden deposit and the potential significance of the site per CEQA, Jensen implemented a program of surface artifact evaluation and subsurface excavation units. Five 1-m-sq units were placed within the midden area, with excavation indicating an average depth of approximately 40 cm of primary deposit, with deeper pockets at rodent holes and following oak tree roots. Approximately one half (west half) of the entire midden had been substantially bulldozed and removed from this site, confirmed by the results obtained within two of the five units excavated.

Excavation yielded a total of 382 items from the five units excavated, a very low recovery rate (low artifact density) when compared with other Late Period habitation locales in this part of Shasta County. Chipped stone tools were represented by 11 of the 382 recovered items, again a very low density of formed tool types, with 4 of these 11 items being projectile points. Three of the classifiable specimens are Gunther Series forms (Late Period/Redding Aspect) (see Figure 7, p. 24, in Jensen 1990), with the fourth example representing a small stemmed artifact. All were produced from obsidian. No ground stone food-processing implements are represented.

As noted above in the discussion under CA-SHA-1085, both CA-SHA-1085 and –1822 produced similar results: both sites represent single-component, Late Period special use areas with a restricted range of utilitarian tool types, including both chipped and ground stone implements at –1085 only, with no ground stone implements recovered from -1822. Neither site yielded significant faunal bone or other dietary remains, while debitage at both sites is dominated by interior flakes of obsidian, another indicator of Late Period occupation. Finally, the absence of significant quantities of fire-cracked rock at both sites suggests that intensive additional food processing and/or basket cooking may not have occurred, a finding consistent with the conclusion that site CA-SHA-1085 and –1822 represent special-use areas likely linked with primary habitation elsewhere, perhaps at nearby site CA-SHA-1823.

CA-SHA-1823: Originally observed but not formally recorded by Dotta in 1981, subsequently formally recorded by Jensen in 1989, this site consists of a prehistoric occupation locale located adjacent to the west bank of an unnamed perennial stream course which is tributary to Rancheria Creek. The site extends approximately 130 meters in length, averages about 30 meters in width, and is recognizable on the basis of basalt and obsidian surface-occurring lithics, a midden deposit, a bedrock mortar (hopper), and approximately 200 petroglyph cupules. Based on information reviewed at the Redding Museum in 1989, this site may represent the ethnographic village of Simisbaki, an unrecorded locale assigned #55 in Guilford-Kardell and Dotta (1980:49).

As part of the site recordation process in 1989, Jensen also implemented limited shovel test pit excavation in order to more accurately define the sub-surface limits of the cultural deposit. Visitation to the site by Wintu representatives in 1989-1990 in conjunction with testing at sites CA-SHA-1085 and –1822 resulted in a recommendation that this site, possibly visited and documented ethnographically and containing a petroglyph, represented a resource of traditional cultural value. The site was re-visited with Kelly Hayward of the Toyon-Wintu Tribe on March 8, 2005 in conjunction with proposed development activities at that time.

Historic Sites

CA-SHA-1447-H: This site represents the general route of the wagon (toll) road (Sacramento River Road) between Old Shasta and Oregon. The road was originally constructed in 1853 and utilized as a toll road, first historically recorded by Magee in his 1862 "Official Map of Shasta County," wherein Magee stated, "After the Sacramento River Trail [CA-SHA-1447-H] was opened in the late 1850's, the main road from Shasta north to Oregon passed through Buckeye." The road through Buckeye (the present historic site) continued to be "the main Pacific Highway north for many years" after the county seat was moved from Shasta to Redding (Hiatt 1974:18). The Buckeye Road, as it was also known,

was utilized as a postal route until at least 1884 to serve post offices north of Redding, including Buckeye and Mountain Gate, with the latter being located a short distance north of the present project area. In 1883, the Southern Pacific Railroad was extended north of Waugh's Ferry, following the west side of the Sacramento River and then up the Sacramento River Canyon. With the construction of Shasta Dam in the early 1950's, the Southern Pacific Railroad was re-routed to the east, where it partially followed the old California-Oregon Trail route (Peterson 1965). These two historic roadways – the California-Oregon Trail route and the Sacramento River Trail or site CA-SHA-1447-H – originally merged with one another at Mountain Gate, which is located approximately 1/2 mile northeast of the recorded segment of CA-SHA-1447-H within the project property.

The 2005 field inspection involved examination of that segment located within the project area. Here the roadbed averages 12 feet maximum width, with no residual historic features remaining (such as two-track ruts, historic trash scatters, etc.). In fact, all of old road segment within the present project area has been graded on multiple occasions over the past century, and utilized in ranching operations. Very recent and non-ranch use of the alignment has involved off-road vehicle activity. "New" alignments parallel portions of what appears to be the original road route, where flooding has made portions of the original corridor impassable.



The **photograph** above illustrates what remains of this site, clearly documenting that none of the original historic attributes remain except for the general routing of the alignment itself.

CA-SHA-1824-H: This site was recorded by Jensen and Shapiro in 1989 and evaluated by historian Joe Mazzini (Mazzini in Jensen 1990). The site represents an historic through contemporary residence and ranch complex, originally (or at least at the time of recordation) containing nine features, including a single-story residence and associated garages, barns, sheds, corrals, etc. Most of the features are collapsed or partially collapsed and/or burned or

partially burned. Historian Joe Mazzini completed a thorough evaluation of the historic origins and associations of the complex, including examining records at Shasta County and interviewing four informants with first-hand knowledge of the history of construction and use of the property.

Based on Mazzini's research, an earlier residence located approximately one hundred feet from the existing complex was constructed in 1906, but during the 1940's was dismantled, with the upstairs and all porches removed and the lower section re-located, substantially remodeled, and erected at the present location of Feature A residence. The original 1906 residence had been built by James J. Murphy, who acquired a portion of the present project area and moved to this location in 1906 following sale of his cattle ranch at Montgomery Creek, Shasta County. The new Murphy cattle ranch operation was established within the present project area lands, but lasted only through 1921 at which time Murphy sold out to Rodriguez, who lost the property to Barner in a default proceeding filed with in the Shasta County Court.



The entire history of occupancy and ownership at this location is documented in Mazzini's report. None of the occupants, beginning with J.S.P. Bass in 1872 who brought the actual land title up to date in his name (script patent) through Fred Peri (who acquired the property in 1976) whose estate retained an interest in the property, are known to have been especially important in local or regional history. Perhaps the most "prominent" of the property's owners was its first owner, J.S.P. Bass, who settled in Shasta County in 1849 and who operated a freight pack train between Shasta (historic "Old Shasta") and Scott Valley in Siskiyou County. However, elements of the built environment associated with Bass' operation was located at Mountain Gate, located approximately one mile north-northeast of site CA-SHA-1824-H and known as Bass Station. This location, well outside the boundaries

of site CA-SHA-1824-H, was along the historic California-Oregon Trail, subsequently partially built over by the Southern Pacific when the railroad was re-routed around Shasta Dam and Shasta Lake (Peterson 1965). The **photograph** above shows the current condition of CA-SHA-1824-H, with most of the features resembling the condition of the residence.

4. NATIVE AMERICAN CONSULTATION

As indicated in previous discussion, earlier survey (1989) and the program of archaeological testing (1990) at two of the project area sites proceeded in consultation with local Wintu representatives. Mr. Leslie Philpot monitored the program of excavation and visited project area sites at this time, concurring with the conclusions and recommendations for further treatment for the five prehistoric sites within the project area. Essentially, the conclusions regarding significance and recommendations for further treatment of prehistoric sites as reviewed with the Wintu representative in 1990 are summarized below in Table 2.

Table 2: Summary of Significance/Eligibility for Prehistoric Sites, and Recommended Site Treatment, per Previous (1990) Consultation with Wintu.

SITE CA-SHA-XXXX	***Rec. Eligibility***	***Treatment***
-1082, surf. scatter	Not eligible	Shovel test. If subsurface deposit is present, then reconsider eligibility.
-1085, midden, hab.	Not eligible	Monitor initial construction impacts.
-1086, surf. scatter	Not eligible	Shovel test. If subsurface deposit is present, then reconsider eligibility.
-1822, midden, hab.	Not eligible	Monitor initial construction impacts.
-1823, midden, hab, petrog.	Eligible	Impact avoidance.

As also noted in previous discussion, the two prehistoric sites tested in 1990 (CA-SHA-1085 and –1822) were recommended not significant per CEQA (Jensen 1990), although this recommendation was re-considered in the 2005 study in relation to updated Native American consultation. The remaining three prehistoric sites were, in 2005, untested. Two of these (sites CA-SHA-1082, –1086) appeared likely not to contain any accumulated subsurface cultural material and few if any diagnostic artifacts and no features; proposed shovel test pit evaluation of these long ridge-top surface scatters was considered appropriate as an evaluative measures designed to finalize a determination as to eligibility. The remaining prehistoric site (CA-SHA-1823) has been recommended important by local Native Americans on the basis of the presence of petroglyphs (cupules); this same site has been subjected to shovel test pit evaluation as a result of which site boundaries and midden distribution have been well established (Jensen 1994).

In 2005, Kelli Hayward of the Wintu Tribe and Toyon-Wintu Center agreed to participate in a field inspection involving all five prehistoric sites identified within the project area. This field inspection was provided by Sean M. Jensen on March 8, 2005, during which site sketch maps were utilized to inspect sites and to evaluate existing conditions re. integrity and other site attributes.

Speaking for local Wintu representatives, the Wintu Tribe and Toyon-Wintu Center agreed with recommendations contained in the 2005 report's ***Treatment Plan*** for the project area's five prehistoric sites. The treatment proposed in the 2005 report was based on then current assessments of eligibility or potential eligibility, and was essentially that outlined above in Table 2.

In 2008, partial implementation of the 2005 treatment plan was undertaken. As noted in the site descriptions (above), two sites (CA-SHA-1082 and -1086) were subjected to shovel test pit (STP) work which resulted in a recommendation that neither site is eligible for inclusion on the National Register of Historic Places, nor significant per CEQA.

In order to update Native American consultation, the Native American Heritage Commission was contacted via letter request. The Native American Heritage Commission indicated that there are no Sacred Land listings for the project area or adjacent lands (response dated November 3, 2010, attached). The contact list from the Native American Heritage Commission included the following individuals and groups, all of whom were contacted and requested to supply any information they might have concerning prehistoric sites or traditional use areas within the project area:

- Pit River Tribe of California.
- Redding Rancheria.
- Winnemem Wintu Tribe.
- Wintu Educational and Cultural Council.
- Wintu Tribe of Northern California.
- United Tribe of Northern California, Inc.
- Carol Sinclair.
- Matthew Root.
- Loretta Root.

Written correspondences were mailed to these individuals/groups/tribes on November 7, 2010. To date, only one response has been received. On November 16, 2010, Mark Franco, Headman of the Winnemem Wintu Tribe, responded via email, indicating that the Tribe would plot "assets" onto the provided usgs map. A follow-up response from Mr. Franco indicated that the Winnemem Wintu Tribe is aware of prehistoric sites located both east and west of the project area, and further indicated that future correspondences regarding prehistoric resources within the subject property should be directed to Kelli Hayward of the Wintu Tribe of Northern California. To date, no additional responses have been received. As no newly identified, prehistoric cultural resources were encountered during the pedestrian survey of both off-site project components, no additional Native American consultation was undertaken.

5. ELIGIBILITY RECOMMENDATIONS

General

Sites identified within the project area have been evaluated for significance in relation to CEQA significance criteria and eligibility per the National Register of Historic Places.

Important cultural resources, per CEQA, are determined in relation to criteria specified in Section 15064.5 of the amended CEQA Guidelines. These criteria suggest that an "important archaeological resource" is one which retains essential integrity of design, materials, workmanship, location and associative context, and which:

a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
b) Is associated with the lives of persons important in our past.
c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
d) Has yielded, or may be likely to yield, information important in prehistory or history.

Important cultural resources, per the National Register of Historic Places, are those prehistoric and historic sites, districts, buildings, structures, and objects, as well as properties with traditional religious or cultural importance to Native Americans, which are listed, or are eligible for listing, on the National Register of Historic Places (NRHP) ("historic properties"), according to the criteria outlined in 36 CFR 60.4. An historic property must possess essential integrity of location, design, workmanship, feeling, and association, and meet at least one of the following criteria:

a) Associated with events which have made significant contributions to the broad patterns of the history of the United States.
b) Associated with the lives of people significant in United States history.
c) Embody the distinctive characteristics of a type, period, or method of construction; or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction.
d) Has yielded, or is likely to yield, information important in prehistory or history.

With the Amended CEQA Guidelines, CEQA and the NRHP criteria are now quite similar in their consideration of the qualities and attributes of archaeological sites that might render them significant or eligible. In the discussion below, the criteria for both CEQA and the National Register are combined in assessing significance/eligibility.

Application of the Criteria to Five Prehistoric Sites

Specific application of the criteria to the five prehistoric sites within the project area yields the following recommendations. Sites evaluated are grouped in the discussion below under Criterion d), as follows: lithic scatters subjected to shovel test pit examination (CA-SHA-1082 & –1086); tested special-use locales (CA-SHA-1085 & –1822); shovel test pit examined habitation locale with petroglyph (CA-SHA-1823).

a) The five prehistoric sites are not associated with specific events which have made significant contributions to the broad patterns of the history of California or the United States, and these five sites are not recommended eligible based on Criterion a).

b) The five prehistoric sites are not associated with people significant in United States or California history, since there is no way to determine the individuals responsible for

creation of the sites, on the basis of the physical evidence that remains at them. These sites are not recommended eligible per Criterion b).

c) Based on existing inventory data maintained by the Northeast Information Center at CSU-Chico, there are a large number of records on file for prehistoric lithic scatters and habitation locales that essentially duplicate the attributes present at these five sites. Such components and the physical remains which comprise these sites are thus not considered rare or underrepresented in the existing California State inventory for the County in general or the project area in particular, nor do these sites represent a "... distinctive type..." or "...a distinguishable entity whose components may lack individual distinction." These sites are not recommended eligible per Criterion c).

d) Archaeological sites containing buried cultural deposits related to Native American use typically document protracted habitation and/or performance of a range of domestic activities. For these reasons, further research at such sites frequently has the potential to expand our understanding of local and regional prehistory in various research domains, and such sites are therefore routinely considered eligible for the National Register under Criterion d).

Shovel Test Pit Examined Lithic Scatters, CA-SHA-1082 and –1086: As noted in the site descriptions, above, neither of these prehistoric sites contain buried deposits and neither possess surface features such as mortars, house pit depressions, petroglyphs, etc. Sites CA-SHA-1082 and –1086 are both extensive surface scatters of basalt flakes and occasional cores associated with narrow but well-defined ridges flanking stream margins. Moreover, flake/core density is very low, within portions of both sites being no more than about 1 or 2 flakes per 100 square meters of surface area. Shovel and trowel probes have been placed throughout the site boundaries, initially at the time of recording in 1989-1990, and again in 2005 and 2008. The 2008 shovel test pit program resulted in the recovery of 58 and 45 items, respectively. Considering the volume of material excavated, the sites produced 23 and 17 items per cubic meter, respectively. The majority of these artifacts were recovered from the surface and upper layers excavated, with the conclusion that neither of these sites contains a subsurface cultural component. Based on these findings, neither of these sites are recommended eligible per Criterion d).

Tested Special Use Locales, CA-SHA-1085 and –1822: Two project area sites contain buried deposits in the form of a midden and limited non-artifactual midden constituents (poorly preserved animal bone). Sites CA-SHA-1085 and -1822 were subjected to test unit excavation in 1989-1990, and based on results of that evaluation (see discussion above, under description of ***Prehistoric Sites***), both were recommended not significant per CEQA on the grounds that both had suffered substantial disturbance to surface and subsurface components, no features were present, artifact types encountered were narrow in range and very low in density, and both appeared essentially duplicative of existing information taken from much better preserved sites relevant to the Late Period in the Redding area (Jensen 1990). However, this earlier recommendation is here revised, in part on the basis of prehistoric site losses in the region during the past two decades and in part on the basis of consultation with Wintu representative Kelli Hayward.

Based on the potential for a program of focused data recovery to acquire additional site dating information important in studies of regional settlement and land use patterns, it is recommended that these two sites retain limited data classes, not previously fully exploited, that render them eligible for the National Register under Criterion d). Recovery and analysis of these limited data classes as part of a program of data recovery would, it is also recommended, reduce project impacts to these sites to less than adverse levels. The recommended program of data recovery is detailed below in the ***Treatment Plan*** section of this report.

Shovel Test Pit Examined Habitation Locale, CA-SHA-1823: One project area site contains buried deposits in the form of a midden associated with mortar holes and a petroglyph bearing boulder. Site CA-SHA-1823 has not been formally tested, but the color and texture of the midden, coupled with the presence of mortars and a boulder outcrop containing a large number of cupules ("rain rock", petroglyph) appears clearly to represent Late Period occupation. While testing has not been undertaken, dating of the deposit, as indicated above, seems reasonably estimated and the midden has been well-defined on the basis of a 1994 program of shovel test pit excavation and other evaluative work. The site appears intact and not recently disturbed, and is recommended eligible under Criterion d) for research and information values, particularly since the midden is accompanied by features including especially the petroglyph. Moreover, the Wintu representative has commented that intact sites containing petroglyphs are becoming increasingly rare in the Redding area, with the petroglyph representing a feature of religious significance and signaling the possible presence of portable artifacts in the midden representing ceremonial activity and/or possible burials. Recommended treatment per the ***Treatment Plan*** in this report is preservation, with implementation of a long-term monitoring plan to ensure that impacts to the site will not accompany proposed build-out of and subsequent activities within the project area.

Application of the Criteria to Historic Site CA-SHA-1824-H

Specific application of the criteria to historic site CA-SHA-1824-H yields the following recommendations.

a) & b) This site represents an historic through contemporary residence and ranch complex, containing features linked with different owners, with most of the features being collapsed or partially collapsed and/or burned or partially burned. Historian Joe Mazzini completed a thorough evaluation of the historic origins and associations of the complex, including examining records at Shasta County and interviewing four informants with first-hand knowledge of the history of construction and use of the property (see Mazzini, in Jensen 1990, attached). None of the occupants or land owners, beginning with J.S.P. Bass in 1872 who brought the original patent up to date in his name (script patent) through owner Fred Peri (who acquired the property in 1976 and whose estate retains an interest in the property), are known to have been especially important in local or regional history. Perhaps the most "prominent" of the property's owners was its first owner, J.S.P. Bass, who settled in Shasta County in 1849 and who operated a freight pack train between Shasta (historic "Old Shasta") and Scott Valley in Siskiyou County. However, the built environment comprising site CA-SHA-1824-H is not associated with Bass;

Bass' historic operation was located at Mountain Gate, approximately one mile north-northeast of site CA-SHA-1824-H where Bass' headquarters is referenced on early County and other maps as Bass Station.

The residence at this recorded site, collapsed, was actually moved to its present location in the 1940's from a point approximately one hundred feet away. While portions of the existing residence were initially constructed in 1906 by then-owner Murphy, it was 36 years and four owners later, during the 1940's, that the original 1906 residence was dismantled, at which time the lower section of the 1906 residence was substantially remodeled and erected at its present location. As noted, the original 1906 residence had been built by James J. Murphy, who acquired a portion of the present project area and moved to this location following sale of his cattle ranch at Montgomery Creek, Shasta County. The new Murphy cattle ranch operation was established within the present project area lands, but lasted only through 1921 at which time Murphy sold out to Rodriguez, who lost the property to Barner in a default proceeding filed with in the Shasta County Court. The existing residence at site CA-SHA-1824-H no longer represents the original structure, since it was substantially remodeled and then moved to its present location by Barner, in the 1940's.

In summary, the site's residence was not constructed, nor was the surrounding ranch operated, by persons known to be important in California or United States history, nor were subsequent owners involved with any particularly noteworthy or substantial undertakings within Shasta County or the State. Elements of the built environment that remain today are generally unremarkable and in very poor condition.

This site is not recommended eligible or potentially eligible for inclusion on the National Register per Criteria a) or b).

c) Based on existing inventory data maintained by the Northeast Information Center at CSU-Chico, a large number of small residential/ranch complexes generally similar to and duplicating the general attributes of CA-BUT-1824-H are known and documented for Shasta County generally and the greater Redding area in particular. The general features and components of such sites are thus not rare in the California inventory, nor do any of the features that remain at this site represent a "... distinctive type..." or "...a distinguishable entity whose components may lack individual distinction." Moreover, this site lacks not only primary integrity but also associative context, an important attribute or quality in evaluating integrity and determining whether or not a feature or series of features attain the level of "historic property" and thus might be significant per CEQA or eligible for the National Register of Historic Places. This site is not recommended eligible per Criterion c).

d) Data recovery work involving this site could not be expected to provide unique or unusual data, nor additional information useful in local or regional historic research. No refuse disposal areas, cisterns or privy pits have been identified. What remains of the built environment includes mixed components from different time periods erected for variable functions by different persons. In the absence of an abundance of associated artifacts or a built environment with more substantial primary integrity and associative context, data recovery involving could not be expected to significantly

advance our knowledge and understanding beyond that which has been achieved in the existing site record filed with the Northeast Information Center, CSU-Chico, and the very complete historic account prepared for this particular site and the surrounding ranch lands by historian Joe Mazzini (see Mazzini, in Jensen 1990, attached).

Application of the Criteria to Historic Site CA-SHA-1447-H

Specific application of the criteria to historic site CA-SHA-1447-H yields the following recommendations.

a) & b) This site represents the general route of the wagon (toll) road (Sacramento River Road) between Old Shasta and Oregon. The road was originally constructed in 1853 and utilized as a toll road, first historically recorded by Magee in his 1862 "Official Map of Shasta County," wherein Magee stated, "After the Sacramento River Trail [CA-SHA-1447-H] was opened in the late 1850's, the main road from Shasta north to Oregon passed through Buckeye." The road through Buckeye (the present historic feature represents this road) continued to be "the main Pacific Highway north for many years" after the County seat was moved from Shasta to Redding (Hiatt 1974:18). The Buckeye Road, as it was also known, was utilized as a postal route until at least 1884 to serve post offices north of Redding, including Buckeye and Mountain Gate, with the latter being located approximately 1/2 mile north of the present project area. In 1883, the Southern Pacific Railroad was extended north of Waugh's Ferry, following the west side of the Sacramento River and then up the Sacramento River Canyon. With the construction of Shasta Dam in the early 1950's, however, the Southern Pacific Railroad had to be re-routed to the east, where it partially followed the old California-Oregon Trail route (Peterson 1965). These two historic roadways – the California-Oregon Trail route and the Sacramento River Road or site CA-SHA-1447-H – originally merged with one another at Mountain Gate, located approximately 1/2 mile north of the recorded segment of CA-SHA-1447-H within the Premier Meadows project area.

Clearly, site CA-SHA-1447-H represents the alignment of an important historic transportation feature closely linked with individuals and events important in the early history of Redding and Shasta County. West of the present project area, this road crossed the Sacramento River at one of the few available safe crossing areas, and was early acquired by Joseph Waugh, who operated both the road and the Ferry on the River until 1883. In this year, Southern Pacific extended the railroad north of Redding along the west side of the Sacramento River, cutting off Waugh's access to the River. Waugh's operation, and the individuals and associations responsible for construction of the original road and the River crossing, are well documented in local and regional history. Although the physical remains which constitute this site retain no research value (see discussion, below), the site is recommended eligible for the National Register on the basis of its association with events and persons considered important in the early history of Redding and Shasta County, for the period 1853 to 1883.

c) While the route of this linear feature represents the original alignment of an important historic transportation corridor, the feature today is not a faithfully preserved example of original historic qualities or attributes. Important components that are absent include

evidence in the cross-section and in the existing track of ruts or other physical remains of use by wagons and carts. By way of comparison, such features are present along several segments of this roadway documented to the southwest near Waugh's Ferry on the west side of the Sacramento River (Jensen 1992). Further, with respect to the present Mountain Gate Meadows segment of this roadway, the existing width of the track and the radius of some of the curves are the result, at least in part, of use of mechanized equipment to periodically re-grade the surface in conjunction with ranching operations in this area. These modifications have completely eliminated the "feel" of "old" or historic, leaving in its place the sense that the existing alignment is simply a ranch access road through this open meadow area. In short, the segment of roadway within the Mountain Gate Meadows project area does not generally provide one with a sense that the feature is a "... distinctive type..." or "...a distinguishable entity whose components may lack individual distinction." Based on the absence of historic "feel" and all defining attributes related to original construction and early historic use, this segment of roadway is not recommended as contributing to eligibility per Criterion c).

d) No features or artifacts associated with the historic roadway have been observed along the Premier Meadows segment. It is known from a range of existing historic documents the age of the resource and its role in early transportation in this area of Shasta County. In the absence of associated features or artifacts, however, any program of data recovery involving the Premier Meadows segment could not reasonably be expected to expand our understanding or knowledge of this historic feature beyond that which has already been achieved in the existing historic accounts and the updated site record prepared for the Premier Meadows segment. This segment of the site is therefore not recommended as contributing to eligibility for the National Register per Criterion d).

Overall and in conclusion, that portion of site CA-SHA-1447-H located within the Mountain Gate Meadows project area is considered to possess qualities under Criteria a) and b) that contribute to National Register eligibility. However, the Mountain Gate Meadows segment is considered to have lost historic integrity re. original defining attributes (and thus eligibility per Criterion c), due to grading and bulldozing in conjunction with contemporary ranch activities, and more recently recreational use of the project area. Finally, the absence of associated features and artifacts substantially reduces or eliminates the potential of data recovery to contribute further to our understanding or knowledge of local or regional history, and thus this segment is not considered eligible per Criterion d).

Table 3 summarizes project area sites in relation to NRHP eligibility. A "+" or "-" has been entered for each of the eligibility criteria recommended applicable.

Table 3: Eligibility Summary for Project Area Sites.

	RECOMMENDED PREHISTORIC				***SIGNIFICANT***	***COMPONENT HISTORIC***			
NRHP Criteria	***a***	***b***	***c***	***d***	***T[1]***	***a***	***b***	***c***	***d***
CA-SHA-1082	-	-	-	-	-				
CA-SHA-1085	-	-	-	+	-				
CA-SHA-1086	-	-	-	-	-				
CA-SHA-1822	-	-	-	+	-				
CA-SHA-1823	-	-	-	+	+				
CA-SHA-1824-H						-	-	-	-
CA-SHA-1447-H						+	+	-	-

[1] = "T" references "Traditional Cultural Value" re. federal guidelines.
[2] = Potentially eligible for Criterion d only if proposed shovel test pit evaluation identifies intact buried cultural material.

6. PROJECT EFFECTS

A project may have a significant impact or adverse effect on cultural resources/historic properties if the project will or could result in the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance or values of the historic resource would be materially impaired. Actions that would materially impair a cultural resource or historic property are actions that would alter or diminish those attributes of a site that qualify the site for inclusion in State site registers or the National Register of Historic Places.

Sites to be Directly Impacted by Proposed Build-Out of the Project and That Would Therefore be Destroyed include:

CA-SHA-1082
CA-SHA-1085
CA-SHA-1086
CA-SHA-1822
CA-SHA-1824-H
CA-SHA-1447-H

Sites to be Avoided, Preserved In Place and Not Directly Impacted include:

CA-SHA-1823

Potential impacts of the proposed undertaking to archaeological and historic sites per the above summary is based on the present Constraints and Tentative Parcel Maps submitted to Shasta Lake City. The following Historic Properties Treatment Plan is based on the above impact assessment and recommendations/conditional recommendations regarding eligibility.

7. HISTORIC PROPERTIES TREATMENT PLAN

General

CA-SHA-1824-H: Historic site CA-SHA-1824-H (ranch/residential complex) is not recommended eligible for the National Register under any of the relevant criteria. This site is not further considered in this treatment plan.

CA-SHA-1447-H: Historic site CA-SHA-1447-H (road corridor) located within the Mountain Gate Meadows project area is recommended as possessing qualities under Criteria a) and b) which contribute to National Register eligibility – namely, association with locally and regionally important historic events, activities and persons. However, the Mountain Gate Meadows segment is considered to have lost historic integrity re. original defining attributes (and thus eligibility per Criterion c) due to grading and bulldozing in conjunction with over 100 years of ranching activities and more recently with recreational-related activities within the project area. The absence of associated features and artifacts eliminates the potential of data recovery to contribute further to our understanding or appreciation of local or regional history, and thus this segment is not considered eligible under Criterion d).

A primary consideration relative to treatment for this linear feature is the fact that the qualities of the site as represented in Criteria a) and b) have already been preserved in the existing record, including the present DPR-523 Update Primary Record and Linear Record, as well as written and oral histories, newspaper accounts and articles, GLO plats, historic County maps, and USGS maps. While the existence of the transportation corridor at this location is indeed the result of historic events and persons deemed to be locally and regionally important, the physical remains of the site at this location no longer exhibit any of the qualities which might be appropriate to preserve for exhibition purposes or for future additional research. In fact, effects to or loss of the historic attributes of this segment have already been mitigated, since the contributing elements (established links with historic persons, events) have already been fully preserved in the newly prepared records and extensive additional historic documents and records referenced above.

Based on the premise that mitigative action/treatment has already been accomplished *de facto*, potential effects of the undertaking (build-out of the proposed project) are not considered adverse and therefore no preservation and no further treatment is recommended. Better-preserved examples of this same historic roadway are already preserved on both public and private lands, with the most relevant section being a segment of this roadway located on previous BLM lands within what is now the Shasta State Historic Park (Old Shasta), located southwest of the project area on the west side of the Sacramento River.

Based on these considerations, no further treatment and no preservation of CA-SHA-1447-H are recommended, since mitigation of potential project effects has already been accomplished and no adverse effects will accompany proposed build-out of the project.

CA-SHA-1082 & –1086: Neither of these prehistoric sites are recommended eligible for the National Register under any of the relevant criteria. Neither of these sites warrant further consideration in this treatment plan.

CA-SHA-1085 and –1822: These two project area sites contain buried deposits in the form of a midden and limited non-artifactual midden constituents (poorly preserved animal bone). Sites CA-SHA-1085 and -1822 were subjected to test unit excavation in 1989-1990, and based on results of that evaluation (see discussion above, under description of ***Prehistoric Sites***), both were recommended not significant per CEQA on the grounds that both had suffered substantial disturbance to surface and subsurface components, no features were present, artifact types encountered were narrow in range and very low in density, and both appeared essentially duplicative of existing information taken from much better preserved sites relevant to Late Period occupation in the Redding area (Jensen 1990). However, this earlier recommendation was revised in this report (see discussion under ***Eligibility Recommendations***, above), in part on the basis of prehistoric site losses in the region during the past two decades and in part on the basis of consultation with Wintu representatives.

Based on the potential for a program of focused data recovery to acquire better dating information important in studies of regional settlement and land use patterns, it is recommended that these two sites retain limited data classes, not previously fully exploited, that render them eligible for the National Register under Criterion d). Recovery and analysis of these limited data classes as part of a program of data recovery would, it is recommended, reduce project impacts to these sites to less than adverse levels. The recommended program of data recovery is detailed below under ***Testing and Data Recovery Approach***.

CA-SHA-1823: One project area site contains buried deposits in the form of a midden associated with mortars and a petroglyph. The site represents primary habitation, is well-preserved, and has been excluded, along with a 50-ft buffer around the site, from lands that will be directly impacted by build-out of the proposed project. Long-term preservation concerns are addressed in the ***Monitoring Plan***, below.

Testing and Data Recovery Approach

Two prehistoric sites (CA-SHA-1085 and –1822) will be subjected to focused data recovery. The primary goals of this work involve recovering dating samples (charcoal), a data class not exploited during initial testing of these two sites in 1989-1990. In the process of recovering datable charcoal, additional cultural materials will also be recovered, analysis of which would include comparison with previously recovered cultural material (Jensen 1990) and would also proceed in conformity with the research approach specified below.

Research Guidelines: There are a number of implications of the culture historical model and other information presented above (see discussion of prehistory and ethnography) for focused data recovery proposed for CA-SHA-1085 and –1822. Three primary research domains are relevant, each with a number of specific research questions by means of which the data at this site could be evaluated.

(1) Site Function

One series of questions relevant to project area sites relates to the type of subsistence and/or other activities undertaken and the relation of cultural material types to other prehistoric sites located nearby. Relevant specific questions include:

a) What activities occurred at the site, based on artifacts, lithic debris, and midden constituents, and which appear to be the most important?
b) Is there evidence for intra-site patterning of artifactual and other materials in terms of distinct manufacturing, use, or processing areas, or is the distribution of artifacts/features essentially random and un-patterned, or has the patterning been destroyed or compromised by historic activities such as vegetation clearing and tree removal?
c) How does the artifact assemblage compare with regional sites in terms of function? Are the stylistic, morphological, technological, and/or functional attributes of the site's artifacts unique, or are they shared with some or many other sites in the immediate area?
d) Are innovative means of artifact production evident, or are there changes through time in technology associated with implement manufacture or resource procurement or processing?
e) What is the depth of any newly identified cultural deposit, and is there measurable change in the relative frequencies of artifacts and midden constituents related to depth? If so, what are the possible temporal (or cultural) implications of these changes?

(2) Temporal Patterns

One of the keys to an adequate understanding of regional prehistory rests with chronological control over a sample of regional sites. Various chronological sequences have been proposed for the Redding area, derived from sites located within diverse environmental areas. Specific research questions directed at understanding temporal patterns would include:

a) What is an estimate of the length of occupation of the site based on the materials encountered, and is it likely that further chronometric and stratigraphic analyses would provide significant additional chronological information?
b) Was the site likely to have been occupied continuously, or are recurring episodes of use suggested by sterile layers present in the stratigraphic sequence?
c) What time markers (esp. projectile point styles, beads) are present which can be correlated to local and regional sequences? Can the indicated temporal range be refined or can new "horizon markers" be justified on the basis of unique artifact styles present?

(3) Settlement, Land Use and Subsistence Patterns

Settlement pattern distribution is an integral component of the conjunctive approach in archaeology. The ultimate goal of such studies is to provide a means of summarizing exploitative strategies and changes in these strategies through time. Such changes may be registered as variation in the distribution of archaeological site types and feature complexes

within a circumscribed geographic area. Consequently, successful settlement pattern analysis requires the development and application of accurate functional typologies for sites (Question 1, above), and reliable temporal controls (Question 2, above). In order to further evaluate the nature and intensity of occupation at a particular site, several additional questions may be appropriate, depending on the nature of the cultural materials exposed:

a) Are cultural remains reflecting the full range of traditional domestic activities represented, or is only a restricted range of domestic activities indicated?
b) Is there evidence for intensive exploitation of a wide range of local resources, as would be indicated by quantities of fish bone, freshwater mussel shell, deer and other mammal bone, or associated recovery and processing technologies? Alternatively, does the material assemblage suggest more specialized activities, such as a focus on the recovery and processing of specialized products such as "red bud" or other material for basket weaving, or lithic reduction activities associated with production of tool kits for hunting, etc.?

The objective is to utilize these questions as a guide in assessing the information and research values represented by cultural materials present at one or more of the sites subjected to formal archaeological testing or focused data recovery. Once the types of data actually present has been determined, then a conclusion can be reached as to the specific research values of the identified cultural materials in addressing questions and issues of local and regional consequence, such as those enumerated above.

Recovery Methods, and Analytical Techniques and Approaches: Data for addressing the research topics outlined above is derivable from excavation and laboratory analyses of recovered artifactual materials and non-artifactual midden constituents. Already available for the sites in question is inventory-level archaeological survey data as well as additional information concerning buried cultural materials derived from test excavation at two of the sites, including hypotheses relevant to (a) site function, (b) density and types of surface and sub-surface cultural material present, (c) and general environmental data. Based on research objectives per the above, the following collection and evaluation tasks are considered appropriate:

- Excavation utilizing 1-meter-square exposures and in arbitrarily-defined 10 cm levels, with all recovered material screened through 1/4" mesh, unless very small objects (e.g., beads) are observed, in which case screening would shift to 1/8" mesh.

- Submission of charcoal samples for radiocarbon analysis if material is recovered in suitable quantities and in sufficiently undisturbed contexts to warrant evaluation.

- Evaluation of recovered cultural material in relation to local and regional typologies for various types of formed artifacts that might be exposed.

- Preparation of a final report, to proceed in conformity with standard professional practices, designed to detail the information and research values of recovered cultural material.

For all sites subjected to data recovery excavation, recovered cultural material would be accessioned and the final report would include illustration of representative examples of formed artifact types, including especially diagnostic projectile points, beads, and other artifact types.

- All materials recovered during the project would be considered the real property of the property owner/project proponent, and would be returned to the property owner along with the final report for permanent curation.

Monitoring Plan

Construction Monitoring: Upon completion of the proposed focused data recovery program at sites CA-SHA-1085 and –1822, initial ground-disturbing impacts to these sites would be monitored. Monitoring would involve one or more archaeologists (depending on the number of pieces of equipment operating at once) during initial land "grubbing", grading and other ground-disturbing impacts, and would include the presence of a Wintu representative. The goal of monitoring is to ensure that any inadvertent discoveries of previously undocumented and unknown cultural materials encountered are evaluated and that an appropriate level of data recovery be undertaken in the event of such a discovery. An "appropriate level of data recovery" would be based on the general research guidelines, and recovery and analytical techniques and approaches, detailed above for these four sites.

Long-Term Preservation Concerns and Monitoring: A long-term monitoring plan would be implemented for the one project area site for which direct impacts will be avoided – site CA-SHA-1823. Long-term monitoring shall include periodic site inspection, would be implemented by a qualified archaeologist, and would include the following specific components:

1) **Base Line Data:** Take photographs of the site at the time of initial construction activity (road, infrastructure and residential construction activities). These photographs will provide the base-line data for subsequent site inspections and monitoring of site condition. A copy of the photographs shall be delivered to the land owner for permanent curation.

2) **Field Inspections and Reports:** A professional archaeologist shall conduct field inspections at the site/preservation area, using the photographs taken in the base-line year as representing the "pristine" condition of the site, as follows.

   (a) The initial inspection shall be undertaken at the beginning of construction work, including road grading and land re-contour, and will continue for five years. The selected archaeologist shall prepare a summary report following each annual field inspection, in which the condition of the site and any observed impacts to it shall be summarized. If impacts to the site have occurred, the report shall detail appropriate treatment changes, based on specific findings and field observations. "Treatment changes" could include but are not necessarily limited to such actions as depositing boulders or other cover over or around the site deposit.

(b) On the fifth annual inspection, the archaeologist shall render a conclusion as to whether additional annual inspections are necessary, or alternatively whether or not the program of annual inspections shall be terminated. In reaching a conclusion, the archaeologist shall consider several factors, including: (1) the extent of any impacts to the site that have accompanied build-out and use of nearby lands, and (2) whether or not indigenous or other (exotic) vegetation might be adversely affecting the preservation area for which some specialized treatment might be recommended.

(c) Responsibility for implementing the long-term monitoring plan shall reside with the developer at the time of initial construction activity, transferring thereafter to the final property owner(s) or homeowner's association.

Treatment for Inadvertent Discovery of Human Remains/Burials

In the event that human remains are inadvertently encountered during archaeological testing or data recovery, construction monitoring, any non-monitored construction activity or any time subsequently, State law shall be followed. State law requires immediately contacting the County Coroner's office upon any discovery of human remains. Relevant State law includes Chapter 1492 of Statutes of 1982, Section 7050.5 of the Health and Safety Code, amended Section 5097.94 of the Public Resources Code, and Sections 5097.99 of the Public Resources Code, and in compliance with Senate Bill 447 which amended Section 5097.99 of the Public Resources Code in 1988. As part of this process, the Native American Heritage Commission would be contacted by the Coroner's Office and requested to identify a "most likely lineal descendant." The designated descendant would then negotiate with the land owner for final disposition of identified remains, including reburial within an appropriate location within the project area.

8. PROJECT SUMMARY

This report details the results of an archaeological inventory survey of approximately 600 acres of land located in the City of Shasta Lake, adjacent to the west side of Interstate 5 and a short distance south of Mountain Gate. Proposed action involves development of this property for residential use, an action that would result in physical disturbance to ground surface and sub-surface components and would therefore have the potential to impact cultural resources located within the 600-acre land area, as well as two off-site areas which include a water storage and delivery system immediately west of the 600-acre property, and a new roadway connecting the southern portion of the 600-acres with Cascade Boulevard.

A search of State data bases, including all records and documents available at the Northeast Information Center, consultation with Redding Wintu, consultation with the Native American Heritage Commission, and intensive-level pedestrian survey have resulted in identifying five prehistoric and two historic sites within the project area.

Extensive prior archaeological survey and site evaluations, coupled with the present project's re-examination effort and updated Native American consultation, support the following recommendations re. eligibility and site treatment:

Shovel Test Pit Examined Lithic Scatters, CA-SHA-1082 and –1086: Two of the prehistoric sites do not contain buried deposits and no surface features such as mortars, house pit depressions, petroglyphs, etc. Extensive shovel test pit and surface examination of these sites concluded that these sites represent sparse, surface occurring lithic scatters which have been subjected to extensive disturbance. Consequently, both of these prehistoric sites are recommended not eligible for the National Register under any of the relevant criteria.

Tested Special Use Locales, CA-SHA-1085 and –1822: Two project area sites contain buried deposits in the form of a midden and limited non-artifactual midden constituents. Both sites were subjected to test unit excavation in 1989-1990, and based on results of that evaluation both were recommended not significant per CEQA on the grounds that both had suffered substantial disturbance to surface and subsurface components, no features were present, artifact types encountered were narrow in range and very low in density, and both appeared essentially duplicative of existing information taken from much better preserved sites relevant to the Late Period in the Redding area. However, this earlier recommendation is here revised, in part on the basis of prehistoric site losses in the region during the past two decades and in part on the basis of consultation with Wintu representative Kelley Hayward. Based on the potential for a program of focused data recovery to acquire additional site dating information important in studies of regional settlement and land use patterns, it is recommended that these two sites retain limited data classes, not previously fully exploited, that render them eligible for the National Register under Criterion d). Recovery and analysis of these limited data classes as part of a program of data recovery would, it is also recommended, reduce project impacts to these sites to less than adverse levels. The recommended program of data recovery is detailed in the ***Treatment Plan*** contained in this report.

Shovel Test Pit Examined Habitation Locale, CA-SHA-1823: One project area site contains buried deposits in the form of a midden associated with mortar holes and a petroglyph-bearing boulder. While this site has not been formally tested, dating of the deposit seems reasonably estimated and the midden has been well-defined on the basis of a 1994 program of shovel test pit excavation and other evaluative work. The site appears intact and not recently disturbed, and is recommended eligible under Criterion d) for research and information values, particularly since the midden is accompanied by features including especially the petroglyph. As well, this site may represent the ethnographic village of Simisbaki, assigned #55 in Guilford-Kardell and Dotta (1980:49). Lastly, Wintu representatives consulted commented that intact sites containing petroglyphs are becoming increasingly rare in the Redding area, with the petroglyph representing a feature of religious significance and signaling the possible presence of portable artifacts in the midden representing ceremonial activity and/or possible burials. Recommended treatment per the ***Treatment Plan*** in this report is preservation, with implementation of a long-term monitoring plan to ensure that impacts to the site will not accompany proposed build-out of and subsequent activities within the project area.

Historic site CA-SHA-1824-H (a dilapidated ranch/residential complex) is not recommended eligible for the National Register under any of the relevant criteria. This site is not considered in the ***Treatment Plan*** in this report.

Historic site CA-SHA-1447-H (road corridor) within the project area is recommended as possessing qualities under Criteria a) and b) which contribute to National Register eligibility – namely, association with locally and regionally important historic events, activities and persons for the period 1853 - 1883. However, the same segment is considered to have lost historic integrity re. original defining attributes (and thus eligibility per Criterion c) due to grading and bulldozing in conjunction with over 100 years of ranching activities and more recently with recreational-related activities within the project area. The absence of associated features and artifacts eliminates the potential of data recovery to contribute further to our understanding or appreciation of local or regional history, and thus this segment is not recommended eligible under Criterion d). A primary consideration relative to treatment for this linear feature is the fact that the qualities of the site as represented in Criteria a) and b) have already been preserved in the existing site records as well as written and oral histories, newspaper accounts and articles, GLO plats, historic County maps, and USGS maps. While the existence of the transportation corridor at this location is indeed the result of historic events and persons deemed to be locally and regionally important, the physical remains of the site at this location no longer exhibit any of the qualities that might be appropriate to preserve for exhibition purposes or for future additional research. In fact, effects to or loss of the historic attributes of this segment have already been mitigated, since the contributing elements (established links with historic persons, events) have already been fully preserved in the newly prepared records and extensive additional historic documents and records referenced above. Based on the premise that mitigative action/treatment has already been accomplished *de facto*, potential effects of the undertaking (build-out of the proposed project) are not considered adverse and therefore no preservation and no further treatment is recommended. This site is not considered in the ***Treatment Plan*** in this report.

As indicated above, extensive consultation with Redding Wintu occurred during previous survey and evaluative excavation work involving project area sites (in 1990-1994 and 2005). Consultation was updated during the present project by consulting with the Native American Heritage Commission that reports no sacred land listings within the project area, and Wintu representatives included on the NAHC consultation list. Extended consultation was undertaken with Mark Franco, Headman of the Winnemem Wintu Tribe. Mr. Franco indicated that the Winnemem Wintu Tribe is aware of prehistoric sites located both east and west of the project area, and further indicated that future correspondences regarding prehistoric resources within the subject property should be directed to Kelli Hayward of the Wintu Tribe of Northern California. As extensive consultation was previously undertaken with Kelli Hayward, and because her recommendations were incorporated into the present report, no additional consultation was undertaken.

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ARCHAEOLOGICAL INVENTORY SURVEY

Mountain Gate Meadows Development Project,
c. 600-acres,
City of Shasta Lake, Shasta County, California.

ATTACHMENTS

- Vicinity Map
- Archaeological Survey Area Map
- Records Searches from CSU-Chico
- Native American Heritage Commission Request Letter dated 10/26/10
- Native American Heritage Commission Response Letter dated 11/3/10
- Letters to Interested Native Americans listed by the NAHC.
- Extended Correspondences with Mark Franco.
- Site record forms for sites:
  - CA-SHA-1082
  - CA-SHA-1085
  - CA-SHA-1086
  - CA-SHA-1822
  - CA-SHA-1823
  - CA-SHA-1824-H
  - CA-SHA-1447-H

Appendix 4.10-1

WATER SUPPLY ASSESSMENT

Mountain Gate at Shasta Lake
Water Supply Assessment

1.0 Introduction

The City of Shasta Lake (City) is preparing an environmental impact report (EIR) for the proposed ***Mountain Gate at Shasta Lake Project*** (project, proposed project). As required by the California Environmental Quality Act (CEQA), this document is the long-term water supply assessment (WSA) for the proposed project. The California Water Code (Water Code), Sections 10910 through 10915, requires an assessment of whether water supplies are sufficient to serve the demand generated by the proposed project, including the reasonably foreseeable cumulative demand in the City over the next 20 years under average normal year, single dry year, and multiple dry year conditions. As the City of Shasta Lake is the provider of water, the City is responsible for preparation of the WSA.

2.0 Project Description

2.1 Project Location

The proposed project is located in the northeastern section of the City of Shasta Lake, west of Interstate 5 (I-5) between the Shasta Dam Boulevard interchange (Exit #685) and the Mountain Gate interchange (Exit #687). The City of Shasta Lake is located north of Redding in western Shasta County. The project site, which is known locally as the Peri property, is located in Sections 20 and 29, Township 31 North, Range 5 West, of the Mount Diablo Meridian (see **Figure 1**, Project Location).

2.2 Project Land Use Summary

The proposed project includes adoption of the Mountain Gate at Shasta Area Plan, which could eventually lead to the development of between 829 and 1,604 dwelling units and up to 195,584 square feet of nonresidential development on approximately 590 acres (see **Figure 2**, Schematic Land Plan).[1] The range of dwelling units approximately reflects the minimum and maximum allowable development within the zone district. The maximum number of units is capped through policy in the Area Plan and the project description in the EIR. As no development plans are included as part of the development application, this WSA includes information for both the low and high range of development potential allocated to each of the development areas. The Area Plan provides for different land use patterns and divides the property into areas A through U. As shown in **Table 1**, the proposed project provides for a mix of residential and nonresidential uses with differing densities.

[1] Zoning density is flexible and would allow for a theoretical maximum of 1,779 units. However, topography and site constraints would limit the overall density. A policy statement in the Area Plan and the project description of the EIR limit the total number of residential units on the project site to 1,604.

Table 1 – Proposed Land Uses and Density

Area	Primary Land Use	Acres	Max. Building Coverage or FAR	Potential Sq. Ft.	Density per Acre		Dwelling Units	
					Min.	Max.	Min.	Max.
A	Commercial	11.2	0.25	121,968	0	0	0	0
B	Open Space	181.5	0.1	—	0	0	0	0
C	Park	7.3	0.1	—	0	0	0	0
D	Medium Density Residential	27.9	0.7	—	4	7	112	176
E	Medium Density Residential	22.5	0.7	—	4	7	90	142
F	Very Low Density Residential	16.3	0.5	—	1	2	16	30
G	Medium Density Mixed Use	43.5	0.7	—	4	10	174	392
H	Mixed Use Commercial	3	0.1	73,616	0	0	0	0
	High Density Mixed Use	11.9	0.7		11	20	131	215
	Fire Station	2	0.7	—				
I	Medium Density Residential	7.3	0.7	—	4	7	29	46
J	Medium Density Residential	8.1	0.7	—	4	7	32	51
K	Park	7.6	0.1	—	0	0	0	0
L	Low Density Residential	17.1	0.5	—	2	4	34	61
M	Community Park	13	0.5	—	0	0	0	0
	Low Density Residential	19.4	0.5	—	2	4	39	70
N	Low Density Residential	11.3	0.5	—	2	4	23	41
O	Low Density Residential	13.1	0.5	—	2	4	26	47
P	Low Density Residential	32.9	0.5	—	2	4	66	119
Q	Very Low Density Residential	10.4	0.5	—	1	2	10	19
	Electric Substation	2					0	0
R	High Density Residential	4.5	0.7	—	11	30	50	122
S	Very Low Density Residential	40.5	0.5	—	1	2	41	73
T	Open Space	5.9	0.1	—	0	0	0	0
U	Open Space	33.6	0.1	—	0	0	0	0
ROW	Rights-of-Way	36.2	0	—	—			
Totals		**590**	—	**195,584**	—		**873**	**1,604**

Source: Mountain Gate at Shasta Lake Area Plan, 2013

3.0 Water Supply

3.1 Contract Water

The City entered into a Long-Term Renewal Contract (No. 4-07-20-W1134-LTR1) with the Bureau of Reclamation (BOR) for the provision of Project Water from the Shasta Division – Central Valley Project (CVP). The term of the contract is March 1, 2005, through February 28, 2045. Prior to the City's incorporation, the Shasta Dam Area Public Utility District (SDAPUD) provided water to most of the area now within the city limits. The Contractor's Service Area identified in the SDAPUD's contract with BOR did not include the entire city limits; however, in April 2003, BOR approved an amendment to the Service Area to include all property within the city limits.

A portion of the southwest section of the City, known as the Summit City Pressure Zone, was served by the City of Redding until 2004, at which time Shasta Lake entered into an agreement with Redding to take over this system. The agreement allowed the City to acquire 30 acre-feet (AF) of the 40 AF allocated to the Summit City Pressure Zone. The City treats the other 10 AF of water, then delivers it through a master meter to a handful of Redding customers. Currently, the City of Shasta Lake is the only water service provider within the city limits.

The Water Utility has a current service area population of 10,100. According to the City of Shasta Lake Public Water Systems Statistics Reports for Calendar Year 2013, this population is served by 3,675 service connections, representing 95 percent residential and 5 percent nonresidential uses.

3.2 Historic Water Contract Restored

On July 29, 2003, the City was successful in securing an additional long-term water allocation from the Bureau of Reclamation (BOR) when the BOR agreed to restore the City's historical allocation of 4,400 AF of CVP water per year. As mentioned above, 30 AF were added to the CVP allocation in 2004. Additionally, the City recently entered into an agreement with the Anderson-Cottonwood Irrigation District (ACID) for the long-term (40-year) transfer of 2,000 AF of water to the City of Shasta Lake.

An agreement was also reached with MCM Properties, Inc. (MCM) for the long-term (40-year) transfer of up to 325 AF of water. The MCM agreement also states that MCM will make available an additional 132 AF per year of water if agreed upon annually by both MCM and the City. The City has the first right to this water if MCM determines that the water is available for transfer.

Including the BOR allocation of 4,400 AF, the 30 AF obtained through the Agreement with City of Redding, the ACID transfer of 2,000 AF, and 325 AF from MCM, the City's total long-term water supply is 6,755 AF per year.

The City also receives 50 AF per year of CVP water under an annual agreement with the Shasta County Water Agency. On March 13, 2013, the City requested the Water Agency permanently assign the 50 AF to the City under a long-term agreement. The Water Agency has indicated they are willing to consider this, and negotiations with that Agency for the long-term transfer will continue.

3.3 Bureau of Reclamation Approval of Water Transfers

On February 28, 2008, BOR provided written correspondence regarding its required environmental review for the ACID and MCM water transfers following a Temperature Impact Analysis conducted by BOR utilizing output from the CALSIM II model. BOR indicated the withdrawal of water from Lake Shasta at Shasta Dam would potentially impact downstream river temperatures via impact to the Cold Water Pool (CWP) and result in detrimental impacts to river fisheries.

There are currently two withdrawal ports at Shasta Dam: one at the 750-foot elevation and the second at the 950-foot elevation. The BOR modeling considered only the 750-foot elevation because lake storage is frequently below the alternative withdrawal port elevation of 950 feet during major drought periods.

BOR concluded that based on the temperature model output, the reduction in CWP volumes can result in a Keswick Dam release temperature increase of 0.1°–0.5°F during the critical months of July through September. In a subsequent meeting, BOR indicated that any measurable increase in temperature would be considered environmentally significant. Consequently, BOR approved the transfer of only 140 AF of ACID water.

The City has discussed options to resolve the CWP issue, including the possibility of installing a floating barge to take water from the top 30 or 40 feet of the Lake, where it would gravity from that point to an opening at the 750 foot intake and down to the raw water pump station. The City also considered installing an additional intake at the 850-foot elevation; however, it is unknown at this time whether this option would satisfy BOR's environmental concerns regarding the CWP issue.

The City is in the process of applying for grant funding to study the feasibility of utilizing a local water district's water treatment and distribution system located in an incorporated area of Shasta County with an intertie to the City, which would allow diversion of the ACID water allocation without impacting the CWP. In addition, in the City's September 25, 2013, comment letter to the BOR for the Draft Environmental Impact Statement for the Shasta Lake Water Resources Investigation (enlargement of Shasta Dam), the City requested BOR dedicate 4,600 AF of the newly impounded water to the City's base allocation of 4,400 AF, increasing its total long-term allocation to 9,000 AF.

4.0 Historical and Projected Water Delivery and Water Supply

4.1 Twenty-Year Water Supply

The City of Shasta Lake has a Master Water Plan that was originally adopted in 1998 and updated in 2004 (PACE 2004). The Water Plan projected an approximately 2.5 percent annual increase in water demand between 2004 and 2024. The Plan predicted if water demand were to continue at this rate for the next twenty years, total water demand for all customers in the City would be approximately 6,200 AF and the maximum daily demand on the water supply and treatment facilities would be about 13.0 million gallons per day (MGD).

The Master Water Plan projected total units of production (water into the system) in 2013 would be 3,870 AF per year and customer demand for water would be 3,786 AF per year. This is significantly higher than the actual numbers shown in **Table 2.** Actual units of production in 2013 were 32.5 percent less than predicted in the Master Water Plan; customer demand was 36.4 percent less than predicted.

Table 2 shows the units of production (water into the system) and delivery of water to customers by the City of Shasta Lake from 2009 through 2013. As discussed under Section 4.2 below, during drought years, BOR may temporarily reduce the City's water allocation in any year. The reduction is calculated based on the City's units of production over the prior three-year period.

Table 2 – Historic Water Production and Delivery

	Population	Residential Customers/ Meters	Commercial Customers/ Meters	Total Customers	Units of Production (AF)	Water Delivered to Customers (AF)
2009	10,269	3,501	197	3,698	2,957	2,501
2010	10,164	3,450	203	3,653	2,572	2,285
2011	10,102	3,443	204	3,647	2,493	2,177
2012	10,077	3,458	202	3,660	2,826	2,399
2013	10,100	3,478	197	3,675	2,610	2,407
2011 – 2013 Three-Year Average						
	Units of Production:	2,643 AF				
	Water Delivered:	**2,328 AF**				
2009 – 2013 Five-Year Average						
	Units of Production:	2,692 AF				
	Water Delivered:	**2,354 AF**				

Source: Population: California Department of Finance; Water Production: City of Shasta Lake

The above table shows an annual average reduction in the delivery of water of -0.75 percent for the five-year period from 2009 through 2013. This reduction is in contrast to the 2.5 percent annual water demand rate assumed in the Master Water Plan and is likely attributed to changes in the California Building Code regarding the use of low-flow fixtures as well as the effects of the recession. In addition, in 2010, the City adopted a Water Efficient Landscape Ordinance that applies to all new development in the City.

It is important to note that based on historical use, the City's population does not bear a strong correlation to water demands. That is, when population increases, there is not always a corresponding increase in demand for water. In fact, in some years where population has increased, water demand has decreased.

For example, according to the annual Public Water System Statistics reports, population and water demand were as follows:

Year	Population	Population Change	Water Demand (Deliveries)	Water Demand Change
2002	9,395	-	2,567	-
2003	9,730	335	2,450	-117
2004	10,038	308	2,584	134
2005	10,180	142	2,413	-171
2006	10,195	15	2,738	325
2007	10,237	42	2,570	-168
2008	10,243	6	2,853	283

For purposes of the 20-year projected analysis, the 2.5 percent water demand increase assumed in the Master Water Plan has been calculated along with a growth rate of 1.3 percent, which is the rate of increase to the water demand experienced for the period 2010 – 2013.

4.2 Water Emergency (Drought)

Bureau of Reclamation Allocation / Drought Reductions

Pursuant to BOR's Water Shortage Policy (2005), BOR may temporarily reduce the City's allocation of CVP water during any year based on the average of the most recent three years of water deliveries. The amount of the reduction is based on the City's water produced rather than water metered and delivered to customers. The reduction may also be adjusted based on population growth and demands of industrial, commercial and other entities to address demand increases that might not be reflected in the three-year average. In addition, the reduction may be adjusted for extraordinary water conservation measures and to address health and safety issues.

In March 2008, the BOR announced an update to the CVP water supply allocation due to drought conditions. The City's water allocation was reduced to approximately 2,280 AF, which represented a reduction of 25 percent from the City's three-year historic use average at the time.

Following BOR's 2008 announcement, the City entered into a short-term agreement with the McConnell Foundation for the purchase of 700 AF of water, bringing the City's total water supply to approximately 3,120 AF, which included 140 AF of ACID water. In February 2009, BOR's initial projections indicated a possible 40-50 percent reduction to the City's allocation. In March 2009, the City declared a water shortage emergency, and the City's water use restrictions were put into effect. The City purchased 1,400 AF of supplemental water from the McConnell Foundation. In June 2009, BOR announced that the City's allocation would be reduced by 25 percent, for a total allocation of 2,218 AF.

For water year 2010, BOR announced the City would receive 100 percent of its allocation. At that time, the City rescinded the resolution declaring a water shortage emergency. The City also received its full allocation for water years 2011, 2012 and 2013.

For 2014, BOR's initial projections in February 2014 again indicate the possibility of reducing the City's allocation by 50 percent due to the current drought situation. However, BOR will not make a final determination regarding this year's allocation until the end of the wet weather season in May.

The City is in negotiations with the McConnell Foundation to purchase up to 1,300 AF of supplemental water for 2014. The amount of water purchased will depend on BOR's final determination regarding allocation reductions. Based on the figures shown in **Table 2**, the average City water produced from 2011 through 2013 was 2,643 AF. A reduction of 25 percent would result in an allocation of approximately 1,982 AF of water. A reduction of 50 percent would result in an allocation of approximately 1,322 AF (Also see **Table 7**)

City's Water Conservation Plan

The City has an adopted Water Conservation Plan (2000) which incorporates the City's Water Shortage Contingency Plan (1994). The Contingency Plan includes a four-stage drought management plan that includes voluntary and mandatory stages, depending on the amount of BOR's water allocation reduction. Customers are required to reduce their use of potable water from 15 percent to 50 percent to offset BOR's reduction to the City's water allocation. **Table 3** shows the effects of the four rationing stages based on the three- year water supply average as shown in **Table 2**.

Table 3 – Potable Water Rationing

Three-Year Average (2,643 AF)			
Stage	**Demand Reduction**	**Program Type**	**Water Use Reduction by Customer AF per Year**
1	15%	Voluntary	396
2	25%	**Mandatory**	661
3	35%	**Mandatory**	925
4	50%	**Mandatory**	1,322

Section 13.12.400 of the City of Shasta Lake Municipal Code (SLMC) establishes a process whereby the City Council may declare a Water Shortage Emergency. Most recently, a public hearing was conducted on March 4, 2014, and City Council adopted a Resolution declaring a Water Shortage Emergency and imposing the following restrictions that apply to all customers in the City. The Resolution also established excess water use penalty fees.

A. Use of potable water to irrigate turf, ground cover, shrubbery, crops, vegetation, and trees in such a manner as to result in runoff for more than 5 minutes.

B. Use of potable water to wash sidewalks, walkways, driveways, parking lots, open ground, or other hard surfaced areas except where necessary for public health or safety.

C. Allowing potable water to escape from breaks within the customer's plumbing system for more than 24 hours after the customer is notified or discovers the break.

D. Washing cars, boats, trailers, aircraft, or other vehicles by hose without a shutoff nozzle and bucket, except to wash such vehicles at commercial or fleet vehicle washing facilities using water recycling equipment.

E. No restaurant, hotel, cafe, cafeteria, or other public place where food is sold, served, or offered for sale shall serve drinking water to any customer unless expressly requested.

F. Use of potable water for construction, compaction, dust control, street or parking lot sweeping, or building wash-down where nonpotable or recycled water is sufficient.

G. Use of potable water for sewer system maintenance or fire protection training without prior approval by the city engineer.

H. Use of potable water to fill or maintain levels in swimming pools, decorative fountains, ponds, or evaporative coolers unless a recycling system is used.

Pursuant to SLMC Section 13.12.401, any customer violating these restrictions is subject to penalties. These penalties could include the requirement for a flow-restrictor to be installed in the water service at the customer's cost. Repeated violations would be considered a misdemeanor and may be referred to the District Attorney's office for prosecution. In addition this Code section states the City may disconnect the water service if the customer refuses to comply with the restrictions during the Water Shortage Emergency.

In addition, the City Council may adopt by resolution other restrictions necessary to safeguard the adequacy of the water supply for domestic, sanitation, fire protection, and environmental requirements.

5.0 Water Demand Calculation Methodology

The proposed project site was included in the Master Water Plan calculations of demand with a total unit demand of 2,141 household equivalents (HE) or approximately 1,919 AF of water per year.[2] The Plan projected an HE as 500 gallons per home per day and then used a multiplier of 1.6 to account for higher water usage in new homes. This factor was raised even higher for areas where larger lots are anticipated because larger lots have historically used more water.

Therefore, the City uses 800 gallons per day per single-family HE as an estimate for water demand, even though new mandatory measures for water efficiency and conservation have been imposed in the California Green Building Standards Code to reduce the overall use of potable water within the building by at least 20 percent. In addition, the City's Water Efficient Landscape Ordinance was adopted in 2010, recognizing that the largest use of all municipal water is for landscape irrigation. Continued implementation of the Ordinance will ensure that landscaping is designed with water-efficient irrigation systems and drought tolerant plants to reduce water demands.

Table 4 shows the approximate acre-foot water demand for the project as calculated using the above assumptions. Water demand for commercial uses was calculated using 7 HEs per acre. Water use for high-density areas (multi-family uses) was reduced by 50 percent. Parks were calculated at 650,000 gallons (2 AF) per acre per year. The Fire Station was assigned a range of 2 – 3 HEs.

[2] For purposes of this water supply assessment, the HE was used to calculate assumed acre-feet (2,141 x 800 gallons per day x 365 days/325,851 gallons in each acre-foot = 1,919 acre-feet per year).

Table 4 – Estimated Water Demand in Acre-Feet per Year

Area	Primary Land Use	Acres	Water Need (AF)	
			Low	High
A	Commercial	11.2	70	70
B	Open Space	181.5	—	—
C	Park	7.3	15	15
D	Medium Density Residential	27.9	100	158
E	Medium Density Residential	22.5	81	127
F	Very Low Density Residential	16.3	14	27
G	Medium Density Mixed Use	43.5	156	351
H	Mixed Use Commercial	3	19	19
	High Density Mixed Use	11.9	59	96
	Fire Station	2	2	3
I	Medium Density Residential	7.3	26	41
J	Medium Density Residential	8.1	29	46
K	Park	7.6	15	15
L	Low Density Residential	17.1	30	55
M	Community Park	13	26	26
	Low Density Residential	19.4	35	63
N	Low Density Residential	11.3	21	37
O	Low Density Residential	13.1	23	42
P	Low Density Residential	32.9	59	107
Q	Very Low Density Residential	10.4	9	17
	Electric Substation	2	—	—
R	High Density Residential	4.5	22	55
S	Very Low Density Residential	40.5	37	65
T	Open Space	5.9	—	—
U	Open Space	33.6	—	—
ROW	Rights-of-Way	36.2		
Totals		**590**	**848**	**1,434**

Other Approved Projects

	Project	Undeveloped Lots Remaining		Water Need (AF)
SD 02-01	Windsor Estates II	38		34
SD 03-02	Oak Ridge Subdivision (Karem)	28		25
SD 04-01	Mountain Properties (Jaxon Baker)	164		147
SD 04-04	Kingston Estates (Tatom)	10		9
SD 05-01	Riddle Road Subdivision (Woolery)	21		19
SD 03-01	Deer Creek Manor	84		75
	Misc. Parcel Maps	19		17
Totals		**364**		**326**

		Low	High
Total Water Demand (AF) for Proposed and Approved Projects		**1,174**	**1,760**

6.0 Water Treatment and Distribution

The water distribution system generally has had adequate pressure and storage, and has an excellent fire flow rating. The 1998 Master Water Plan, updated in 2004, identified water system deficiencies and made suggestions for ways to finance improvements. The City of Shasta Lake has made several major improvements to the water system since 2000.

In 2005, a $5 million loan was acquired from the State of California Infrastructure Bank (I-Bank) to construct a new 2.9-million-gallon water tank at the south end of Montana Avenue and complete improvements to increase capacity and reliability at the water plant, the BOR pump station, and the transmission mains carrying water into the City. This loan will be repaid with rates and impact fees.

Also in 2005, a $5 million Department of Water Resources (DWR) replacement grant financed the replacement and upsizing of several water mains that were in poor condition or needed upsizing for capacity, as described in the Master Water Plan. The grant also financed the replacement of 900 water services and meters and at least 50 fire hydrants.

The Master Water Plan identified several recommended improvements, including the addition of a raw water pump station at the base of the Dam, a 0.12 MG raw water storage tank, a third filter and additional of a standby power unit at the Water Treatment Plant. All of these improvements have been completed.

In 2001, the construction of Knauf Insulation, GmbH, helped fund a water inter-tie between the City of Shasta Lake and the City of Redding. The Redding inter-tie automatically pumps 350 gallons per minute of Redding water into Shasta Lake's system if the system pressure drops to 80 pounds per square inch (psi). As much as 1,000 gallons per minute can be pumped into the system in an emergency. With a valve change, Shasta Lake's pressure can push water into the Redding water system in an emergency.

The City of Shasta Lake also has established an inter-tie with the Bella Vista Water District. This is an emergency inter-tie and must be manually initiated. Shasta Lake can pump 900 gallons per minute from Bella Vista into the City's water system. As a reciprocal backup, Shasta Lake can push at least 1,000 gallons per minute into Bella Vista's system in an emergency affecting that agency.

The existing system pumps can meet the City's current needs when all pumps are operational.[3] The City currently has nine water storage reservoirs totaling 6.2 million gallons of storage. The existing system consists of approximately 300,000 feet (57 miles) of distribution lines, plus larger supply mains. The Master Water Plan identifies a need for water tank in the vicinity of the project. Although the Master Water Plan identifies the

[3] System pumps are used to ensure adequate water pressure in the delivery system. The City of Shasta Lake does not have any groundwater pumps.

water tank outside of the city limits, an alternative on-site location is shown as part of the project evaluated in the DEIR and is assumed for purposes of this WSA.

The City currently delivers an average of 4.8 MGD through its distribution system at peak demand. The treatment plant is capable of treating and distributing a maximum of approximately 9.72 MGD. Manifold piping exists at the treatment plant and could accommodate a fourth filter when the treatment plant nears capacity. The City also owns suitable property to construct a new water treatment plant in the future when the present water plant reaches its full capacity.

For determining capacity at the treatment plant, the Master Water Plan estimates Maximum Daily Demand (MDD) at 1,175 gallons per day (GPD) per household equivalent during the hottest times of the year. MDD for the proposed project at buildout is estimated at 2.0 MGD. MDD for the other proposed projects included in Table 4 would be approximately 0.43 MGD, for a total increase in MDD of 2.43 MGD. Therefore, there is adequate capacity in the treatment plant to accommodate the proposed project and other approved projects in the City.

7.0 City's Projected Supply and Demand Comparison

The City has contract water sufficient to provide up to 6,755 AF per year. The Master Water Plan included the subject property in the water demand analysis, with a development assumption of 2,141 HEs for a mixed-use development, and the demand for approximately 1,919 AF of water at full buildout.[4] This demand is less than the 848 to 1,434 AF shown in **Table 4**. When the other approved projects in the City are included, the total demand is between 1,174 and 1,760 AF per year (see **Table 4**).

The Master Water Plan estimates an annual water demand increase of 2.5 percent over a 20-year period. This figure is considered conservatively high by the City, as water delivery in the past five years has actually declined and has only recently begun to increase (see **Table 2**). In addition, the Master Water Plan projected that water demand in 2013 would be 3,786 AF, 36.4 percent more than the actual demand of 2,407 AF.

For purposes of this assessment, the anticipated 2.5 percent annual water demand rate from the Master Water Plan was applied to the average water deliveries in the previous three-year period from 2011 - 2013 (2,328 AF), resulting in a 20-year water demand for all customers in the City of 3,070 – 3,656 AF. The same percentage was applied to the five year period, from 2009-2013 (2,354 AF), resulting in a 20-year water demand for all customers in the City of 3,112 – 3,698 AF of water. For comparison, the 1.3 percent annual water demand rate was also calculated for the three- and five-year periods, resulting in a 20-year water demand for all customers of 2269 – 2855 AF and 2304 – 2890 AF respectively (see **Table 6**).

[4] The Master Water Plan assumed 2,141 HE, which calculates to 1,919 acre-feet per year.

In addition, two of the other approved projects shown in **Table 4** were included in the Master Water Plan with higher development assumptions. The Mountain Properties Subdivision is included in the Master Plan with 250 HEs/lots (approved for 164); and the Deer Creek Manor Subdivision is shown in the Master Plan with 145 HEs/lots (approved for 88), for a difference of 143 HEs for both of these projects. The 143 HEs reflect a total of approximately 128 AF of water. The other projects included in Table 4 were identified in the Master Water Plan in larger development areas, so it is not known whether the HEs are overestimated for these projects. For purposes of this analysis, only the Mountain Gate at Shasta project assumptions are adjusted as shown in **Table 4**.

If the 1,919 AF assumed for the Mountain Gate at Shasta Project is replaced by the figures in **Table 4**, the resulting 20-year water demand for all customers is less as shown in **Table 6**. The ranges shown are all below the 6,755 AF contract amount and demonstrate there is sufficient water to meet both the 20-year projected City demand and that of the proposed project.

Table 6 – 20-Year Water Growth Rate and Project Demand Comparison - Normal Year

Growth Assumptions	Three-Year Average – 2,328 AF (Table 2)		Five Year Average 2,354 AF (Table 2)	
	1.3%	2.5%	1.3%	2.5%
Projected City Water Demand in 20 Years for all customers	3,014	3,815	3,049	3,857
Proposed Project Water Demand Assigned in Master Water Plan	1,919	1,919	1,919	1,919
Proposed Project + Approved Projects Water Demand (Table 4)	Low: 1,174	Low: 1,174	Low: 1,174	Low: 1,174
	High: 1,760	High: 1,760	High: 1,760	High: 1,760
Difference between Master Water Plan Projections and Actual Projections (Table 4)	Low: -745	Low: -745	Low: -745	Low: -745
	High: -159	High: -159	High: -159	High: -159
Adjusted Demand for all Customers based on Master Water Plan Assumptions and Actual Project Demands	Low: 2,269	Low: 3,070	Low: 2,304	Low: 3,112
	High: 2,855	High: 3,656	High: 2,890	High: 3,698
Total Contract Water (BOR, ACID, MCM)	6,755	6,755	6,755	6,755
Remaining Water Available	Low: 4,486	Low: 3,685	Low: 4,451	Low: 3,643
	High: 3,900	High: 3,099	High: 3,865	High: 3,057

Table 6 does not take into account the use of reclaimed/recycled/graywater, replacement of fixtures with newer low-flow models, drought-tolerant landscaping, or further changes to the California Building Code, all of which will reduce water usage over the next 20 years.

As stated in Section 4.1 above, BOR may reduce the City's water allocation in any year based on the average water produced over the prior three years. The three-year average will likely increase each year as development and water demands increase. **Table 7** shows the impact of reductions in the BOR water allocations based on the three-year average from 2011 - 2013. As shown in the table, there is insufficient water to meet current demand if the City's allocation is reduced. However, the City is in negotiations with the McConnell Foundation to purchase up to 1,300 AF of supplemental water for 2014. In addition, if the City declares a Stage 3 or 4 Water Shortage Emergency pursuant to the Water Shortage Contingency Plan, mandatory rationing by all customers will offset the deficiencies.

Table 7 – Impact of Reduction Based on Current (2013) Demand of 2,407 AF

Three-Year Average of 2,643 AF			
BOR Reduction	**Total Reduction (AF)**	**Available Supply with Reduction**	**Balance of Available Water Based on Current (2013) Demand of 2,407 AF**
15%	-396	2,247	-160
25%	-661	1,982	-425
35%	-925	1,718	-689
50%	-1,322	1,322	-1,085

Because the City does not use groundwater, there would be no increase in pumping or other actions that would affect an aquifer. Only the deliveries from BOR would be reduced, and the City has no control over the amount or rate of reduction.

While **Table 6** shows that during a normal year the City will have sufficient water for all growth assumptions, **Table 7** illustrates that reductions imposed today would affect existing customers.

If the water emergency reductions were based on total contract amounts rather than annual average units of production, the City has sufficient water in long-term contracts through all but the most extreme water emergency scenarios (50% reduction at high demand) as shown in **Table 8.**

Table 8 – Water Supply Scenarios Applied to All Contract Water (6,755 AF) 20-Year Projection

Water Supply Reduction			Supply Available for all Customers (Table 4)	
%	Reduction (AF)	Reduced Allocation	Low Demand (3,070 AF)	High Demand (3,656 AF)
15%	1,013	5,742	2,672	2,086
25%	1,689	5,066	1,996	1,410
35%	2,364	4,391	1,321	735
50%	3,378	3,378	308	-279

As stated in Section 3.3 above, the City entered into agreement with ACID for the purchase of 2,000 AF of CVP water, and with MCM for the purchase of 325 AF of CVP water. However, BOR has not yet approved the transfer of this water due to concerns with potential impacts to the Cold Water Pool (CWP).

Under a worst case scenario, BOR would not approve these transfers pursuant to the executed contracts, and the City's available long-term water supply would be 4,457 AF (4,430 CVP allocation plus 140 AF ACID water). **Table 9** shows available water under the worst-case scenario, which assumes a 2.5% increase in water demand for all customers based on the three-year average shown in **Table 2**. The Table also assumes the City's average units of production for the three-years prior to any supply reduction would be the full allocation amount of 4,457 AF. **Table 9** shows that there is insufficient water for most of the water emergency scenarios.

Table 9 - Water Supplies Available Under Worst Case Scenario (4,457 AF – All Customers) 20-year Projection

Water Supply Reduction			Supply Available for all Customers (Table 4)	
%	Reduction (AF)	Reduced Allocation	Low Demand (3,070 AF)	High Demand (3,656 AF)
15%	669	3,788	718	132
25%	1,114	3,343	273	-313
35%	1,560	2,897	-173	-759
50%	2,229	2,229	-842	-1,428

8.0 Conclusions on Supply Reliability and Demand

Findings of Assured Water Supply for Project

Section 10911(c) of the Water Code states: "*The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses.*" A finding can be made that there is ensured water supply for the proposed ***Mountain Gate at Shasta Lake Project*** based on the analysis contained in this Water Supply Assessment.

Although **Table 7** and **Table 8** show that during years that BOR reduces the City's water allocation, there is insufficient water under most of the scenarios shown, the City would, at that time, purchase supplemental water as discussed above and/or declare a Water Shortage Emergency and implement the water rationing plan to offset any water supply deficiencies.

For purposes of CEQA, however, a determination must be made that during water emergency conditions there may be insufficient water to meet demand of the proposed project.

References

California Department of Finance, Demographic Research Unit. *Report E-4 Population Estimates for Cities, Counties and State, 2001–2013*.

California Department of Finance, Demographic Research Unit. *Report E-5 Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2013, with 2010 Benchmark*.

City of Shasta Lake. 2000. *Water Conservation Plan*.

City of Shasta Lake. 1994. *Water Shortage Contingency Plan*.

City of Shasta Lake. *Public Water System Statistics: 2002 through 2013*.

PACE Engineering. 2004. *Update to 1998 Master Water Plan*.

Appendices 4.11-1

4.11-2

GATEWAY UNIFIED SCHOOL DISTRICT LETTERS, 2012

JAMES M. HARRELL
Superintendent

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Committed To Good Citizenship And Life-Long Learning

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September 14, 2012

City of Shasta Lake
Carla L. Thompson, AICP
Development Services Director
P.O. Box 777
Shasta Lake, CA 96019

RE: Mountain Gate at Shasta Area Plan Project

Dear Ms. Thompson:

In following up with our meeting held on September 10, 2012 this letter addresses the Gateway Unified School District's (GUSD) needs pertaining to the Mountain Gate at Shasta Area Plan Project as follows:

- GUSD requests that 20 acres in Area G be set aside for a new school site that would include recreation fields (i.e. softball, soccer, etc.) adjacent to the school site which would be a shared use facility with the City of Shasta Lake. The school site would be located on one of the main thoroughfares in the developed area. (See Enclosure 1), *AND*

- GUSD requests that Area R (4.5 acres) be reserved for the district to allow for expansion of Grand Oaks Elementary School to accommodate new students; *OR*

- The developer (Mountain Gate Meadows, LLC) negotiate with the City of Shasta Lake to trade the Redevelopment Agency (RDA) parcels located south of Grand Oaks Elementary School with Area R and set aside this section for the district. (See Enclosure 2).

If you have any questions regarding this request, please give me a call at 245-7908.

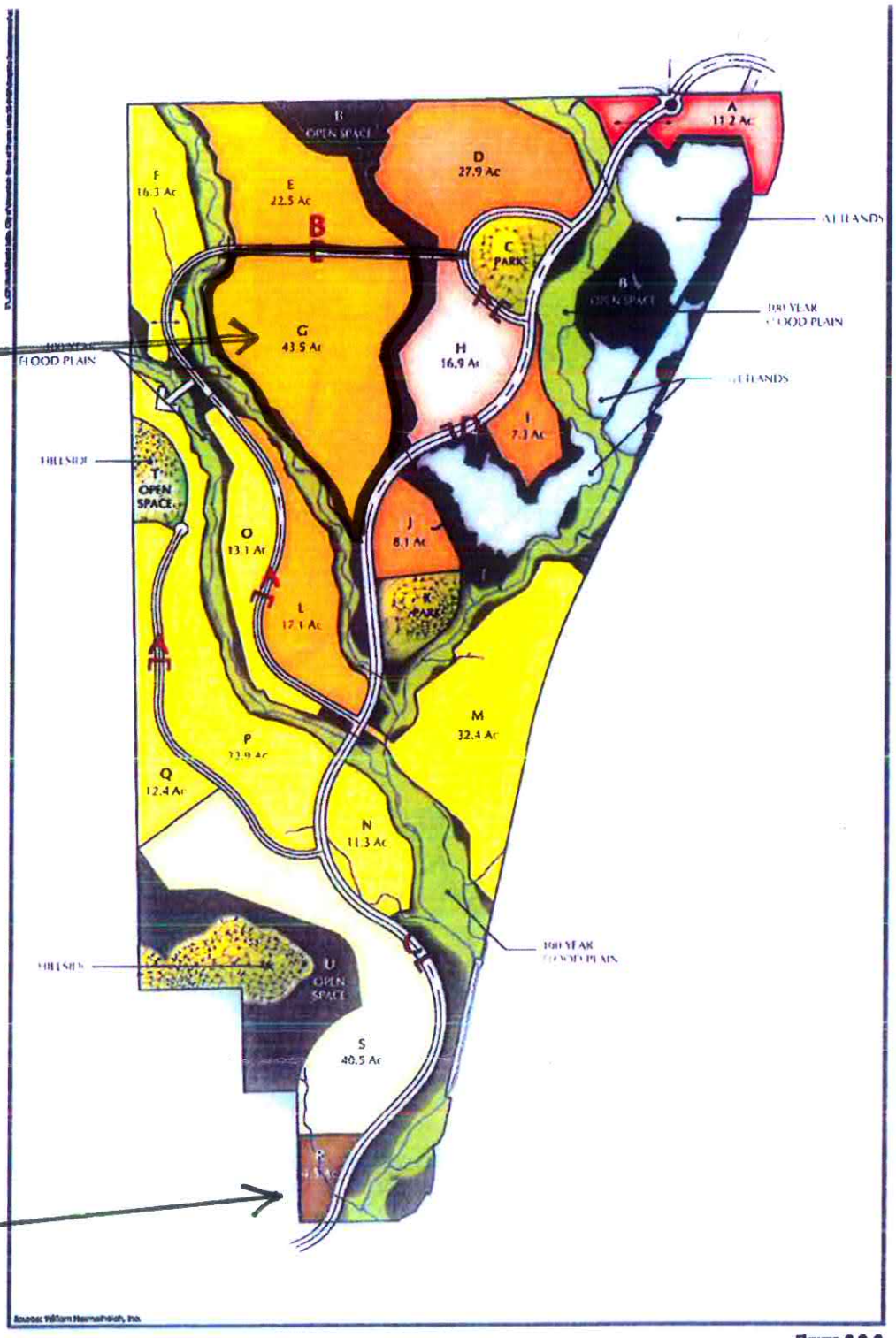
Sincerely,

James M. Harrell
Superintendent

Enclosures (2):
As stated

RECEIVED
SEP 17 2012
CITY OF SHASTA LAKE
PLANNING

Enclosure 1

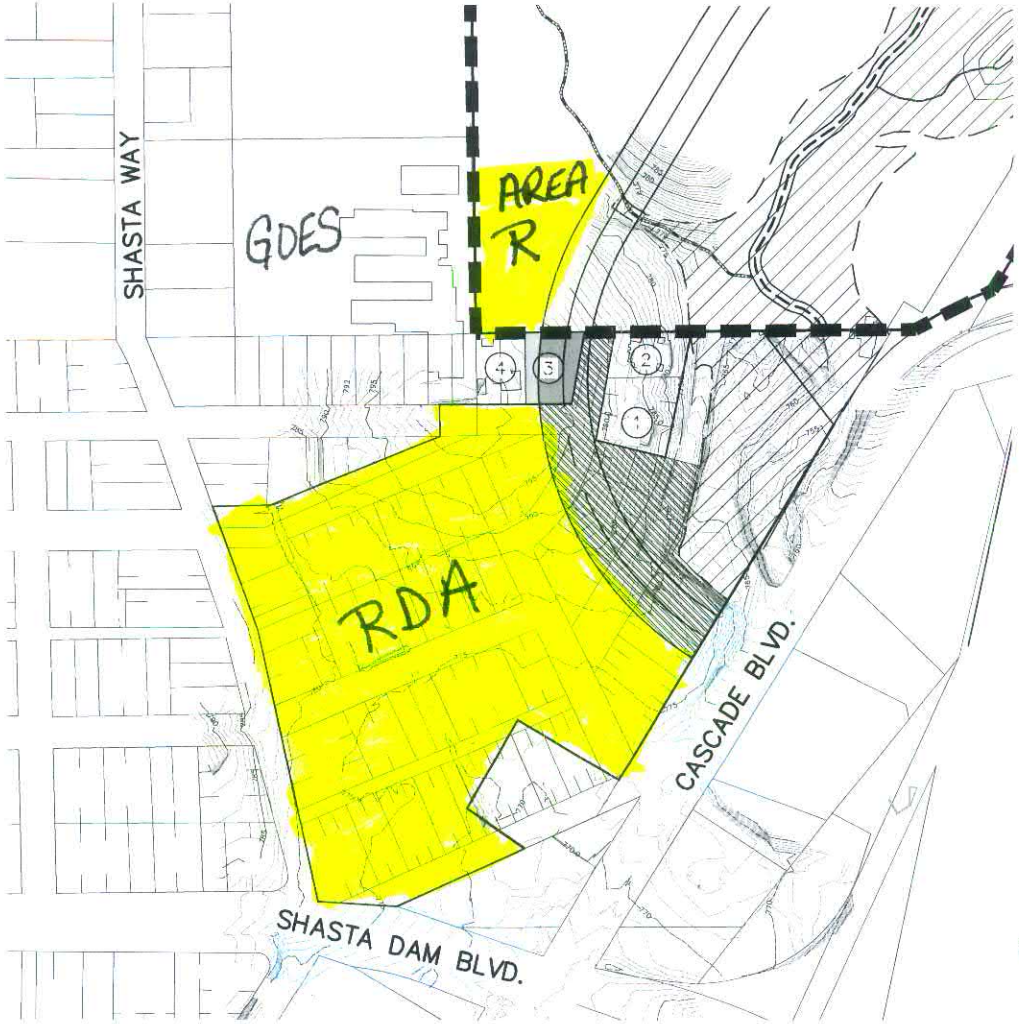


AREA G (Reserve 20 acres)

AREA R (4.5 acres)

Figure 3.0-3
Schematic Land Plan
Mountain Gate at Shasta Lake
PMC

Enclosure 2



OWNERS OF AFFECTED PARCELS

1. APN 007-380-034
ROBERT BRUCE HAGEMAN
1457 BUENA VISTA ST
SHASTA LAKE CITY CA 96019
(OCCUPIED)

2. APN 007-380-035
LESLIE LLOYD
1429 BUENA VISTA ST
SHASTA LAKE CA 96019
(OCCUPIED)

3. APN 007-380-004
CHRISTINE M ROCHA
5373 GRAND AVE
SHASTA LAKE CITY CA 96019
(OCCUPIED)

4. APN 007-380-003
ROBERT L ALGER
5369 GRAND AVE
SHASTA LAKE CITY CA 96019
(OCCUPIED)

LEGEND

- AFFECTED RESIDENTIAL PARCELS (1)
- AFFECTED AREA OF RESIDENTIAL PARCELS – 7,719 S.F.
- AFFECTED COMMERCIAL AREA – 70,342 S.F.
- 100 YEAR FLOODPLAIN

N

200 0 100 200

1 INCH = 200 FEET

MOUNTAIN GATE AT SHASTA

CONNECTION EXHIBIT 'B' CASCADE BOULEVARD

BY

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Structural Design • Planning
Landscape Architecture • Surveying • Presentation Graphics
6590 Lockheed Drive, Redding, CA 96002
530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

TO BE USED AS A VISUAL AID ONLY. LINEWORK DOES NOT REPRESENT, NOR IS IT INTENDED TO REPLACE SURVEY OR RECORDED PROPERTY INFORMATION.

DATE: AUGUST 31, 2011 SCALE: 1"=200' SHEET 1 OF 1

MD/MH/RL P:\proj\p\04122\dwg\Exhibit\04122 South Connection Exhibit.dwg

JAMES M. HARRELL
Superintendent

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4411 Mountain Lakes Blvd. ▪ Redding, CA 96003 ▪ (530) 245-7900 ▪ (530) 245-7920
www.gateway-schools.org

December 12, 2012

City of Shasta Lake
Attn: Carla Thompson, Development Services Director
P.O. Box 777
Shasta Lake, CA 96019

RE: Mountain Gate Project

Dear Ms. Thompson:

The Gateway Unified School District (District) provided a letter to the City of Shasta Lake (City) dated September 14, 2012, regarding specific requests for future school sites within the boundaries of the Mountain Gate at Shasta Area Plan Project. Following discussions with the City and applicant, the District acknowledges that it would be premature to identify the location and/or size of a potential school site(s) at this time.

It is our understanding that no dwelling units can be constructed within the Project without future approvals by the City (i.e., approval of Tentative Subdivision Maps). The District is in the process of updating its Master Plan and evaluating its overall facility needs, and it would be in the best interest of the District to identify any necessary site-specific school facilities during the Project's subsequent entitlement review phases.

We appreciate the time and communication that the City and the Mountain Gate Project representatives have taken in keeping the District involved. In the meantime, please do not hesitate to give me a call (530) 245-7908 or email at jharrell@gwusd.org should you need further assistance.

Sincerely,

James M. Harrell
Superintendent

cc: Harrison, Temblador, Hungerford & Johnson
(David Temblador)

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DEC 19 2012
CITY OF SHASTA LAKE
PLANNING

JAMES M. HARRELL
Superintendent

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PLANNING

APPENDIX 4.13-1

Construction Emissions

Metric Tons per Year

Off-Site Water Storage Tank - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Water Storage Tank	20.00	1000sqft	0.46	20,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	6/13/2014	10/24/2014
tblConstructionPhase	PhaseStartDate	1/25/2014	6/7/2014
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblProjectCharacteristics	OperationalYear	2014	2015
tblTripsAndVMT	VendorTripNumber	3.00	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	18.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.1806	1.4140	0.9531	1.3400e-003	0.0220	0.0927	0.1147	5.8600e-003	0.0855	0.0914	0.0000	122.7799	122.7799	0.0315	0.0000	123.4410
Total	**0.1806**	**1.4140**	**0.9531**	**1.3400e-003**	**0.0220**	**0.0927**	**0.1147**	**5.8600e-003**	**0.0855**	**0.0914**	**0.0000**	**122.7799**	**122.7799**	**0.0315**	**0.0000**	**123.4410**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.1806	1.4140	0.9531	1.3400e-003	0.0220	0.0927	0.1147	5.8600e-003	0.0855	0.0914	0.0000	122.7797	122.7797	0.0315	0.0000	123.4408
Total	**0.1806**	**1.4140**	**0.9531**	**1.3400e-003**	**0.0220**	**0.0927**	**0.1147**	**5.8600e-003**	**0.0855**	**0.0914**	**0.0000**	**122.7797**	**122.7797**	**0.0315**	**0.0000**	**123.4408**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/15/2014	1/15/2014	5	1	
2	Grading	Grading	1/16/2014	1/17/2014	5	2	
3	Paving	Paving	1/18/2014	1/24/2014	5	5	
4	Building Construction	Building Construction	6/7/2014	10/24/2014	5	100	

Acres of Grading (Site Preparation Phase): 0.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Building Construction	Cement and Mortar Mixers	4	6.00	9	0.56
Paving	Pavers	1	7.00	125	0.42
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	226	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Site Preparation	Graders	1	8.00	174	0.41
Building Construction	Pavers	1	7.00	125	0.42
Building Construction	Rollers	1	7.00	80	0.38
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37

Building Construction	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	8.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	12	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	7.2400e-003	3.7000e-003	0.0000		4.5000e-004	4.5000e-004		4.1000e-004	4.1000e-004	0.0000	0.4514	0.4514	1.3000e-004	0.0000	0.4542
Total	**7.2000e-004**	**7.2400e-003**	**3.7000e-003**	**0.0000**	**2.7000e-004**	**4.5000e-004**	**7.2000e-004**	**3.0000e-005**	**4.1000e-004**	**4.4000e-004**	**0.0000**	**0.4514**	**0.4514**	**1.3000e-004**	**0.0000**	**0.4542**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	2.0000e-005	2.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0197	0.0197	0.0000	0.0000	0.0198
Total	**6.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0197**	**0.0197**	**0.0000**	**0.0000**	**0.0198**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.7000e-004	0.0000	2.7000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	7.2400e-003	3.7000e-003	0.0000		4.5000e-004	4.5000e-004		4.1000e-004	4.1000e-004	0.0000	0.4514	0.4514	1.3000e-004	0.0000	0.4542
Total	**7.2000e-004**	**7.2400e-003**	**3.7000e-003**	**0.0000**	**2.7000e-004**	**4.5000e-004**	**7.2000e-004**	**3.0000e-005**	**4.1000e-004**	**4.4000e-004**	**0.0000**	**0.4514**	**0.4514**	**1.3000e-004**	**0.0000**	**0.4542**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	2.0000e-005	2.0000e-004	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0197	0.0197	0.0000	0.0000	0.0198
Total	**6.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0197**	**0.0197**	**0.0000**	**0.0000**	**0.0198**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0125	8.8500e-003	1.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	1.0952	1.0952	2.3000e-004	0.0000	1.1000
Total	**1.4900e-003**	**0.0125**	**8.8500e-003**	**1.0000e-005**	**7.5000e-004**	**9.3000e-004**	**1.6800e-003**	**4.1000e-004**	**8.9000e-004**	**1.3000e-003**	**0.0000**	**1.0952**	**1.0952**	**2.3000e-004**	**0.0000**	**1.1000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	8.0000e-005	8.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0790	0.0790	1.0000e-005	0.0000	0.0791
Total	**2.4000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0790**	**0.0790**	**1.0000e-005**	**0.0000**	**0.0791**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.5000e-004	0.0000	7.5000e-004	4.1000e-004	0.0000	4.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4900e-003	0.0125	8.8500e-003	1.0000e-005		9.3000e-004	9.3000e-004		8.9000e-004	8.9000e-004	0.0000	1.0952	1.0952	2.3000e-004	0.0000	1.1000
Total	**1.4900e-003**	**0.0125**	**8.8500e-003**	**1.0000e-005**	**7.5000e-004**	**9.3000e-004**	**1.6800e-003**	**4.1000e-004**	**8.9000e-004**	**1.3000e-003**	**0.0000**	**1.0952**	**1.0952**	**2.3000e-004**	**0.0000**	**1.1000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.4000e-004	8.0000e-005	8.1000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0790	0.0790	1.0000e-005	0.0000	0.0791
Total	**2.4000e-004**	**8.0000e-005**	**8.1000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0790**	**0.0790**	**1.0000e-005**	**0.0000**	**0.0791**

3.4 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0800e-003	0.0296	0.0184	3.0000e-005		1.8600e-003	1.8600e-003		1.7200e-003	1.7200e-003	0.0000	2.5022	2.5022	6.7000e-004	0.0000	2.5164
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0800e-003**	**0.0296**	**0.0184**	**3.0000e-005**		**1.8600e-003**	**1.8600e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**2.5022**	**2.5022**	**6.7000e-004**	**0.0000**	**2.5164**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	3.6000e-004	3.6600e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3554	0.3554	3.0000e-005	0.0000	0.3559
Total	**1.1000e-003**	**3.6000e-004**	**3.6600e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3554**	**0.3554**	**3.0000e-005**	**0.0000**	**0.3559**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0800e-003	0.0296	0.0184	3.0000e-005		1.8600e-003	1.8600e-003		1.7200e-003	1.7200e-003	0.0000	2.5022	2.5022	6.7000e-004	0.0000	2.5164
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.0800e-003**	**0.0296**	**0.0184**	**3.0000e-005**		**1.8600e-003**	**1.8600e-003**		**1.7200e-003**	**1.7200e-003**	**0.0000**	**2.5022**	**2.5022**	**6.7000e-004**	**0.0000**	**2.5164**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	3.6000e-004	3.6600e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3554	0.3554	3.0000e-005	0.0000	0.3559
Total	**1.1000e-003**	**3.6000e-004**	**3.6600e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3554**	**0.3554**	**3.0000e-005**	**0.0000**	**0.3559**

3.5 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1363	1.3344	0.7849	1.1200e-003		0.0890	0.0890		0.0820	0.0820	0.0000	104.6724	104.6724	0.0296	0.0000	105.2946
Total	**0.1363**	**1.3344**	**0.7849**	**1.1200e-003**		**0.0890**	**0.0890**		**0.0820**	**0.0820**	**0.0000**	**104.6724**	**104.6724**	**0.0296**	**0.0000**	**105.2946**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9600e-003	0.0194	0.0267	4.0000e-005	1.6400e-003	3.7000e-004	2.0100e-003	4.4000e-004	3.4000e-004	7.8000e-004	0.0000	3.3383	3.3383	3.0000e-005	0.0000	3.3390
Worker	0.0317	0.0104	0.1059	1.3000e-004	0.0189	1.1000e-004	0.0190	4.8500e-003	1.0000e-004	4.9600e-003	0.0000	10.2663	10.2663	7.5000e-004	0.0000	10.2821
Total	**0.0376**	**0.0298**	**0.1326**	**1.7000e-004**	**0.0206**	**4.8000e-004**	**0.0210**	**5.2900e-003**	**4.4000e-004**	**5.7400e-003**	**0.0000**	**13.6045**	**13.6045**	**7.8000e-004**	**0.0000**	**13.6210**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1363	1.3344	0.7849	1.1200e-003		0.0890	0.0890		0.0820	0.0820	0.0000	104.6723	104.6723	0.0296	0.0000	105.2945
Total	**0.1363**	**1.3344**	**0.7849**	**1.1200e-003**		**0.0890**	**0.0890**		**0.0820**	**0.0820**	**0.0000**	**104.6723**	**104.6723**	**0.0296**	**0.0000**	**105.2945**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.9600e-003	0.0194	0.0267	4.0000e-005	1.6400e-003	3.7000e-004	2.0100e-003	4.4000e-004	3.4000e-004	7.8000e-004	0.0000	3.3383	3.3383	3.0000e-005	0.0000	3.3390
Worker	0.0317	0.0104	0.1059	1.3000e-004	0.0189	1.1000e-004	0.0190	4.8500e-003	1.0000e-004	4.9600e-003	0.0000	10.2663	10.2663	7.5000e-004	0.0000	10.2821
Total	**0.0376**	**0.0298**	**0.1326**	**1.7000e-004**	**0.0206**	**4.8000e-004**	**0.0210**	**5.2900e-003**	**4.4000e-004**	**5.7400e-003**	**0.0000**	**13.6045**	**13.6045**	**7.8000e-004**	**0.0000**	**13.6210**

Area C - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	7.30	Acre	7.30	317,988.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading - Acreage = 7.3

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	PhaseEndDate	4/8/2014	2/24/2015
tblConstructionPhase	PhaseStartDate	3/12/2014	1/28/2015
tblGrading	AcresOfGrading	10.00	7.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0710	0.7010	0.5019	5.2000e-004	0.1563	0.0394	0.1957	0.0837	0.0363	0.1199	0.0000	49.4352	49.4352	0.0142	0.0000	49.7331
Year Two	0.0264	0.2528	0.1602	2.4000e-004	1.1700e-003	0.0142	0.0153	3.1000e-004	0.0130	0.0133	0.0000	22.3692	22.3692	6.4100e-003	0.0000	22.5039
Total	**0.0973**	**0.9538**	**0.6621**	**7.6000e-004**	**0.1575**	**0.0536**	**0.2111**	**0.0840**	**0.0493**	**0.1333**	**0.0000**	**71.8044**	**71.8044**	**0.0206**	**0.0000**	**72.2370**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0710	0.7010	0.5019	5.2000e-004	0.1563	0.0394	0.1957	0.0837	0.0363	0.1199	0.0000	49.4351	49.4351	0.0142	0.0000	49.7331
Year Two	0.0264	0.2528	0.1602	2.4000e-004	1.1700e-003	0.0142	0.0153	3.1000e-004	0.0130	0.0133	0.0000	22.3692	22.3692	6.4100e-003	0.0000	22.5038
Total	**0.0973**	**0.9538**	**0.6621**	**7.6000e-004**	**0.1575**	**0.0536**	**0.2111**	**0.0840**	**0.0493**	**0.1333**	**0.0000**	**71.8043**	**71.8043**	**0.0206**	**0.0000**	**72.2369**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Paving	Paving	1/28/2015	2/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.3

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0641	0.0000	0.0641	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6891	28.6891	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0641**	**0.0237**	**0.0878**	**0.0335**	**0.0218**	**0.0553**	**0.0000**	**28.6891**	**28.6891**	**8.4800e-003**	**0.0000**	**28.8671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0641	0.0000	0.0641	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6890	28.6890	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0641**	**0.0237**	**0.0878**	**0.0335**	**0.0218**	**0.0553**	**0.0000**	**28.6890**	**28.6890**	**8.4800e-003**	**0.0000**	**28.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

3.4 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Area D - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	176.00	Dwelling Unit	27.90	176,000.00	503

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 27.9

Construction Phase - Painting phase = 44 days

Grading - Total acreage = 27.9

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	44.00
tblGrading	AcresOfGrading	112.50	27.90
tblLandUse	LotAcreage	11.00	27.90
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.9786	5.8002	4.8421	6.1500e-003	0.4450	0.3427	0.7877	0.2060	0.3199	0.5259	0.0000	557.0570	557.0570	0.1199	0.0000	559.5751
Year Two	0.8728	4.2413	3.8594	5.5600e-003	0.1369	0.2758	0.4127	0.0368	0.2590	0.2957	0.0000	485.5322	485.5322	0.0885	0.0000	487.3899
Year Three	2.7930	0.2578	0.2155	3.3000e-004	5.3500e-003	0.0157	0.0211	1.4300e-003	0.0148	0.0162	0.0000	29.5521	29.5521	6.6800e-003	0.0000	29.6923
Total	**4.6444**	**10.2992**	**8.9170**	**0.0120**	**0.5872**	**0.6343**	**1.2215**	**0.2442**	**0.5937**	**0.8379**	**0.0000**	**1,072.1413**	**1,072.1413**	**0.2151**	**0.0000**	**1,076.6573**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.9786	5.8002	4.8421	6.1500e-003	0.4450	0.3427	0.7877	0.2060	0.3199	0.5259	0.0000	557.0565	557.0565	0.1199	0.0000	559.5746
Year Two	0.8728	4.2413	3.8594	5.5600e-003	0.1369	0.2758	0.4127	0.0368	0.2590	0.2957	0.0000	485.5318	485.5318	0.0885	0.0000	487.3895
Year Three	2.7930	0.2578	0.2155	3.3000e-004	5.3500e-003	0.0157	0.0211	1.4300e-003	0.0148	0.0162	0.0000	29.5521	29.5521	6.6800e-003	0.0000	29.6923
Total	**4.6444**	**10.2992**	**8.9170**	**0.0120**	**0.5872**	**0.6343**	**1.2215**	**0.2442**	**0.5937**	**0.8379**	**0.0000**	**1,072.1404**	**1,072.1404**	**0.2151**	**0.0000**	**1,076.6564**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/28/2014	5	20	
2	Grading	Grading	1/29/2014	4/1/2014	5	45	
3	Building Construction	Building Construction	4/2/2014	12/8/2015	5	440	
4	Paving	Paving	12/9/2015	1/26/2016	5	35	
5	Architectural Coating	Architectural Coating	1/27/2016	3/28/2016	5	44	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 27.9

Acres of Paving: 0

Residential Indoor: 356,400; Residential Outdoor: 118,800; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42

Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	127.00	19.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	25.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9356
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237
Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9355
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237
Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1503	0.0000	0.1503	0.0761	0.0000	0.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7950	133.7950	0.0395	0.0000	134.6253
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1503**	**0.0873**	**0.2376**	**0.0761**	**0.0803**	**0.1564**	**0.0000**	**133.7950**	**133.7950**	**0.0395**	**0.0000**	**134.6253**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1503	0.0000	0.1503	0.0761	0.0000	0.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7949	133.7949	0.0395	0.0000	134.6252
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1503**	**0.0873**	**0.2376**	**0.0761**	**0.0803**	**0.1564**	**0.0000**	**133.7949**	**133.7949**	**0.0395**	**0.0000**	**134.6252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3791	3.0629	1.8551	2.6300e-003		0.2183	0.2183		0.2055	0.2055	0.0000	240.8587	240.8587	0.0612	0.0000	242.1448
Total	**0.3791**	**3.0629**	**1.8551**	**2.6300e-003**		**0.2183**	**0.2183**		**0.2055**	**0.2055**	**0.0000**	**240.8587**	**240.8587**	**0.0612**	**0.0000**	**242.1448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0740	0.2403	0.3319	4.5000e-004	0.0119	4.5700e-003	0.0165	3.4200e-003	4.2000e-003	7.6100e-003	0.0000	41.4388	41.4388	4.1000e-004	0.0000	41.4475
Worker	0.3032	0.0996	1.0135	1.2300e-003	0.0973	1.1000e-003	0.0984	0.0259	9.8000e-004	0.0269	0.0000	98.2876	98.2876	7.2100e-003	0.0000	98.4391
Total	**0.3772**	**0.3398**	**1.3454**	**1.6800e-003**	**0.1091**	**5.6700e-003**	**0.1148**	**0.0293**	**5.1800e-003**	**0.0345**	**0.0000**	**139.7265**	**139.7265**	**7.6200e-003**	**0.0000**	**139.8866**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3791	3.0629	1.8551	2.6300e-003		0.2183	0.2183		0.2055	0.2055	0.0000	240.8584	240.8584	0.0612	0.0000	242.1445
Total	**0.3791**	**3.0629**	**1.8551**	**2.6300e-003**		**0.2183**	**0.2183**		**0.2055**	**0.2055**	**0.0000**	**240.8584**	**240.8584**	**0.0612**	**0.0000**	**242.1445**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0740	0.2403	0.3319	4.5000e-004	0.0119	4.5700e-003	0.0165	3.4200e-003	4.2000e-003	7.6100e-003	0.0000	41.4388	41.4388	4.1000e-004	0.0000	41.4475
Worker	0.3032	0.0996	1.0135	1.2300e-003	0.0973	1.1000e-003	0.0984	0.0259	9.8000e-004	0.0269	0.0000	98.2876	98.2876	7.2100e-003	0.0000	98.4391
Total	**0.3772**	**0.3398**	**1.3454**	**1.6800e-003**	**0.1091**	**5.6700e-003**	**0.1148**	**0.0293**	**5.1800e-003**	**0.0345**	**0.0000**	**139.7265**	**139.7265**	**7.6200e-003**	**0.0000**	**139.8866**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4464	3.6637	2.2868	3.2700e-003		0.2582	0.2582		0.2428	0.2428	0.0000	297.6731	297.6731	0.0747	0.0000	299.2415
Total	**0.4464**	**3.6637**	**2.2868**	**3.2700e-003**		**0.2582**	**0.2582**		**0.2428**	**0.2428**	**0.0000**	**297.6731**	**297.6731**	**0.0747**	**0.0000**	**299.2415**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0734	0.2560	0.3631	5.6000e-004	0.0148	4.3200e-003	0.0191	4.2500e-003	3.9700e-003	8.2200e-003	0.0000	50.8859	50.8859	4.4000e-004	0.0000	50.8952
Worker	0.3306	0.1068	1.0733	1.5300e-003	0.1211	1.2300e-003	0.1223	0.0322	1.1000e-003	0.0333	0.0000	117.9594	117.9594	7.8800e-003	0.0000	118.1249
Total	**0.4040**	**0.3628**	**1.4364**	**2.0900e-003**	**0.1359**	**5.5500e-003**	**0.1414**	**0.0365**	**5.0700e-003**	**0.0416**	**0.0000**	**168.8453**	**168.8453**	**8.3200e-003**	**0.0000**	**169.0201**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4464	3.6637	2.2868	3.2700e-003		0.2582	0.2582		0.2428	0.2428	0.0000	297.6727	297.6727	0.0747	0.0000	299.2412
Total	**0.4464**	**3.6637**	**2.2868**	**3.2700e-003**		**0.2582**	**0.2582**		**0.2428**	**0.2428**	**0.0000**	**297.6727**	**297.6727**	**0.0747**	**0.0000**	**299.2412**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0734	0.2560	0.3631	5.6000e-004	0.0148	4.3200e-003	0.0191	4.2500e-003	3.9700e-003	8.2200e-003	0.0000	50.8859	50.8859	4.4000e-004	0.0000	50.8952
Worker	0.3306	0.1068	1.0733	1.5300e-003	0.1211	1.2300e-003	0.1223	0.0322	1.1000e-003	0.0333	0.0000	117.9594	117.9594	7.8800e-003	0.0000	118.1249
Total	**0.4040**	**0.3628**	**1.4364**	**2.0900e-003**	**0.1359**	**5.5500e-003**	**0.1414**	**0.0365**	**5.0700e-003**	**0.0416**	**0.0000**	**168.8453**	**168.8453**	**8.3200e-003**	**0.0000**	**169.0201**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.2140	0.1273	1.9000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	18.0431	18.0431	5.3900e-003	0.0000	18.1562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0197**	**0.2140**	**0.1273**	**1.9000e-004**		**0.0120**	**0.0120**		**0.0111**	**0.0111**	**0.0000**	**18.0431**	**18.0431**	**5.3900e-003**	**0.0000**	**18.1562**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7200e-003	8.8000e-004	8.8300e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.9707	0.9707	6.0000e-005	0.0000	0.9721
Total	**2.7200e-003**	**8.8000e-004**	**8.8300e-003**	**1.0000e-005**	**1.0000e-003**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9707**	**0.9707**	**6.0000e-005**	**0.0000**	**0.9721**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.2140	0.1273	1.9000e-004		0.0120	0.0120		0.0111	0.0111	0.0000	18.0431	18.0431	5.3900e-003	0.0000	18.1562
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0197**	**0.2140**	**0.1273**	**1.9000e-004**		**0.0120**	**0.0120**		**0.0111**	**0.0111**	**0.0000**	**18.0431**	**18.0431**	**5.3900e-003**	**0.0000**	**18.1562**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.7200e-003	8.8000e-004	8.8300e-003	1.0000e-005	1.0000e-003	1.0000e-005	1.0100e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.9707	0.9707	6.0000e-005	0.0000	0.9721
Total	**2.7200e-003**	**8.8000e-004**	**8.8300e-003**	**1.0000e-005**	**1.0000e-003**	**1.0000e-005**	**1.0100e-003**	**2.7000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9707**	**0.9707**	**6.0000e-005**	**0.0000**	**0.9721**

3.5 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0188	0.2015	0.1334	2.0000e-004		0.0114	0.0114		0.0104	0.0104	0.0000	18.9124	18.9124	5.7000e-003	0.0000	19.0322
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0188**	**0.2015**	**0.1334**	**2.0000e-004**		**0.0114**	**0.0114**		**0.0104**	**0.0104**	**0.0000**	**18.9124**	**18.9124**	**5.7000e-003**	**0.0000**	**19.0322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	8.1000e-004	8.0200e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9898	0.9898	6.0000e-005	0.0000	0.9911
Total	**2.5400e-003**	**8.1000e-004**	**8.0200e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9898**	**0.9898**	**6.0000e-005**	**0.0000**	**0.9911**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0188	0.2015	0.1334	2.0000e-004		0.0114	0.0114		0.0104	0.0104	0.0000	18.9124	18.9124	5.7000e-003	0.0000	19.0322
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0188**	**0.2015**	**0.1334**	**2.0000e-004**		**0.0114**	**0.0114**		**0.0104**	**0.0104**	**0.0000**	**18.9124**	**18.9124**	**5.7000e-003**	**0.0000**	**19.0322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5400e-003	8.1000e-004	8.0200e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0600e-003	2.8000e-004	1.0000e-005	2.9000e-004	0.0000	0.9898	0.9898	6.0000e-005	0.0000	0.9911
Total	**2.5400e-003**	**8.1000e-004**	**8.0200e-003**	**1.0000e-005**	**1.0500e-003**	**1.0000e-005**	**1.0600e-003**	**2.8000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9898**	**0.9898**	**6.0000e-005**	**0.0000**	**0.9911**

3.6 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7532					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1100e-003	0.0522	0.0415	7.0000e-005		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	5.6172	5.6172	6.6000e-004	0.0000	5.6311
Total	**2.7613**	**0.0522**	**0.0415**	**7.0000e-005**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**5.6172**	**5.6172**	**6.6000e-004**	**0.0000**	**5.6311**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0104	3.2900e-003	0.0327	5.0000e-005	4.3000e-003	4.0000e-005	4.3400e-003	1.1400e-003	4.0000e-005	1.1800e-003	0.0000	4.0327	4.0327	2.5000e-004	0.0000	4.0379
Total	**0.0104**	**3.2900e-003**	**0.0327**	**5.0000e-005**	**4.3000e-003**	**4.0000e-005**	**4.3400e-003**	**1.1400e-003**	**4.0000e-005**	**1.1800e-003**	**0.0000**	**4.0327**	**4.0327**	**2.5000e-004**	**0.0000**	**4.0379**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.7532					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1100e-003	0.0522	0.0415	7.0000e-005		4.3300e-003	4.3300e-003		4.3300e-003	4.3300e-003	0.0000	5.6172	5.6172	6.6000e-004	0.0000	5.6311
Total	**2.7613**	**0.0522**	**0.0415**	**7.0000e-005**		**4.3300e-003**	**4.3300e-003**		**4.3300e-003**	**4.3300e-003**	**0.0000**	**5.6172**	**5.6172**	**6.6000e-004**	**0.0000**	**5.6311**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0104	3.2900e-003	0.0327	5.0000e-005	4.3000e-003	4.0000e-005	4.3400e-003	1.1400e-003	4.0000e-005	1.1800e-003	0.0000	4.0327	4.0327	2.5000e-004	0.0000	4.0379
Total	**0.0104**	**3.2900e-003**	**0.0327**	**5.0000e-005**	**4.3000e-003**	**4.0000e-005**	**4.3400e-003**	**1.1400e-003**	**4.0000e-005**	**1.1800e-003**	**0.0000**	**4.0327**	**4.0327**	**2.5000e-004**	**0.0000**	**4.0379**

Area E - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	142.00	Dwelling Unit	22.50	142,000.00	406

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 22.5

Construction Phase - Painting phase = 35 days

Grading - Acreage = 22.5

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	35.00
tblGrading	AcresOfGrading	87.50	22.50
tblLandUse	LotAcreage	8.88	22.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.8380	5.0368	4.0845	5.2900e-003	0.2986	0.3064	0.6050	0.1333	0.2866	0.4198	0.0000	478.9016	478.9016	0.1039	0.0000	481.0843
Year Two	2.8113	3.1181	2.6676	3.8400e-003	0.0816	0.2053	0.2869	0.0219	0.1929	0.2148	0.0000	337.9849	337.9849	0.0652	0.0000	339.3540
Total	**3.6493**	**8.1548**	**6.7521**	**9.1300e-003**	**0.3802**	**0.5118**	**0.8919**	**0.1552**	**0.4795**	**0.6347**	**0.0000**	**816.8865**	**816.8865**	**0.1691**	**0.0000**	**820.4383**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.8380	5.0367	4.0845	5.2900e-003	0.2986	0.3064	0.6050	0.1333	0.2866	0.4198	0.0000	478.9012	478.9012	0.1039	0.0000	481.0839
Year Two	2.8113	3.1181	2.6676	3.8400e-003	0.0816	0.2053	0.2869	0.0219	0.1929	0.2148	0.0000	337.9846	337.9846	0.0652	0.0000	339.3537
Total	**3.6493**	**8.1548**	**6.7521**	**9.1300e-003**	**0.3802**	**0.5118**	**0.8919**	**0.1552**	**0.4795**	**0.6347**	**0.0000**	**816.8858**	**816.8858**	**0.1691**	**0.0000**	**820.4376**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	4/1/2014	5	35	
3	Building Construction	Building Construction	4/2/2014	9/1/2015	5	370	
4	Paving	Paving	9/2/2015	9/29/2015	5	20	
5	Architectural Coating	Architectural Coating	9/30/2015	11/17/2015	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 22.5

Acres of Paving: 0

Residential Indoor: 287,550; Residential Outdoor: 95,850; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45
Grading	Scrapers	2	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	102.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1173	0.0000	0.1173	0.0592	0.0000	0.0592	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1198	1.4126	0.9027	1.0800e-003		0.0679	0.0679		0.0625	0.0625	0.0000	104.0628	104.0628	0.0308	0.0000	104.7086
Total	**0.1198**	**1.4126**	**0.9027**	**1.0800e-003**	**0.1173**	**0.0679**	**0.1852**	**0.0592**	**0.0625**	**0.1217**	**0.0000**	**104.0628**	**104.0628**	**0.0308**	**0.0000**	**104.7086**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5300e-003	2.8000e-003	0.0285	3.0000e-005	2.7300e-003	3.0000e-005	2.7700e-003	7.3000e-004	3.0000e-005	7.6000e-004	0.0000	2.7640	2.7640	2.0000e-004	0.0000	2.7683
Total	**8.5300e-003**	**2.8000e-003**	**0.0285**	**3.0000e-005**	**2.7300e-003**	**3.0000e-005**	**2.7700e-003**	**7.3000e-004**	**3.0000e-005**	**7.6000e-004**	**0.0000**	**2.7640**	**2.7640**	**2.0000e-004**	**0.0000**	**2.7683**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1173	0.0000	0.1173	0.0592	0.0000	0.0592	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1198	1.4126	0.9027	1.0800e-003		0.0679	0.0679		0.0625	0.0625	0.0000	104.0627	104.0627	0.0308	0.0000	104.7085
Total	**0.1198**	**1.4126**	**0.9027**	**1.0800e-003**	**0.1173**	**0.0679**	**0.1852**	**0.0592**	**0.0625**	**0.1217**	**0.0000**	**104.0627**	**104.0627**	**0.0308**	**0.0000**	**104.7085**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.5300e-003	2.8000e-003	0.0285	3.0000e-005	2.7300e-003	3.0000e-005	2.7700e-003	7.3000e-004	3.0000e-005	7.6000e-004	0.0000	2.7640	2.7640	2.0000e-004	0.0000	2.7683
Total	**8.5300e-003**	**2.8000e-003**	**0.0285**	**3.0000e-005**	**2.7300e-003**	**3.0000e-005**	**2.7700e-003**	**7.3000e-004**	**3.0000e-005**	**7.6000e-004**	**0.0000**	**2.7640**	**2.7640**	**2.0000e-004**	**0.0000**	**2.7683**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3791	3.0629	1.8551	2.6300e-003		0.2183	0.2183		0.2055	0.2055	0.0000	240.8587	240.8587	0.0612	0.0000	242.1448
Total	**0.3791**	**3.0629**	**1.8551**	**2.6300e-003**		**0.2183**	**0.2183**		**0.2055**	**0.2055**	**0.0000**	**240.8587**	**240.8587**	**0.0612**	**0.0000**	**242.1448**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0584	0.1897	0.2620	3.5000e-004	9.3900e-003	3.6100e-003	0.0130	2.7000e-003	3.3100e-003	6.0100e-003	0.0000	32.7149	32.7149	3.3000e-004	0.0000	32.7217
Worker	0.2435	0.0800	0.8140	9.9000e-004	0.0781	8.8000e-004	0.0790	0.0208	7.8000e-004	0.0216	0.0000	78.9397	78.9397	5.7900e-003	0.0000	79.0613
Total	**0.3019**	**0.2696**	**1.0760**	**1.3400e-003**	**0.0875**	**4.4900e-003**	**0.0920**	**0.0235**	**4.0900e-003**	**0.0276**	**0.0000**	**111.6546**	**111.6546**	**6.1200e-003**	**0.0000**	**111.7830**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3791	3.0629	1.8551	2.6300e-003		0.2183	0.2183		0.2055	0.2055	0.0000	240.8584	240.8584	0.0612	0.0000	242.1445
Total	**0.3791**	**3.0629**	**1.8551**	**2.6300e-003**		**0.2183**	**0.2183**		**0.2055**	**0.2055**	**0.0000**	**240.8584**	**240.8584**	**0.0612**	**0.0000**	**242.1445**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0584	0.1897	0.2620	3.5000e-004	9.3900e-003	3.6100e-003	0.0130	2.7000e-003	3.3100e-003	6.0100e-003	0.0000	32.7149	32.7149	3.3000e-004	0.0000	32.7217
Worker	0.2435	0.0800	0.8140	9.9000e-004	0.0781	8.8000e-004	0.0790	0.0208	7.8000e-004	0.0216	0.0000	78.9397	78.9397	5.7900e-003	0.0000	79.0613
Total	**0.3019**	**0.2696**	**1.0760**	**1.3400e-003**	**0.0875**	**4.4900e-003**	**0.0920**	**0.0235**	**4.0900e-003**	**0.0276**	**0.0000**	**111.6546**	**111.6546**	**6.1200e-003**	**0.0000**	**111.7830**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3183	2.6126	1.6308	2.3300e-003		0.1842	0.1842		0.1732	0.1732	0.0000	212.2751	212.2751	0.0533	0.0000	213.3935
Total	**0.3183**	**2.6126**	**1.6308**	**2.3300e-003**		**0.1842**	**0.1842**		**0.1732**	**0.1732**	**0.0000**	**212.2751**	**212.2751**	**0.0533**	**0.0000**	**213.3935**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0413	0.1441	0.2044	3.1000e-004	8.3300e-003	2.4300e-003	0.0108	2.3900e-003	2.2300e-003	4.6300e-003	0.0000	28.6480	28.6480	2.5000e-004	0.0000	28.6533
Worker	0.1894	0.0612	0.6147	8.7000e-004	0.0693	7.0000e-004	0.0700	0.0185	6.3000e-004	0.0191	0.0000	67.5598	67.5598	4.5100e-003	0.0000	67.6546
Total	**0.2307**	**0.2053**	**0.8191**	**1.1800e-003**	**0.0777**	**3.1300e-003**	**0.0808**	**0.0209**	**2.8600e-003**	**0.0237**	**0.0000**	**96.2078**	**96.2078**	**4.7600e-003**	**0.0000**	**96.3078**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3183	2.6126	1.6308	2.3300e-003		0.1842	0.1842		0.1732	0.1732	0.0000	212.2748	212.2748	0.0533	0.0000	213.3933
Total	**0.3183**	**2.6126**	**1.6308**	**2.3300e-003**		**0.1842**	**0.1842**		**0.1732**	**0.1732**	**0.0000**	**212.2748**	**212.2748**	**0.0533**	**0.0000**	**213.3933**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0413	0.1441	0.2044	3.1000e-004	8.3300e-003	2.4300e-003	0.0108	2.3900e-003	2.2300e-003	4.6300e-003	0.0000	28.6480	28.6480	2.5000e-004	0.0000	28.6533
Worker	0.1894	0.0612	0.6147	8.7000e-004	0.0693	7.0000e-004	0.0700	0.0185	6.3000e-004	0.0191	0.0000	67.5598	67.5598	4.5100e-003	0.0000	67.6546
Total	**0.2307**	**0.2053**	**0.8191**	**1.1800e-003**	**0.0777**	**3.1300e-003**	**0.0808**	**0.0209**	**2.8600e-003**	**0.0237**	**0.0000**	**96.2078**	**96.2078**	**4.7600e-003**	**0.0000**	**96.3078**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1200e-003	0.0450	0.0333	5.0000e-005		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	4.4682	4.4682	5.8000e-004	0.0000	4.4804
Total	**2.2284**	**0.0450**	**0.0333**	**5.0000e-005**		**3.8700e-003**	**3.8700e-003**		**3.8700e-003**	**3.8700e-003**	**0.0000**	**4.4682**	**4.4682**	**5.8000e-004**	**0.0000**	**4.4804**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4700e-003	2.4100e-003	0.0242	3.0000e-005	2.7300e-003	3.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.6646	2.6646	1.8000e-004	0.0000	2.6684
Total	**7.4700e-003**	**2.4100e-003**	**0.0242**	**3.0000e-005**	**2.7300e-003**	**3.0000e-005**	**2.7600e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.6646**	**2.6646**	**1.8000e-004**	**0.0000**	**2.6684**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.2213					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.1200e-003	0.0450	0.0333	5.0000e-005		3.8700e-003	3.8700e-003		3.8700e-003	3.8700e-003	0.0000	4.4682	4.4682	5.8000e-004	0.0000	4.4804
Total	**2.2284**	**0.0450**	**0.0333**	**5.0000e-005**		**3.8700e-003**	**3.8700e-003**		**3.8700e-003**	**3.8700e-003**	**0.0000**	**4.4682**	**4.4682**	**5.8000e-004**	**0.0000**	**4.4804**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4700e-003	2.4100e-003	0.0242	3.0000e-005	2.7300e-003	3.0000e-005	2.7600e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.6646	2.6646	1.8000e-004	0.0000	2.6684
Total	**7.4700e-003**	**2.4100e-003**	**0.0242**	**3.0000e-005**	**2.7300e-003**	**3.0000e-005**	**2.7600e-003**	**7.3000e-004**	**2.0000e-005**	**7.5000e-004**	**0.0000**	**2.6646**	**2.6646**	**1.8000e-004**	**0.0000**	**2.6684**

Area F - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	30.00	Dwelling Unit	16.30	54,000.00	86

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 16.3

Construction Phase - Painting Phase = 30 days

Grading - Acreage = 16.3

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	16.30
tblLandUse	LotAcreage	9.74	16.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5663	4.6908	3.0665	4.0400e-003	0.2029	0.2987	0.5016	0.1039	0.2795	0.3835	0.0000	373.5706	373.5706	0.0957	0.0000	375.5796
Year Two	1.0753	1.7982	1.1796	1.7000e-003	6.6100e-003	0.1226	0.1292	1.7800e-003	0.1152	0.1169	0.0000	154.6100	154.6100	0.0375	0.0000	155.3983
Total	**1.6416**	**6.4890**	**4.2461**	**5.7400e-003**	**0.2095**	**0.4212**	**0.6308**	**0.1057**	**0.3947**	**0.5004**	**0.0000**	**528.1806**	**528.1806**	**0.1332**	**0.0000**	**530.9779**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5663	4.6908	3.0665	4.0400e-003	0.2029	0.2987	0.5016	0.1039	0.2795	0.3835	0.0000	373.5702	373.5702	0.0957	0.0000	375.5792
Year Two	1.0753	1.7982	1.1796	1.7000e-003	6.6100e-003	0.1226	0.1292	1.7800e-003	0.1152	0.1169	0.0000	154.6098	154.6098	0.0375	0.0000	155.3981
Total	**1.6416**	**6.4890**	**4.2461**	**5.7400e-003**	**0.2095**	**0.4212**	**0.6308**	**0.1057**	**0.3947**	**0.5004**	**0.0000**	**528.1800**	**528.1800**	**0.1332**	**0.0000**	**530.9773**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.3

Acres of Paving: 0

Residential Indoor: 109,350; Residential Outdoor: 36,450; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	11.00	3.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	2.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0990	0.0000	0.0990	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0990**	**0.0582**	**0.1572**	**0.0506**	**0.0535**	**0.1041**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0990	0.0000	0.0990	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0990**	**0.0582**	**0.1572**	**0.0506**	**0.0535**	**0.1041**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.0389	0.0538	7.0000e-005	1.9300e-003	7.4000e-004	2.6700e-003	5.5000e-004	6.8000e-004	1.2300e-003	0.0000	6.7099	6.7099	7.0000e-005	0.0000	6.7113
Worker	0.0269	8.8400e-003	0.0900	1.1000e-004	8.6400e-003	1.0000e-004	8.7400e-003	2.3000e-003	9.0000e-005	2.3900e-003	0.0000	8.7303	8.7303	6.4000e-004	0.0000	8.7437
Total	**0.0389**	**0.0477**	**0.1438**	**1.8000e-004**	**0.0106**	**8.4000e-004**	**0.0114**	**2.8500e-003**	**7.7000e-004**	**3.6200e-003**	**0.0000**	**15.4402**	**15.4402**	**7.1000e-004**	**0.0000**	**15.4550**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0120	0.0389	0.0538	7.0000e-005	1.9300e-003	7.4000e-004	2.6700e-003	5.5000e-004	6.8000e-004	1.2300e-003	0.0000	6.7099	6.7099	7.0000e-005	0.0000	6.7113
Worker	0.0269	8.8400e-003	0.0900	1.1000e-004	8.6400e-003	1.0000e-004	8.7400e-003	2.3000e-003	9.0000e-005	2.3900e-003	0.0000	8.7303	8.7303	6.4000e-004	0.0000	8.7437
Total	**0.0389**	**0.0477**	**0.1438**	**1.8000e-004**	**0.0106**	**8.4000e-004**	**0.0114**	**2.8500e-003**	**7.7000e-004**	**3.6200e-003**	**0.0000**	**15.4402**	**15.4402**	**7.1000e-004**	**0.0000**	**15.4550**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-003	0.0164	0.0233	4.0000e-005	9.5000e-004	2.8000e-004	1.2200e-003	2.7000e-004	2.5000e-004	5.3000e-004	0.0000	3.2600	3.2600	3.0000e-005	0.0000	3.2605
Worker	0.0116	3.7500e-003	0.0377	5.0000e-005	4.2500e-003	4.0000e-005	4.3000e-003	1.1300e-003	4.0000e-005	1.1700e-003	0.0000	4.1454	4.1454	2.8000e-004	0.0000	4.1512
Total	**0.0163**	**0.0202**	**0.0610**	**9.0000e-005**	**5.2000e-003**	**3.2000e-004**	**5.5200e-003**	**1.4000e-003**	**2.9000e-004**	**1.7000e-003**	**0.0000**	**7.4054**	**7.4054**	**3.1000e-004**	**0.0000**	**7.4118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.7000e-003	0.0164	0.0233	4.0000e-005	9.5000e-004	2.8000e-004	1.2200e-003	2.7000e-004	2.5000e-004	5.3000e-004	0.0000	3.2600	3.2600	3.0000e-005	0.0000	3.2605
Worker	0.0116	3.7500e-003	0.0377	5.0000e-005	4.2500e-003	4.0000e-005	4.3000e-003	1.1300e-003	4.0000e-005	1.1700e-003	0.0000	4.1454	4.1454	2.8000e-004	0.0000	4.1512
Total	**0.0163**	**0.0202**	**0.0610**	**9.0000e-005**	**5.2000e-003**	**3.2000e-004**	**5.5200e-003**	**1.4000e-003**	**2.9000e-004**	**1.7000e-003**	**0.0000**	**7.4054**	**7.4054**	**3.1000e-004**	**0.0000**	**7.4118**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**0.8508**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4000e-004	2.1000e-004	2.0800e-003	0.0000	2.3000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2284	0.2284	2.0000e-005	0.0000	0.2287
Total	**6.4000e-004**	**2.1000e-004**	**2.0800e-003**	**0.0000**	**2.3000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2284**	**0.2284**	**2.0000e-005**	**0.0000**	**0.2287**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8447					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**0.8508**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.4000e-004	2.1000e-004	2.0800e-003	0.0000	2.3000e-004	0.0000	2.4000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.2284	0.2284	2.0000e-005	0.0000	0.2287
Total	**6.4000e-004**	**2.1000e-004**	**2.0800e-003**	**0.0000**	**2.3000e-004**	**0.0000**	**2.4000e-004**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**0.0000**	**0.2284**	**0.2284**	**2.0000e-005**	**0.0000**	**0.2287**

Area G - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	392.00	Dwelling Unit	43.50	392,000.00	1121

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 43.5

Construction Phase - Painting phase = 74 days

Grading - Acreage = 43.5

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	74.00
tblGrading	AcresOfGrading	187.50	43.50
tblLandUse	LotAcreage	24.50	43.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.0186	5.9627	5.2790	6.4400e-003	0.6589	0.3175	0.9764	0.3129	0.2946	0.6075	0.0000	585.4296	585.4296	0.1255	0.0000	588.0646
Year Two	1.4364	4.7779	5.8540	8.4400e-003	0.3226	0.2894	0.6119	0.0866	0.2717	0.3584	0.0000	718.9088	718.9088	0.0997	0.0000	721.0015
Year Three	1.2984	4.4680	5.4090	8.4300e-003	0.3226	0.2680	0.5906	0.0866	0.2515	0.3381	0.0000	704.7390	704.7390	0.0959	0.0000	706.7532
Year Four	6.7294	2.4113	2.7146	4.5800e-003	0.1578	0.1418	0.2996	0.0423	0.1329	0.1752	0.0000	379.2079	379.2079	0.0591	0.0000	380.4483
Total	**10.4826**	**17.6199**	**19.2566**	**0.0279**	**1.4618**	**1.0166**	**2.4784**	**0.5285**	**0.9507**	**1.4791**	**0.0000**	**2,388.2853**	**2,388.2853**	**0.3801**	**0.0000**	**2,396.2676**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.0186	5.9627	5.2790	6.4400e-003	0.6589	0.3175	0.9764	0.3129	0.2946	0.6075	0.0000	585.4291	585.4291	0.1255	0.0000	588.0641
Year Two	1.4364	4.7779	5.8540	8.4400e-003	0.3226	0.2894	0.6119	0.0866	0.2717	0.3584	0.0000	718.9084	718.9084	0.0997	0.0000	721.0011
Year Three	1.2984	4.4680	5.4090	8.4300e-003	0.3226	0.2680	0.5906	0.0866	0.2515	0.3381	0.0000	704.7386	704.7386	0.0959	0.0000	706.7528
Year Four	6.7294	2.4113	2.7146	4.5800e-003	0.1578	0.1418	0.2996	0.0423	0.1329	0.1752	0.0000	379.2077	379.2077	0.0591	0.0000	380.4481
Total	**10.4826**	**17.6199**	**19.2566**	**0.0279**	**1.4618**	**1.0166**	**2.4784**	**0.5285**	**0.9507**	**1.4791**	**0.0000**	**2,388.2838**	**2,388.2838**	**0.3801**	**0.0000**	**2,396.2661**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2014	4/22/2014	5	30	
2	Grading	Grading	4/23/2014	8/5/2014	5	75	
3	Building Construction	Building Construction	8/6/2014	6/6/2017	5	740	
4	Paving	Paving	6/7/2017	8/22/2017	5	55	
5	Architectural Coating	Architectural Coating	8/23/2017	12/4/2017	5	74	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 43.5

Acres of Paving: 0

Residential Indoor: 793,800; Residential Outdoor: 264,600; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	282.00	42.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	56.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0794	0.8643	0.6444	5.9000e-004		0.0471	0.0471		0.0433	0.0433	0.0000	56.5524	56.5524	0.0167	0.0000	56.9034
Total	**0.0794**	**0.8643**	**0.6444**	**5.9000e-004**	**0.2710**	**0.0471**	**0.3181**	**0.1490**	**0.0433**	**0.1923**	**0.0000**	**56.5524**	**56.5524**	**0.0167**	**0.0000**	**56.9034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5800e-003	2.1600e-003	0.0220	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.1322	2.1322	1.6000e-004	0.0000	2.1355
Total	**6.5800e-003**	**2.1600e-003**	**0.0220**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.1322**	**2.1322**	**1.6000e-004**	**0.0000**	**2.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0794	0.8643	0.6444	5.9000e-004		0.0471	0.0471		0.0433	0.0433	0.0000	56.5524	56.5524	0.0167	0.0000	56.9033
Total	**0.0794**	**0.8643**	**0.6444**	**5.9000e-004**	**0.2710**	**0.0471**	**0.3181**	**0.1490**	**0.0433**	**0.1923**	**0.0000**	**56.5524**	**56.5524**	**0.0167**	**0.0000**	**56.9033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5800e-003	2.1600e-003	0.0220	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.1322	2.1322	1.6000e-004	0.0000	2.1355
Total	**6.5800e-003**	**2.1600e-003**	**0.0220**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.1322**	**2.1322**	**1.6000e-004**	**0.0000**	**2.1355**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2489	0.0000	0.2489	0.1266	0.0000	0.1266	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2568	3.0270	1.9344	2.3200e-003		0.1455	0.1455		0.1338	0.1338	0.0000	222.9917	222.9917	0.0659	0.0000	224.3755
Total	**0.2568**	**3.0270**	**1.9344**	**2.3200e-003**	**0.2489**	**0.1455**	**0.3944**	**0.1266**	**0.1338**	**0.2605**	**0.0000**	**222.9917**	**222.9917**	**0.0659**	**0.0000**	**224.3755**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0183	6.0000e-003	0.0611	7.0000e-005	5.8600e-003	7.0000e-005	5.9300e-003	1.5600e-003	6.0000e-005	1.6200e-003	0.0000	5.9229	5.9229	4.3000e-004	0.0000	5.9320
Total	**0.0183**	**6.0000e-003**	**0.0611**	**7.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9300e-003**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**0.0000**	**5.9229**	**5.9229**	**4.3000e-004**	**0.0000**	**5.9320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2489	0.0000	0.2489	0.1266	0.0000	0.1266	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2568	3.0270	1.9344	2.3200e-003		0.1455	0.1455		0.1338	0.1338	0.0000	222.9914	222.9914	0.0659	0.0000	224.3753
Total	**0.2568**	**3.0270**	**1.9344**	**2.3200e-003**	**0.2489**	**0.1455**	**0.3944**	**0.1266**	**0.1338**	**0.2605**	**0.0000**	**222.9914**	**222.9914**	**0.0659**	**0.0000**	**224.3753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0183	6.0000e-003	0.0611	7.0000e-005	5.8600e-003	7.0000e-005	5.9300e-003	1.5600e-003	6.0000e-005	1.6200e-003	0.0000	5.9229	5.9229	4.3000e-004	0.0000	5.9320
Total	**0.0183**	**6.0000e-003**	**0.0611**	**7.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9300e-003**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**0.0000**	**5.9229**	**5.9229**	**4.3000e-004**	**0.0000**	**5.9320**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2050	1.6565	1.0033	1.4200e-003		0.1181	0.1181		0.1112	0.1112	0.0000	130.2603	130.2603	0.0331	0.0000	130.9559
Total	**0.2050**	**1.6565**	**1.0033**	**1.4200e-003**		**0.1181**	**0.1181**		**0.1112**	**0.1112**	**0.0000**	**130.2603**	**130.2603**	**0.0331**	**0.0000**	**130.9559**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0885	0.2872	0.3968	5.4000e-004	0.0142	5.4600e-003	0.0197	4.0800e-003	5.0200e-003	9.1000e-003	0.0000	49.5397	49.5397	4.9000e-004	0.0000	49.5500
Worker	0.3641	0.1196	1.2171	1.4800e-003	0.1168	1.3200e-003	0.1181	0.0311	1.1700e-003	0.0323	0.0000	118.0305	118.0305	8.6600e-003	0.0000	118.2123
Total	**0.4526**	**0.4068**	**1.6139**	**2.0200e-003**	**0.1310**	**6.7800e-003**	**0.1378**	**0.0352**	**6.1900e-003**	**0.0414**	**0.0000**	**167.5701**	**167.5701**	**9.1500e-003**	**0.0000**	**167.7623**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2050	1.6564	1.0033	1.4200e-003		0.1181	0.1181		0.1112	0.1112	0.0000	130.2602	130.2602	0.0331	0.0000	130.9557
Total	**0.2050**	**1.6564**	**1.0033**	**1.4200e-003**		**0.1181**	**0.1181**		**0.1112**	**0.1112**	**0.0000**	**130.2602**	**130.2602**	**0.0331**	**0.0000**	**130.9557**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0885	0.2872	0.3968	5.4000e-004	0.0142	5.4600e-003	0.0197	4.0800e-003	5.0200e-003	9.1000e-003	0.0000	49.5397	49.5397	4.9000e-004	0.0000	49.5500
Worker	0.3641	0.1196	1.2171	1.4800e-003	0.1168	1.3200e-003	0.1181	0.0311	1.1700e-003	0.0323	0.0000	118.0305	118.0305	8.6600e-003	0.0000	118.2123
Total	**0.4526**	**0.4068**	**1.6139**	**2.0200e-003**	**0.1310**	**6.7800e-003**	**0.1378**	**0.0352**	**6.1900e-003**	**0.0414**	**0.0000**	**167.5701**	**167.5701**	**9.1500e-003**	**0.0000**	**167.7623**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1736	0.6054	0.8587	1.3100e-003	0.0350	0.0102	0.0452	0.0101	9.3800e-003	0.0194	0.0000	120.3216	120.3216	1.0500e-003	0.0000	120.3437
Worker	0.7853	0.2536	2.5492	3.6300e-003	0.2876	2.9100e-003	0.2905	0.0766	2.6100e-003	0.0792	0.0000	280.1745	280.1745	0.0187	0.0000	280.5675
Total	**0.9588**	**0.8590**	**3.4078**	**4.9400e-003**	**0.3226**	**0.0131**	**0.3357**	**0.0866**	**0.0120**	**0.0986**	**0.0000**	**400.4962**	**400.4962**	**0.0198**	**0.0000**	**400.9112**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1736	0.6054	0.8587	1.3100e-003	0.0350	0.0102	0.0452	0.0101	9.3800e-003	0.0194	0.0000	120.3216	120.3216	1.0500e-003	0.0000	120.3437
Worker	0.7853	0.2536	2.5492	3.6300e-003	0.2876	2.9100e-003	0.2905	0.0766	2.6100e-003	0.0792	0.0000	280.1745	280.1745	0.0187	0.0000	280.5675
Total	**0.9588**	**0.8590**	**3.4078**	**4.9400e-003**	**0.3226**	**0.0131**	**0.3357**	**0.0866**	**0.0120**	**0.0986**	**0.0000**	**400.4962**	**400.4962**	**0.0198**	**0.0000**	**400.9112**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0104	316.0104	0.0784	0.0000	317.6563
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0104**	**316.0104**	**0.0784**	**0.0000**	**317.6563**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1604	0.5277	0.8075	1.3100e-003	0.0350	8.5700e-003	0.0436	0.0101	7.8800e-003	0.0179	0.0000	118.8983	118.8983	9.5000e-004	0.0000	118.9183
Worker	0.6935	0.2202	2.1864	3.6200e-003	0.2876	2.6700e-003	0.2902	0.0766	2.4100e-003	0.0790	0.0000	269.8302	269.8302	0.0166	0.0000	270.1785
Total	**0.8538**	**0.7479**	**2.9939**	**4.9300e-003**	**0.3226**	**0.0112**	**0.3338**	**0.0866**	**0.0103**	**0.0969**	**0.0000**	**388.7286**	**388.7286**	**0.0175**	**0.0000**	**389.0969**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0101	316.0101	0.0784	0.0000	317.6560
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0101**	**316.0101**	**0.0784**	**0.0000**	**317.6560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1604	0.5277	0.8075	1.3100e-003	0.0350	8.5700e-003	0.0436	0.0101	7.8800e-003	0.0179	0.0000	118.8983	118.8983	9.5000e-004	0.0000	118.9183
Worker	0.6935	0.2202	2.1864	3.6200e-003	0.2876	2.6700e-003	0.2902	0.0766	2.4100e-003	0.0790	0.0000	269.8302	269.8302	0.0166	0.0000	270.1785
Total	**0.8538**	**0.7479**	**2.9939**	**4.9300e-003**	**0.3226**	**0.0112**	**0.3338**	**0.0866**	**0.0103**	**0.0969**	**0.0000**	**388.7286**	**388.7286**	**0.0175**	**0.0000**	**389.0969**

3.4 Building Construction - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1737	1.4787	1.0152	1.5000e-003		0.0998	0.0998		0.0937	0.0937	0.0000	134.1083	134.1083	0.0330	0.0000	134.8014
Total	**0.1737**	**1.4787**	**1.0152**	**1.5000e-003**		**0.0998**	**0.0998**		**0.0937**	**0.0937**	**0.0000**	**134.1083**	**134.1083**	**0.0330**	**0.0000**	**134.8014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0603	0.1999	0.3164	5.6000e-004	0.0150	3.1000e-003	0.0181	4.3200e-003	2.8500e-003	7.1600e-003	0.0000	50.1358	50.1358	3.8000e-004	0.0000	50.1438
Worker	0.2579	0.0810	0.7853	1.5500e-003	0.1234	1.0500e-003	0.1245	0.0329	9.6000e-004	0.0338	0.0000	111.1267	111.1267	6.2600e-003	0.0000	111.2582
Total	**0.3182**	**0.2809**	**1.1017**	**2.1100e-003**	**0.1384**	**4.1500e-003**	**0.1426**	**0.0372**	**3.8100e-003**	**0.0410**	**0.0000**	**161.2625**	**161.2625**	**6.6400e-003**	**0.0000**	**161.4020**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1737	1.4787	1.0152	1.5000e-003		0.0998	0.0998		0.0937	0.0937	0.0000	134.1081	134.1081	0.0330	0.0000	134.8013
Total	**0.1737**	**1.4787**	**1.0152**	**1.5000e-003**		**0.0998**	**0.0998**		**0.0937**	**0.0937**	**0.0000**	**134.1081**	**134.1081**	**0.0330**	**0.0000**	**134.8013**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0603	0.1999	0.3164	5.6000e-004	0.0150	3.1000e-003	0.0181	4.3200e-003	2.8500e-003	7.1600e-003	0.0000	50.1358	50.1358	3.8000e-004	0.0000	50.1438
Worker	0.2579	0.0810	0.7853	1.5500e-003	0.1234	1.0500e-003	0.1245	0.0329	9.6000e-004	0.0338	0.0000	111.1267	111.1267	6.2600e-003	0.0000	111.2582
Total	**0.3182**	**0.2809**	**1.1017**	**2.1100e-003**	**0.1384**	**4.1500e-003**	**0.1426**	**0.0372**	**3.8100e-003**	**0.0410**	**0.0000**	**161.2625**	**161.2625**	**6.6400e-003**	**0.0000**	**161.4020**

3.5 Paving - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0525	0.5582	0.4050	6.1000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	56.9069	56.9069	0.0174	0.0000	57.2731
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.5582**	**0.4050**	**6.1000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**56.9069**	**56.9069**	**0.0174**	**0.0000**	**57.2731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7400e-003	2.1200e-003	0.0205	4.0000e-005	3.2200e-003	3.0000e-005	3.2500e-003	8.6000e-004	3.0000e-005	8.8000e-004	0.0000	2.9027	2.9027	1.6000e-004	0.0000	2.9062
Total	**6.7400e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**8.6000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**2.9027**	**2.9027**	**1.6000e-004**	**0.0000**	**2.9062**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0525	0.5582	0.4050	6.1000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	56.9068	56.9068	0.0174	0.0000	57.2730
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.5582**	**0.4050**	**6.1000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**56.9068**	**56.9068**	**0.0174**	**0.0000**	**57.2730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7400e-003	2.1200e-003	0.0205	4.0000e-005	3.2200e-003	3.0000e-005	3.2500e-003	8.6000e-004	3.0000e-005	8.8000e-004	0.0000	2.9027	2.9027	1.6000e-004	0.0000	2.9062
Total	**6.7400e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**8.6000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**2.9027**	**2.9027**	**1.6000e-004**	**0.0000**	**2.9062**

3.6 Architectural Coating - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.1321					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.0809	0.0691	1.1000e-004		6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003	0.0000	9.4470	9.4470	1.0000e-003	0.0000	9.4680
Total	**6.1444**	**0.0809**	**0.0691**	**1.1000e-004**		**6.4100e-003**	**6.4100e-003**		**6.4100e-003**	**6.4100e-003**	**0.0000**	**9.4470**	**9.4470**	**1.0000e-003**	**0.0000**	**9.4680**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0338	0.0106	0.1030	2.0000e-004	0.0162	1.4000e-004	0.0163	4.3100e-003	1.3000e-004	4.4400e-003	0.0000	14.5805	14.5805	8.2000e-004	0.0000	14.5977
Total	**0.0338**	**0.0106**	**0.1030**	**2.0000e-004**	**0.0162**	**1.4000e-004**	**0.0163**	**4.3100e-003**	**1.3000e-004**	**4.4400e-003**	**0.0000**	**14.5805**	**14.5805**	**8.2000e-004**	**0.0000**	**14.5977**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	6.1321					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0123	0.0809	0.0691	1.1000e-004		6.4100e-003	6.4100e-003		6.4100e-003	6.4100e-003	0.0000	9.4470	9.4470	1.0000e-003	0.0000	9.4680
Total	**6.1444**	**0.0809**	**0.0691**	**1.1000e-004**		**6.4100e-003**	**6.4100e-003**		**6.4100e-003**	**6.4100e-003**	**0.0000**	**9.4470**	**9.4470**	**1.0000e-003**	**0.0000**	**9.4680**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0338	0.0106	0.1030	2.0000e-004	0.0162	1.4000e-004	0.0163	4.3100e-003	1.3000e-004	4.4400e-003	0.0000	14.5805	14.5805	8.2000e-004	0.0000	14.5977
Total	**0.0338**	**0.0106**	**0.1030**	**2.0000e-004**	**0.0162**	**1.4000e-004**	**0.0163**	**4.3100e-003**	**1.3000e-004**	**4.4400e-003**	**0.0000**	**14.5805**	**14.5805**	**8.2000e-004**	**0.0000**	**14.5977**

Area H - Phase 1

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fire Station	30.49	1000sqft	2.00	30,492.00	0
Apartments Low Rise	215.00	Dwelling Unit	11.90	215,000.00	615
Office Park	73.62	1000sqft	3.00	73,616.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 16.9

Construction Phase - Painting phase = 55 days

Grading - Area H = 16.9 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	55.00
tblConstructionPhase	NumDays	300.00	550.00
tblConstructionPhase	PhaseEndDate	4/19/2016	5/5/2015
tblConstructionPhase	PhaseStartDate	3/23/2016	4/8/2015
tblGrading	AcresOfGrading	75.00	16.90
tblLandUse	LotAcreage	0.70	2.00
tblLandUse	LotAcreage	13.44	11.90
tblLandUse	LotAcreage	1.69	3.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.2693	5.5929	5.5763	7.3100e-003	0.3008	0.3288	0.6296	0.1049	0.3079	0.4128	0.0000	649.7314	649.7314	0.1123	0.0000	652.0900
Year Two	5.7958	4.9952	5.2482	7.5900e-003	0.2344	0.3082	0.5426	0.0631	0.2896	0.3527	0.0000	657.1341	657.1341	0.1012	0.0000	659.2598
Year Three	0.2355	0.9710	1.0315	1.5900e-003	0.0500	0.0593	0.1093	0.0135	0.0556	0.0691	0.0000	135.3631	135.3631	0.0201	0.0000	135.7847
Total	**7.3006**	**11.5590**	**11.8561**	**0.0165**	**0.5852**	**0.6963**	**1.2815**	**0.1815**	**0.6531**	**0.8346**	**0.0000**	**1,442.2286**	**1,442.2286**	**0.2336**	**0.0000**	**1,447.1345**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.2693	5.5929	5.5763	7.3100e-003	0.3008	0.3288	0.6296	0.1049	0.3079	0.4128	0.0000	649.7310	649.7310	0.1123	0.0000	652.0896
Year Two	5.7958	4.9952	5.2482	7.5900e-003	0.2344	0.3082	0.5426	0.0631	0.2896	0.3527	0.0000	657.1337	657.1337	0.1012	0.0000	659.2594
Year Three	0.2355	0.9710	1.0315	1.5900e-003	0.0500	0.0593	0.1093	0.0135	0.0556	0.0691	0.0000	135.3630	135.3630	0.0201	0.0000	135.7846
Total	**7.3006**	**11.5590**	**11.8561**	**0.0165**	**0.5852**	**0.6963**	**1.2815**	**0.1815**	**0.6531**	**0.8346**	**0.0000**	**1,442.2276**	**1,442.2276**	**0.2336**	**0.0000**	**1,447.1336**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2014	2/11/2014	5	30	
2	Building Construction	Building Construction	2/12/2014	3/22/2016	5	550	
3	Paving	Paving	4/8/2015	5/5/2015	5	20	
4	Architectural Coating	Architectural Coating	5/6/2015	7/21/2015	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 16.9

Acres of Paving: 0

Residential Indoor: 435,375; Residential Outdoor: 145,125; Non-Residential Indoor: 156,162; Non-Residential Outdoor: 52,054

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Excavators	2	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	188.00	40.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	38.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0993	0.0000	0.0993	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0993**	**0.0582**	**0.1575**	**0.0506**	**0.0535**	**0.1042**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0993	0.0000	0.0993	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0993**	**0.0582**	**0.1575**	**0.0506**	**0.0535**	**0.1042**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.3 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4468	3.6098	2.1864	3.1000e-003		0.2573	0.2573		0.2422	0.2422	0.0000	283.8692	283.8692	0.0722	0.0000	285.3850
Total	**0.4468**	**3.6098**	**2.1864**	**3.1000e-003**		**0.2573**	**0.2573**		**0.2422**	**0.2422**	**0.0000**	**283.8692**	**283.8692**	**0.0722**	**0.0000**	**285.3850**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1836	0.5962	0.8236	1.1100e-003	0.0295	0.0113	0.0408	8.4800e-003	0.0104	0.0189	0.0000	102.8182	102.8182	1.0200e-003	0.0000	102.8397
Worker	0.5290	0.1737	1.7682	2.1500e-003	0.1697	1.9200e-003	0.1716	0.0452	1.7000e-003	0.0469	0.0000	171.4782	171.4782	0.0126	0.0000	171.7424
Total	**0.7125**	**0.7699**	**2.5918**	**3.2600e-003**	**0.1992**	**0.0133**	**0.2124**	**0.0537**	**0.0121**	**0.0658**	**0.0000**	**274.2964**	**274.2964**	**0.0136**	**0.0000**	**274.5821**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4468	3.6098	2.1864	3.1000e-003		0.2573	0.2573		0.2422	0.2422	0.0000	283.8689	283.8689	0.0722	0.0000	285.3846
Total	**0.4468**	**3.6098**	**2.1864**	**3.1000e-003**		**0.2573**	**0.2573**		**0.2422**	**0.2422**	**0.0000**	**283.8689**	**283.8689**	**0.0722**	**0.0000**	**285.3846**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1836	0.5962	0.8236	1.1100e-003	0.0295	0.0113	0.0408	8.4800e-003	0.0104	0.0189	0.0000	102.8182	102.8182	1.0200e-003	0.0000	102.8397
Worker	0.5290	0.1737	1.7682	2.1500e-003	0.1697	1.9200e-003	0.1716	0.0452	1.7000e-003	0.0469	0.0000	171.4782	171.4782	0.0126	0.0000	171.7424
Total	**0.7125**	**0.7699**	**2.5918**	**3.2600e-003**	**0.1992**	**0.0133**	**0.2124**	**0.0537**	**0.0121**	**0.0658**	**0.0000**	**274.2964**	**274.2964**	**0.0136**	**0.0000**	**274.5821**

3.3 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1653	0.5765	0.8178	1.2500e-003	0.0333	9.7200e-003	0.0431	9.5800e-003	8.9300e-003	0.0185	0.0000	114.5920	114.5920	1.0000e-003	0.0000	114.6130
Worker	0.5235	0.1691	1.6995	2.4200e-003	0.1917	1.9400e-003	0.1936	0.0510	1.7400e-003	0.0528	0.0000	186.7830	186.7830	0.0125	0.0000	187.0450
Total	**0.6888**	**0.7456**	**2.5172**	**3.6700e-003**	**0.2250**	**0.0117**	**0.2367**	**0.0606**	**0.0107**	**0.0713**	**0.0000**	**301.3750**	**301.3750**	**0.0135**	**0.0000**	**301.6580**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1653	0.5765	0.8178	1.2500e-003	0.0333	9.7200e-003	0.0431	9.5800e-003	8.9300e-003	0.0185	0.0000	114.5920	114.5920	1.0000e-003	0.0000	114.6130
Worker	0.5235	0.1691	1.6995	2.4200e-003	0.1917	1.9400e-003	0.1936	0.0510	1.7400e-003	0.0528	0.0000	186.7830	186.7830	0.0125	0.0000	187.0450
Total	**0.6888**	**0.7456**	**2.5172**	**3.6700e-003**	**0.2250**	**0.0117**	**0.2367**	**0.0606**	**0.0107**	**0.0713**	**0.0000**	**301.3750**	**301.3750**	**0.0135**	**0.0000**	**301.6580**

3.3 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0988	0.8267	0.5367	7.8000e-004		0.0571	0.0571		0.0536	0.0536	0.0000	70.2245	70.2245	0.0174	0.0000	70.5903
Total	**0.0988**	**0.8267**	**0.5367**	**7.8000e-004**		**0.0571**	**0.0571**		**0.0536**	**0.0536**	**0.0000**	**70.2245**	**70.2245**	**0.0174**	**0.0000**	**70.5903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0339	0.1117	0.1709	2.8000e-004	7.4100e-003	1.8100e-003	9.2200e-003	2.1300e-003	1.6700e-003	3.8000e-003	0.0000	25.1637	25.1637	2.0000e-004	0.0000	25.1679
Worker	0.1027	0.0326	0.3239	5.4000e-004	0.0426	4.0000e-004	0.0430	0.0113	3.6000e-004	0.0117	0.0000	39.9749	39.9749	2.4600e-003	0.0000	40.0265
Total	**0.1367**	**0.1443**	**0.4948**	**8.2000e-004**	**0.0500**	**2.2100e-003**	**0.0522**	**0.0135**	**2.0300e-003**	**0.0155**	**0.0000**	**65.1385**	**65.1385**	**2.6600e-003**	**0.0000**	**65.1944**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0988	0.8267	0.5367	7.8000e-004		0.0571	0.0571		0.0536	0.0536	0.0000	70.2245	70.2245	0.0174	0.0000	70.5902
Total	**0.0988**	**0.8267**	**0.5367**	**7.8000e-004**		**0.0571**	**0.0571**		**0.0536**	**0.0536**	**0.0000**	**70.2245**	**70.2245**	**0.0174**	**0.0000**	**70.5902**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0339	0.1117	0.1709	2.8000e-004	7.4100e-003	1.8100e-003	9.2200e-003	2.1300e-003	1.6700e-003	3.8000e-003	0.0000	25.1637	25.1637	2.0000e-004	0.0000	25.1679
Worker	0.1027	0.0326	0.3239	5.4000e-004	0.0426	4.0000e-004	0.0430	0.0113	3.6000e-004	0.0117	0.0000	39.9749	39.9749	2.4600e-003	0.0000	40.0265
Total	**0.1367**	**0.1443**	**0.4948**	**8.2000e-004**	**0.0500**	**2.2100e-003**	**0.0522**	**0.0135**	**2.0300e-003**	**0.0155**	**0.0000**	**65.1385**	**65.1385**	**2.6600e-003**	**0.0000**	**65.1944**

3.4 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.5 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.5696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0112	0.0707	0.0523	8.0000e-005		6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	7.0215	7.0215	9.1000e-004	0.0000	7.0407
Total	**4.5808**	**0.0707**	**0.0523**	**8.0000e-005**		**6.0700e-003**	**6.0700e-003**		**6.0700e-003**	**6.0700e-003**	**0.0000**	**7.0215**	**7.0215**	**9.1000e-004**	**0.0000**	**7.0407**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0223	7.2000e-003	0.0724	1.0000e-004	8.1700e-003	8.0000e-005	8.2500e-003	2.1700e-003	7.0000e-005	2.2500e-003	0.0000	7.9558	7.9558	5.3000e-004	0.0000	7.9670
Total	**0.0223**	**7.2000e-003**	**0.0724**	**1.0000e-004**	**8.1700e-003**	**8.0000e-005**	**8.2500e-003**	**2.1700e-003**	**7.0000e-005**	**2.2500e-003**	**0.0000**	**7.9558**	**7.9558**	**5.3000e-004**	**0.0000**	**7.9670**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.5696					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0112	0.0707	0.0523	8.0000e-005		6.0700e-003	6.0700e-003		6.0700e-003	6.0700e-003	0.0000	7.0214	7.0214	9.1000e-004	0.0000	7.0406
Total	**4.5808**	**0.0707**	**0.0523**	**8.0000e-005**		**6.0700e-003**	**6.0700e-003**		**6.0700e-003**	**6.0700e-003**	**0.0000**	**7.0214**	**7.0214**	**9.1000e-004**	**0.0000**	**7.0406**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0223	7.2000e-003	0.0724	1.0000e-004	8.1700e-003	8.0000e-005	8.2500e-003	2.1700e-003	7.0000e-005	2.2500e-003	0.0000	7.9558	7.9558	5.3000e-004	0.0000	7.9670
Total	**0.0223**	**7.2000e-003**	**0.0724**	**1.0000e-004**	**8.1700e-003**	**8.0000e-005**	**8.2500e-003**	**2.1700e-003**	**7.0000e-005**	**2.2500e-003**	**0.0000**	**7.9558**	**7.9558**	**5.3000e-004**	**0.0000**	**7.9670**

Area A - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	121.97	1000sqft	11.20	121,968.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 11.2

Construction Phase - Painting phase = 30 days

Grading - Area A = 11.2 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	11.20
tblLandUse	LotAcreage	2.80	11.20
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.7028	4.9338	3.6002	4.7300e-003	0.2331	0.3031	0.5362	0.1126	0.2836	0.3962	0.0000	433.8158	433.8158	0.0977	0.0000	435.8670
Year Two	1.7020	1.9013	1.4137	2.0500e-003	0.0235	0.1243	0.1478	6.3900e-003	0.1167	0.1231	0.0000	184.3202	184.3202	0.0385	0.0000	185.1276
Total	**2.4048**	**6.8351**	**5.0139**	**6.7800e-003**	**0.2566**	**0.4274**	**0.6840**	**0.1190**	**0.4003**	**0.5193**	**0.0000**	**618.1360**	**618.1360**	**0.1361**	**0.0000**	**620.9946**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.7028	4.9337	3.6002	4.7300e-003	0.2331	0.3031	0.5362	0.1126	0.2836	0.3962	0.0000	433.8154	433.8154	0.0977	0.0000	435.8666
Year Two	1.7020	1.9013	1.4137	2.0500e-003	0.0235	0.1243	0.1478	6.3900e-003	0.1167	0.1231	0.0000	184.3200	184.3200	0.0385	0.0000	185.1274
Total	**2.4048**	**6.8350**	**5.0139**	**6.7800e-003**	**0.2566**	**0.4274**	**0.6840**	**0.1190**	**0.4003**	**0.5193**	**0.0000**	**618.1354**	**618.1354**	**0.1361**	**0.0000**	**620.9940**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11.2

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 182,952; Non-Residential Outdoor: 60,984 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41

Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	39.00	20.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0963	0.0000	0.0963	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0963**	**0.0582**	**0.1545**	**0.0503**	**0.0535**	**0.1038**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0963	0.0000	0.0963	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0963**	**0.0582**	**0.1545**	**0.0503**	**0.0535**	**0.1038**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0799	0.2594	0.3583	4.8000e-004	0.0128	4.9300e-003	0.0178	3.6900e-003	4.5300e-003	8.2200e-003	0.0000	44.7326	44.7326	4.5000e-004	0.0000	44.7419
Worker	0.0955	0.0314	0.3192	3.9000e-004	0.0306	3.5000e-004	0.0310	8.1500e-003	3.1000e-004	8.4600e-003	0.0000	30.9528	30.9528	2.2700e-003	0.0000	31.0005
Total	**0.1754**	**0.2907**	**0.6775**	**8.7000e-004**	**0.0435**	**5.2800e-003**	**0.0487**	**0.0118**	**4.8400e-003**	**0.0167**	**0.0000**	**75.6854**	**75.6854**	**2.7200e-003**	**0.0000**	**75.7424**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0799	0.2594	0.3583	4.8000e-004	0.0128	4.9300e-003	0.0178	3.6900e-003	4.5300e-003	8.2200e-003	0.0000	44.7326	44.7326	4.5000e-004	0.0000	44.7419
Worker	0.0955	0.0314	0.3192	3.9000e-004	0.0306	3.5000e-004	0.0310	8.1500e-003	3.1000e-004	8.4600e-003	0.0000	30.9528	30.9528	2.2700e-003	0.0000	31.0005
Total	**0.1754**	**0.2907**	**0.6775**	**8.7000e-004**	**0.0435**	**5.2800e-003**	**0.0487**	**0.0118**	**4.8400e-003**	**0.0167**	**0.0000**	**75.6854**	**75.6854**	**2.7200e-003**	**0.0000**	**75.7424**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0314	0.1093	0.1551	2.4000e-004	6.3200e-003	1.8400e-003	8.1700e-003	1.8200e-003	1.6900e-003	3.5100e-003	0.0000	21.7330	21.7330	1.9000e-004	0.0000	21.7370
Worker	0.0412	0.0133	0.1337	1.9000e-004	0.0151	1.5000e-004	0.0152	4.0200e-003	1.4000e-004	4.1500e-003	0.0000	14.6973	14.6973	9.8000e-004	0.0000	14.7180
Total	**0.0725**	**0.1226**	**0.2888**	**4.3000e-004**	**0.0214**	**1.9900e-003**	**0.0234**	**5.8400e-003**	**1.8300e-003**	**7.6600e-003**	**0.0000**	**36.4303**	**36.4303**	**1.1700e-003**	**0.0000**	**36.4549**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0314	0.1093	0.1551	2.4000e-004	6.3200e-003	1.8400e-003	8.1700e-003	1.8200e-003	1.6900e-003	3.5100e-003	0.0000	21.7330	21.7330	1.9000e-004	0.0000	21.7370
Worker	0.0412	0.0133	0.1337	1.9000e-004	0.0151	1.5000e-004	0.0152	4.0200e-003	1.4000e-004	4.1500e-003	0.0000	14.6973	14.6973	9.8000e-004	0.0000	14.7180
Total	**0.0725**	**0.1226**	**0.2888**	**4.3000e-004**	**0.0214**	**1.9900e-003**	**0.0234**	**5.8400e-003**	**1.8300e-003**	**7.6600e-003**	**0.0000**	**36.4303**	**36.4303**	**1.1700e-003**	**0.0000**	**36.4549**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.4194**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5600e-003	8.3000e-004	8.3100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9136	0.9136	6.0000e-005	0.0000	0.9149
Total	**2.5600e-003**	**8.3000e-004**	**8.3100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.9136**	**0.9136**	**6.0000e-005**	**0.0000**	**0.9149**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.4133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.4194**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5600e-003	8.3000e-004	8.3100e-003	1.0000e-005	9.4000e-004	1.0000e-005	9.5000e-004	2.5000e-004	1.0000e-005	2.6000e-004	0.0000	0.9136	0.9136	6.0000e-005	0.0000	0.9149
Total	**2.5600e-003**	**8.3000e-004**	**8.3100e-003**	**1.0000e-005**	**9.4000e-004**	**1.0000e-005**	**9.5000e-004**	**2.5000e-004**	**1.0000e-005**	**2.6000e-004**	**0.0000**	**0.9136**	**0.9136**	**6.0000e-005**	**0.0000**	**0.9149**

Area I - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	46.00	Dwelling Unit	7.30	46,000.00	132

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 7.3

Construction Phase -

Grading - Area I = 7.3 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	7.30
tblLandUse	LotAcreage	2.88	7.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5848	4.0942	2.8765	3.8200e-003	0.1869	0.2761	0.4630	0.0919	0.2590	0.3509	0.0000	347.9603	347.9603	0.0823	0.0000	349.6876
Year Two	0.7945	0.5717	0.3913	5.7000e-004	4.4700e-003	0.0366	0.0411	1.2000e-003	0.0343	0.0355	0.0000	52.0643	52.0643	0.0128	0.0000	52.3324
Total	**1.3793**	**4.6659**	**3.2678**	**4.3900e-003**	**0.1913**	**0.3127**	**0.5040**	**0.0931**	**0.2933**	**0.3863**	**0.0000**	**400.0247**	**400.0247**	**0.0950**	**0.0000**	**402.0200**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5848	4.0942	2.8765	3.8200e-003	0.1869	0.2761	0.4630	0.0919	0.2590	0.3509	0.0000	347.9600	347.9600	0.0823	0.0000	349.6872
Year Two	0.7945	0.5717	0.3913	5.7000e-004	4.4700e-003	0.0366	0.0411	1.2000e-003	0.0343	0.0355	0.0000	52.0643	52.0643	0.0128	0.0000	52.3323
Total	**1.3793**	**4.6659**	**3.2678**	**4.3900e-003**	**0.1913**	**0.3127**	**0.5040**	**0.0931**	**0.2933**	**0.3863**	**0.0000**	**400.0242**	**400.0242**	**0.0950**	**0.0000**	**402.0196**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Building Construction	Building Construction	3/12/2014	1/27/2015	5	230	
4	Paving	Paving	1/28/2015	2/24/2015	5	20	
5	Architectural Coating	Architectural Coating	2/25/2015	3/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.3

Acres of Paving: 0

Residential Indoor: 93,150; Residential Outdoor: 31,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	33.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0641	0.0000	0.0641	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6891	28.6891	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0641**	**0.0237**	**0.0878**	**0.0335**	**0.0218**	**0.0553**	**0.0000**	**28.6891**	**28.6891**	**8.4800e-003**	**0.0000**	**28.8671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0641	0.0000	0.0641	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6890	28.6890	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0641**	**0.0237**	**0.0878**	**0.0335**	**0.0218**	**0.0553**	**0.0000**	**28.6890**	**28.6890**	**8.4800e-003**	**0.0000**	**28.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4081	3.2973	1.9971	2.8300e-003		0.2351	0.2351		0.2213	0.2213	0.0000	259.2918	259.2918	0.0659	0.0000	260.6763
Total	**0.4081**	**3.2973**	**1.9971**	**2.8300e-003**		**0.2351**	**0.2351**		**0.2213**	**0.2213**	**0.0000**	**259.2918**	**259.2918**	**0.0659**	**0.0000**	**260.6763**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.0681	0.0940	1.3000e-004	3.3700e-003	1.2900e-003	4.6600e-003	9.7000e-004	1.1900e-003	2.1600e-003	0.0000	11.7395	11.7395	1.2000e-004	0.0000	11.7420
Worker	0.0848	0.0279	0.2835	3.4000e-004	0.0272	3.1000e-004	0.0275	7.2400e-003	2.7000e-004	7.5200e-003	0.0000	27.4939	27.4939	2.0200e-003	0.0000	27.5362
Total	**0.1058**	**0.0959**	**0.3775**	**4.7000e-004**	**0.0306**	**1.6000e-003**	**0.0322**	**8.2100e-003**	**1.4600e-003**	**9.6800e-003**	**0.0000**	**39.2334**	**39.2334**	**2.1400e-003**	**0.0000**	**39.2782**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4081	3.2973	1.9971	2.8300e-003		0.2351	0.2351		0.2213	0.2213	0.0000	259.2915	259.2915	0.0659	0.0000	260.6760
Total	**0.4081**	**3.2973**	**1.9971**	**2.8300e-003**		**0.2351**	**0.2351**		**0.2213**	**0.2213**	**0.0000**	**259.2915**	**259.2915**	**0.0659**	**0.0000**	**260.6760**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.0681	0.0940	1.3000e-004	3.3700e-003	1.2900e-003	4.6600e-003	9.7000e-004	1.1900e-003	2.1600e-003	0.0000	11.7395	11.7395	1.2000e-004	0.0000	11.7420
Worker	0.0848	0.0279	0.2835	3.4000e-004	0.0272	3.1000e-004	0.0275	7.2400e-003	2.7000e-004	7.5200e-003	0.0000	27.4939	27.4939	2.0200e-003	0.0000	27.5362
Total	**0.1058**	**0.0959**	**0.3775**	**4.7000e-004**	**0.0306**	**1.6000e-003**	**0.0322**	**8.2100e-003**	**1.4600e-003**	**9.6800e-003**	**0.0000**	**39.2334**	**39.2334**	**2.1400e-003**	**0.0000**	**39.2782**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.2853	0.1781	2.5000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	23.1795	23.1795	5.8200e-003	0.0000	23.3016
Total	**0.0348**	**0.2853**	**0.1781**	**2.5000e-004**		**0.0201**	**0.0201**		**0.0189**	**0.0189**	**0.0000**	**23.1795**	**23.1795**	**5.8200e-003**	**0.0000**	**23.3016**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-003	5.2500e-003	7.4400e-003	1.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0427	1.0427	1.0000e-005	0.0000	1.0429
Worker	6.6900e-003	2.1600e-003	0.0217	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.3868	2.3868	1.6000e-004	0.0000	2.3901
Total	**8.1900e-003**	**7.4100e-003**	**0.0292**	**4.0000e-005**	**2.7500e-003**	**1.1000e-004**	**2.8600e-003**	**7.4000e-004**	**1.0000e-004**	**8.4000e-004**	**0.0000**	**3.4295**	**3.4295**	**1.7000e-004**	**0.0000**	**3.4330**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.2853	0.1781	2.5000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	23.1794	23.1794	5.8200e-003	0.0000	23.3016
Total	**0.0348**	**0.2853**	**0.1781**	**2.5000e-004**		**0.0201**	**0.0201**		**0.0189**	**0.0189**	**0.0000**	**23.1794**	**23.1794**	**5.8200e-003**	**0.0000**	**23.3016**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-003	5.2500e-003	7.4400e-003	1.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0427	1.0427	1.0000e-005	0.0000	1.0429
Worker	6.6900e-003	2.1600e-003	0.0217	3.0000e-005	2.4500e-003	2.0000e-005	2.4700e-003	6.5000e-004	2.0000e-005	6.7000e-004	0.0000	2.3868	2.3868	1.6000e-004	0.0000	2.3901
Total	**8.1900e-003**	**7.4100e-003**	**0.0292**	**4.0000e-005**	**2.7500e-003**	**1.1000e-004**	**2.8600e-003**	**7.4000e-004**	**1.0000e-004**	**8.4000e-004**	**0.0000**	**3.4295**	**3.4295**	**1.7000e-004**	**0.0000**	**3.4330**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0700e-003	0.0257	0.0190	3.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	2.5533	2.5533	3.3000e-004	0.0000	2.5602
Total	**0.7237**	**0.0257**	**0.0190**	**3.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**2.5533**	**2.5533**	**3.3000e-004**	**0.0000**	**2.5602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	4.8000e-004	4.8500e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5329	0.5329	4.0000e-005	0.0000	0.5337
Total	**1.4900e-003**	**4.8000e-004**	**4.8500e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5329**	**0.5329**	**4.0000e-005**	**0.0000**	**0.5337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7196					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0700e-003	0.0257	0.0190	3.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	2.5533	2.5533	3.3000e-004	0.0000	2.5602
Total	**0.7237**	**0.0257**	**0.0190**	**3.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**2.5533**	**2.5533**	**3.3000e-004**	**0.0000**	**2.5602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	4.8000e-004	4.8500e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5329	0.5329	4.0000e-005	0.0000	0.5337
Total	**1.4900e-003**	**4.8000e-004**	**4.8500e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5329**	**0.5329**	**4.0000e-005**	**0.0000**	**0.5337**

Area J - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Condo/Townhouse	51.00	Dwelling Unit	8.10	51,000.00	146

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 8.1

Construction Phase -

Grading - Area J = 8.1 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	8.10
tblLandUse	LotAcreage	3.19	8.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5951	4.0976	2.9109	3.8600e-003	0.1906	0.2761	0.4667	0.0928	0.2590	0.3518	0.0000	351.2929	351.2929	0.0825	0.0000	353.0253
Year Two	0.8735	0.5719	0.3939	5.8000e-004	4.7700e-003	0.0366	0.0414	1.2800e-003	0.0343	0.0355	0.0000	52.3536	52.3536	0.0128	0.0000	52.6221
Total	**1.4686**	**4.6695**	**3.3048**	**4.4400e-003**	**0.1954**	**0.3127**	**0.5081**	**0.0941**	**0.2933**	**0.3874**	**0.0000**	**403.6465**	**403.6465**	**0.0953**	**0.0000**	**405.6474**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5951	4.0976	2.9109	3.8600e-003	0.1906	0.2761	0.4667	0.0928	0.2590	0.3518	0.0000	351.2926	351.2926	0.0825	0.0000	353.0250
Year Two	0.8735	0.5719	0.3939	5.8000e-004	4.7700e-003	0.0366	0.0414	1.2800e-003	0.0343	0.0355	0.0000	52.3536	52.3536	0.0128	0.0000	52.6221
Total	**1.4686**	**4.6695**	**3.3048**	**4.4400e-003**	**0.1954**	**0.3127**	**0.5081**	**0.0941**	**0.2933**	**0.3874**	**0.0000**	**403.6461**	**403.6461**	**0.0953**	**0.0000**	**405.6470**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/11/2014	5	20	
3	Building Construction	Building Construction	3/12/2014	1/27/2015	5	230	
4	Paving	Paving	1/28/2015	2/24/2015	5	20	
5	Architectural Coating	Architectural Coating	2/25/2015	3/24/2015	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8.1

Acres of Paving: 0

Residential Indoor: 103,275; Residential Outdoor: 34,425; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	1	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	37.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0645	0.0000	0.0645	0.0336	0.0000	0.0336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6891	28.6891	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0645**	**0.0237**	**0.0882**	**0.0336**	**0.0218**	**0.0554**	**0.0000**	**28.6891**	**28.6891**	**8.4800e-003**	**0.0000**	**28.8671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0645	0.0000	0.0645	0.0336	0.0000	0.0336	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6890	28.6890	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0645**	**0.0237**	**0.0882**	**0.0336**	**0.0218**	**0.0554**	**0.0000**	**28.6890**	**28.6890**	**8.4800e-003**	**0.0000**	**28.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4081	3.2973	1.9971	2.8300e-003		0.2351	0.2351		0.2213	0.2213	0.0000	259.2918	259.2918	0.0659	0.0000	260.6763
Total	**0.4081**	**3.2973**	**1.9971**	**2.8300e-003**		**0.2351**	**0.2351**		**0.2213**	**0.2213**	**0.0000**	**259.2918**	**259.2918**	**0.0659**	**0.0000**	**260.6763**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.0681	0.0940	1.3000e-004	3.3700e-003	1.2900e-003	4.6600e-003	9.7000e-004	1.1900e-003	2.1600e-003	0.0000	11.7395	11.7395	1.2000e-004	0.0000	11.7420
Worker	0.0951	0.0312	0.3179	3.9000e-004	0.0305	3.4000e-004	0.0309	8.1200e-003	3.1000e-004	8.4300e-003	0.0000	30.8264	30.8264	2.2600e-003	0.0000	30.8739
Total	**0.1161**	**0.0993**	**0.4119**	**5.2000e-004**	**0.0339**	**1.6300e-003**	**0.0355**	**9.0900e-003**	**1.5000e-003**	**0.0106**	**0.0000**	**42.5660**	**42.5660**	**2.3800e-003**	**0.0000**	**42.6159**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4081	3.2973	1.9971	2.8300e-003		0.2351	0.2351		0.2213	0.2213	0.0000	259.2915	259.2915	0.0659	0.0000	260.6760
Total	**0.4081**	**3.2973**	**1.9971**	**2.8300e-003**		**0.2351**	**0.2351**		**0.2213**	**0.2213**	**0.0000**	**259.2915**	**259.2915**	**0.0659**	**0.0000**	**260.6760**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0210	0.0681	0.0940	1.3000e-004	3.3700e-003	1.2900e-003	4.6600e-003	9.7000e-004	1.1900e-003	2.1600e-003	0.0000	11.7395	11.7395	1.2000e-004	0.0000	11.7420
Worker	0.0951	0.0312	0.3179	3.9000e-004	0.0305	3.4000e-004	0.0309	8.1200e-003	3.1000e-004	8.4300e-003	0.0000	30.8264	30.8264	2.2600e-003	0.0000	30.8739
Total	**0.1161**	**0.0993**	**0.4119**	**5.2000e-004**	**0.0339**	**1.6300e-003**	**0.0355**	**9.0900e-003**	**1.5000e-003**	**0.0106**	**0.0000**	**42.5660**	**42.5660**	**2.3800e-003**	**0.0000**	**42.6159**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.2853	0.1781	2.5000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	23.1795	23.1795	5.8200e-003	0.0000	23.3016
Total	**0.0348**	**0.2853**	**0.1781**	**2.5000e-004**		**0.0201**	**0.0201**		**0.0189**	**0.0189**	**0.0000**	**23.1795**	**23.1795**	**5.8200e-003**	**0.0000**	**23.3016**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-003	5.2500e-003	7.4400e-003	1.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0427	1.0427	1.0000e-005	0.0000	1.0429
Worker	7.5000e-003	2.4200e-003	0.0244	3.0000e-005	2.7500e-003	3.0000e-005	2.7700e-003	7.3000e-004	2.0000e-005	7.6000e-004	0.0000	2.6761	2.6761	1.8000e-004	0.0000	2.6798
Total	**9.0000e-003**	**7.6700e-003**	**0.0318**	**4.0000e-005**	**3.0500e-003**	**1.2000e-004**	**3.1600e-003**	**8.2000e-004**	**1.0000e-004**	**9.3000e-004**	**0.0000**	**3.7188**	**3.7188**	**1.9000e-004**	**0.0000**	**3.7227**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.2853	0.1781	2.5000e-004		0.0201	0.0201		0.0189	0.0189	0.0000	23.1794	23.1794	5.8200e-003	0.0000	23.3016
Total	**0.0348**	**0.2853**	**0.1781**	**2.5000e-004**		**0.0201**	**0.0201**		**0.0189**	**0.0189**	**0.0000**	**23.1794**	**23.1794**	**5.8200e-003**	**0.0000**	**23.3016**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5000e-003	5.2500e-003	7.4400e-003	1.0000e-005	3.0000e-004	9.0000e-005	3.9000e-004	9.0000e-005	8.0000e-005	1.7000e-004	0.0000	1.0427	1.0427	1.0000e-005	0.0000	1.0429
Worker	7.5000e-003	2.4200e-003	0.0244	3.0000e-005	2.7500e-003	3.0000e-005	2.7700e-003	7.3000e-004	2.0000e-005	7.6000e-004	0.0000	2.6761	2.6761	1.8000e-004	0.0000	2.6798
Total	**9.0000e-003**	**7.6700e-003**	**0.0318**	**4.0000e-005**	**3.0500e-003**	**1.2000e-004**	**3.1600e-003**	**8.2000e-004**	**1.0000e-004**	**9.3000e-004**	**0.0000**	**3.7188**	**3.7188**	**1.9000e-004**	**0.0000**	**3.7227**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7978					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0700e-003	0.0257	0.0190	3.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	2.5533	2.5533	3.3000e-004	0.0000	2.5602
Total	**0.8019**	**0.0257**	**0.0190**	**3.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**2.5533**	**2.5533**	**3.3000e-004**	**0.0000**	**2.5602**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	4.8000e-004	4.8500e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5329	0.5329	4.0000e-005	0.0000	0.5337
Total	**1.4900e-003**	**4.8000e-004**	**4.8500e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5329**	**0.5329**	**4.0000e-005**	**0.0000**	**0.5337**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7978					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0700e-003	0.0257	0.0190	3.0000e-005		2.2100e-003	2.2100e-003		2.2100e-003	2.2100e-003	0.0000	2.5533	2.5533	3.3000e-004	0.0000	2.5602
Total	**0.8019**	**0.0257**	**0.0190**	**3.0000e-005**		**2.2100e-003**	**2.2100e-003**		**2.2100e-003**	**2.2100e-003**	**0.0000**	**2.5533**	**2.5533**	**3.3000e-004**	**0.0000**	**2.5602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4900e-003	4.8000e-004	4.8500e-003	1.0000e-005	5.5000e-004	1.0000e-005	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5329	0.5329	4.0000e-005	0.0000	0.5337
Total	**1.4900e-003**	**4.8000e-004**	**4.8500e-003**	**1.0000e-005**	**5.5000e-004**	**1.0000e-005**	**5.5000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.5329**	**0.5329**	**4.0000e-005**	**0.0000**	**0.5337**

Area K - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
City Park	7.60	Acre	7.60	331,056.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase -

Grading - Area K = 7.6 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	10.00	7.60
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0982	0.9631	0.6638	7.5000e-004	0.1576	0.0540	0.2116	0.0840	0.0496	0.1336	0.0000	72.0610	72.0610	0.0206	0.0000	72.4938
Total	**0.0982**	**0.9631**	**0.6638**	**7.5000e-004**	**0.1576**	**0.0540**	**0.2116**	**0.0840**	**0.0496**	**0.1336**	**0.0000**	**72.0610**	**72.0610**	**0.0206**	**0.0000**	**72.4938**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0982	0.9631	0.6638	7.5000e-004	0.1576	0.0540	0.2116	0.0840	0.0496	0.1336	0.0000	72.0609	72.0609	0.0206	0.0000	72.4937
Total	**0.0982**	**0.9631**	**0.6638**	**7.5000e-004**	**0.1576**	**0.0540**	**0.2116**	**0.0840**	**0.0496**	**0.1336**	**0.0000**	**72.0609**	**72.0609**	**0.0206**	**0.0000**	**72.4937**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/14/2014	5	10	
2	Grading	Grading	1/15/2014	2/11/2014	5	20	
3	Paving	Paving	2/12/2014	3/11/2014	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 7.6

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	2	8.00	125	0.42
Paving	Paving Equipment	2	8.00	130	0.36
Paving	Rollers	2	8.00	80	0.38

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0643	0.0000	0.0643	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6891	28.6891	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0643**	**0.0237**	**0.0880**	**0.0335**	**0.0218**	**0.0554**	**0.0000**	**28.6891**	**28.6891**	**8.4800e-003**	**0.0000**	**28.8671**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0643	0.0000	0.0643	0.0335	0.0000	0.0335	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0387	0.4110	0.2675	3.0000e-004		0.0237	0.0237		0.0218	0.0218	0.0000	28.6890	28.6890	8.4800e-003	0.0000	28.8671
Total	**0.0387**	**0.4110**	**0.2675**	**3.0000e-004**	**0.0643**	**0.0237**	**0.0880**	**0.0335**	**0.0218**	**0.0554**	**0.0000**	**28.6890**	**28.6890**	**8.4800e-003**	**0.0000**	**28.8671**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

3.4 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0236	0.2609	0.1497	2.2000e-004		0.0145	0.0145		0.0134	0.0134	0.0000	21.4412	21.4412	6.3400e-003	0.0000	21.5743
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0236**	**0.2609**	**0.1497**	**2.2000e-004**		**0.0145**	**0.0145**		**0.0134**	**0.0134**	**0.0000**	**21.4412**	**21.4412**	**6.3400e-003**	**0.0000**	**21.5743**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0236	0.2609	0.1497	2.2000e-004		0.0145	0.0145		0.0134	0.0134	0.0000	21.4412	21.4412	6.3400e-003	0.0000	21.5743
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0236**	**0.2609**	**0.1497**	**2.2000e-004**		**0.0145**	**0.0145**		**0.0134**	**0.0134**	**0.0000**	**21.4412**	**21.4412**	**6.3400e-003**	**0.0000**	**21.5743**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6500e-003	1.2000e-003	0.0122	1.0000e-005	1.1700e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1846	1.1846	9.0000e-005	0.0000	1.1864
Total	**3.6500e-003**	**1.2000e-003**	**0.0122**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1846**	**1.1846**	**9.0000e-005**	**0.0000**	**1.1864**

Area L - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	61.00	Dwelling Unit	17.10	109,800.00	174

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 17.1

Construction Phase - Painting phase = 30 days

Grading - Area L = 17.1 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	17.10
tblLandUse	LotAcreage	19.81	17.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6092	4.7515	3.2282	4.2400e-003	0.2146	0.2997	0.5143	0.1070	0.2805	0.3875	0.0000	391.2474	391.2474	0.0964	0.0000	393.2717
Year Two	1.9667	1.8240	1.2504	1.8100e-003	0.0124	0.1230	0.1354	3.3400e-003	0.1155	0.1189	0.0000	163.3304	163.3304	0.0379	0.0000	164.1256
Total	**2.5759**	**6.5755**	**4.4786**	**6.0500e-003**	**0.2269**	**0.4227**	**0.6496**	**0.1103**	**0.3961**	**0.5064**	**0.0000**	**554.5778**	**554.5778**	**0.1343**	**0.0000**	**557.3973**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6092	4.7515	3.2282	4.2400e-003	0.2146	0.2997	0.5143	0.1070	0.2805	0.3875	0.0000	391.2470	391.2470	0.0964	0.0000	393.2713
Year Two	1.9667	1.8240	1.2504	1.8100e-003	0.0124	0.1230	0.1354	3.3400e-003	0.1155	0.1189	0.0000	163.3302	163.3302	0.0379	0.0000	164.1254
Total	**2.5759**	**6.5755**	**4.4786**	**6.0500e-003**	**0.2269**	**0.4227**	**0.6496**	**0.1103**	**0.3961**	**0.5064**	**0.0000**	**554.5772**	**554.5772**	**0.1343**	**0.0000**	**557.3967**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 17.1

Acres of Paving: 0

Residential Indoor: 222,345; Residential Outdoor: 74,115; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	22.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0994	0.0000	0.0994	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0994**	**0.0582**	**0.1576**	**0.0506**	**0.0535**	**0.1042**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0994	0.0000	0.0994	0.0506	0.0000	0.0506	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0994**	**0.0582**	**0.1576**	**0.0506**	**0.0535**	**0.1042**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	0.0908	0.1254	1.7000e-004	4.4900e-003	1.7300e-003	6.2200e-003	1.2900e-003	1.5900e-003	2.8800e-003	0.0000	15.6564	15.6564	1.6000e-004	0.0000	15.6597
Worker	0.0539	0.0177	0.1801	2.2000e-004	0.0173	2.0000e-004	0.0175	4.6000e-003	1.7000e-004	4.7700e-003	0.0000	17.4606	17.4606	1.2800e-003	0.0000	17.4875
Total	**0.0818**	**0.1085**	**0.3055**	**3.9000e-004**	**0.0218**	**1.9300e-003**	**0.0237**	**5.8900e-003**	**1.7600e-003**	**7.6500e-003**	**0.0000**	**33.1170**	**33.1170**	**1.4400e-003**	**0.0000**	**33.1471**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	0.0908	0.1254	1.7000e-004	4.4900e-003	1.7300e-003	6.2200e-003	1.2900e-003	1.5900e-003	2.8800e-003	0.0000	15.6564	15.6564	1.6000e-004	0.0000	15.6597
Worker	0.0539	0.0177	0.1801	2.2000e-004	0.0173	2.0000e-004	0.0175	4.6000e-003	1.7000e-004	4.7700e-003	0.0000	17.4606	17.4606	1.2800e-003	0.0000	17.4875
Total	**0.0818**	**0.1085**	**0.3055**	**3.9000e-004**	**0.0218**	**1.9300e-003**	**0.0237**	**5.8900e-003**	**1.7600e-003**	**7.6500e-003**	**0.0000**	**33.1170**	**33.1170**	**1.4400e-003**	**0.0000**	**33.1471**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0383	0.0543	8.0000e-005	2.2100e-003	6.5000e-004	2.8600e-003	6.4000e-004	5.9000e-004	1.2300e-003	0.0000	7.6065	7.6065	7.0000e-005	0.0000	7.6079
Worker	0.0232	7.5000e-003	0.0754	1.1000e-004	8.5100e-003	9.0000e-005	8.6000e-003	2.2700e-003	8.0000e-005	2.3400e-003	0.0000	8.2908	8.2908	5.5000e-004	0.0000	8.3024
Total	**0.0342**	**0.0458**	**0.1297**	**1.9000e-004**	**0.0107**	**7.4000e-004**	**0.0115**	**2.9100e-003**	**6.7000e-004**	**3.5700e-003**	**0.0000**	**15.8974**	**15.8974**	**6.2000e-004**	**0.0000**	**15.9104**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0383	0.0543	8.0000e-005	2.2100e-003	6.5000e-004	2.8600e-003	6.4000e-004	5.9000e-004	1.2300e-003	0.0000	7.6065	7.6065	7.0000e-005	0.0000	7.6079
Worker	0.0232	7.5000e-003	0.0754	1.1000e-004	8.5100e-003	9.0000e-005	8.6000e-003	2.2700e-003	8.0000e-005	2.3400e-003	0.0000	8.2908	8.2908	5.5000e-004	0.0000	8.3024
Total	**0.0342**	**0.0458**	**0.1297**	**1.9000e-004**	**0.0107**	**7.4000e-004**	**0.0115**	**2.9100e-003**	**6.7000e-004**	**3.5700e-003**	**0.0000**	**15.8974**	**15.8974**	**6.2000e-004**	**0.0000**	**15.9104**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.7237**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	4.1000e-004	4.1600e-003	1.0000e-005	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4568	0.4568	3.0000e-005	0.0000	0.4574
Total	**1.2800e-003**	**4.1000e-004**	**4.1600e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.7237**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	4.1000e-004	4.1600e-003	1.0000e-005	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4568	0.4568	3.0000e-005	0.0000	0.4574
Total	**1.2800e-003**	**4.1000e-004**	**4.1600e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4574**

Area O - Phase 2

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	47.00	Dwelling Unit	13.10	84,600.00	134

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 13.1

Construction Phase - Painting phase = 30 days

Grading - Lot O = 13.1 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	13.10
tblLandUse	LotAcreage	15.26	13.10
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.5890	4.7215	3.1515	4.1500e-003	0.2072	0.2992	0.5064	0.1053	0.2800	0.3854	0.0000	382.8058	382.8058	0.0961	0.0000	384.8231
2015	1.5638	1.8113	1.2167	1.7600e-003	9.6800e-003	0.1228	0.1325	2.6100e-003	0.1154	0.1180	0.0000	159.1586	159.1586	0.0377	0.0000	159.9506
Total	**2.1528**	**6.5328**	**4.3682**	**5.9100e-003**	**0.2169**	**0.4220**	**0.6389**	**0.1080**	**0.3954**	**0.5034**	**0.0000**	**541.9645**	**541.9645**	**0.1338**	**0.0000**	**544.7737**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	0.5890	4.7215	3.1515	4.1500e-003	0.2072	0.2992	0.5064	0.1053	0.2800	0.3854	0.0000	382.8054	382.8054	0.0961	0.0000	384.8227
2015	1.5638	1.8113	1.2167	1.7600e-003	9.6800e-003	0.1228	0.1325	2.6100e-003	0.1154	0.1180	0.0000	159.1585	159.1585	0.0377	0.0000	159.9504
Total	**2.1528**	**6.5328**	**4.3682**	**5.9100e-003**	**0.2169**	**0.4220**	**0.6389**	**0.1080**	**0.3954**	**0.5034**	**0.0000**	**541.9639**	**541.9639**	**0.1338**	**0.0000**	**544.7731**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 13.1

Acres of Paving: 0

Residential Indoor: 171,315; Residential Outdoor: 57,105; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	17.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0973	0.0000	0.0973	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0973**	**0.0582**	**0.1555**	**0.0504**	**0.0535**	**0.1039**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0973	0.0000	0.0973	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0973**	**0.0582**	**0.1555**	**0.0504**	**0.0535**	**0.1039**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.0648	0.0896	1.2000e-004	3.2100e-003	1.2300e-003	4.4400e-003	9.2000e-004	1.1300e-003	2.0500e-003	0.0000	11.1831	11.1831	1.1000e-004	0.0000	11.1855
Worker	0.0416	0.0137	0.1391	1.7000e-004	0.0134	1.5000e-004	0.0135	3.5500e-003	1.3000e-004	3.6900e-003	0.0000	13.4922	13.4922	9.9000e-004	0.0000	13.5130
Total	**0.0616**	**0.0785**	**0.2287**	**2.9000e-004**	**0.0166**	**1.3800e-003**	**0.0179**	**4.4700e-003**	**1.2600e-003**	**5.7400e-003**	**0.0000**	**24.6754**	**24.6754**	**1.1000e-003**	**0.0000**	**24.6985**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.0648	0.0896	1.2000e-004	3.2100e-003	1.2300e-003	4.4400e-003	9.2000e-004	1.1300e-003	2.0500e-003	0.0000	11.1831	11.1831	1.1000e-004	0.0000	11.1855
Worker	0.0416	0.0137	0.1391	1.7000e-004	0.0134	1.5000e-004	0.0135	3.5500e-003	1.3000e-004	3.6900e-003	0.0000	13.4922	13.4922	9.9000e-004	0.0000	13.5130
Total	**0.0616**	**0.0785**	**0.2287**	**2.9000e-004**	**0.0166**	**1.3800e-003**	**0.0179**	**4.4700e-003**	**1.2600e-003**	**5.7400e-003**	**0.0000**	**24.6754**	**24.6754**	**1.1000e-003**	**0.0000**	**24.6985**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8400e-003	0.0273	0.0388	6.0000e-005	1.5800e-003	4.6000e-004	2.0400e-003	4.5000e-004	4.2000e-004	8.8000e-004	0.0000	5.4332	5.4332	5.0000e-005	0.0000	5.4342
Worker	0.0180	5.8000e-003	0.0583	8.0000e-005	6.5800e-003	7.0000e-005	6.6400e-003	1.7500e-003	6.0000e-005	1.8100e-003	0.0000	6.4065	6.4065	4.3000e-004	0.0000	6.4155
Total	**0.0258**	**0.0331**	**0.0971**	**1.4000e-004**	**8.1600e-003**	**5.3000e-004**	**8.6800e-003**	**2.2000e-003**	**4.8000e-004**	**2.6900e-003**	**0.0000**	**11.8398**	**11.8398**	**4.8000e-004**	**0.0000**	**11.8498**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.8400e-003	0.0273	0.0388	6.0000e-005	1.5800e-003	4.6000e-004	2.0400e-003	4.5000e-004	4.2000e-004	8.8000e-004	0.0000	5.4332	5.4332	5.0000e-005	0.0000	5.4342
Worker	0.0180	5.8000e-003	0.0583	8.0000e-005	6.5800e-003	7.0000e-005	6.6400e-003	1.7500e-003	6.0000e-005	1.8100e-003	0.0000	6.4065	6.4065	4.3000e-004	0.0000	6.4155
Total	**0.0258**	**0.0331**	**0.0971**	**1.4000e-004**	**8.1600e-003**	**5.3000e-004**	**8.6800e-003**	**2.2000e-003**	**4.8000e-004**	**2.6900e-003**	**0.0000**	**11.8398**	**11.8398**	**4.8000e-004**	**0.0000**	**11.8498**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.3295**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	3.1000e-004	3.1200e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3426	0.3426	2.0000e-005	0.0000	0.3431
Total	**9.6000e-004**	**3.1000e-004**	**3.1200e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3426**	**0.3426**	**2.0000e-005**	**0.0000**	**0.3431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.3234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.3295**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	3.1000e-004	3.1200e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3426	0.3426	2.0000e-005	0.0000	0.3431
Total	**9.6000e-004**	**3.1000e-004**	**3.1200e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3426**	**0.3426**	**2.0000e-005**	**0.0000**	**0.3431**

Area M - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	70.00	Dwelling Unit	19.40	126,000.00	200
City Park	13.00	Acre	13.00	566,280.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 32.4

Construction Phase -

Grading - Area M = 32.4

Architectural Coating - 0 square feet of nonresidential

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Nonresidential_Exterior	283,140.00	0.00
tblArchitecturalCoating	ConstArea_Nonresidential_Interior	849,420.00	0.00
tblGrading	AcresOfGrading	112.50	32.40
tblLandUse	LotAcreage	22.73	19.40
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.4050	6.2371	6.4698	8.2300e-003	0.5618	0.3259	0.8878	0.2376	0.3037	0.5413	0.0000	737.5674	737.5674	0.1174	0.0000	740.0328
Year Two	1.6231	5.5967	6.8680	0.0100	0.3515	0.3033	0.6548	0.0954	0.2845	0.3799	0.0000	866.1902	866.1902	0.0998	0.0000	868.2869
Year Three	2.4485	1.8897	2.1466	3.3500e-003	0.1076	0.1038	0.2114	0.0292	0.0972	0.1263	0.0000	287.9174	287.9174	0.0390	0.0000	288.7372
Total	**5.4766**	**13.7236**	**15.4844**	**0.0216**	**1.0210**	**0.7330**	**1.7540**	**0.3621**	**0.6854**	**1.0475**	**0.0000**	**1,891.6750**	**1,891.6750**	**0.2563**	**0.0000**	**1,897.0569**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	1.4050	6.2371	6.4698	8.2300e-003	0.5618	0.3259	0.8878	0.2376	0.3037	0.5413	0.0000	737.5670	737.5670	0.1174	0.0000	740.0324
Year Two	1.6231	5.5967	6.8680	0.0100	0.3515	0.3033	0.6548	0.0954	0.2845	0.3799	0.0000	866.1898	866.1898	0.0998	0.0000	868.2865
Year Three	2.4485	1.8897	2.1466	3.3500e-003	0.1076	0.1038	0.2114	0.0292	0.0972	0.1263	0.0000	287.9172	287.9172	0.0390	0.0000	288.7370
Total	**5.4766**	**13.7236**	**15.4844**	**0.0216**	**1.0210**	**0.7330**	**1.7540**	**0.3621**	**0.6854**	**1.0475**	**0.0000**	**1,891.6740**	**1,891.6740**	**0.2563**	**0.0000**	**1,897.0559**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/12/2014	3/11/2014	5	20	
2	Grading	Grading	3/12/2014	5/13/2014	5	45	
3	Building Construction	Building Construction	5/14/2014	4/12/2016	5	500	
4	Paving	Paving	4/13/2016	5/31/2016	5	35	
5	Architectural Coating	Architectural Coating	6/1/2016	7/19/2016	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 32.4

Acres of Paving: 0

Residential Indoor: 255,150; Residential Outdoor: 85,050; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37

Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	263.00	100.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	53.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9356
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237
Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9355
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237

Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1527	0.0000	0.1527	0.0763	0.0000	0.0763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7950	133.7950	0.0395	0.0000	134.6253
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1527**	**0.0873**	**0.2400**	**0.0763**	**0.0803**	**0.1566**	**0.0000**	**133.7950**	**133.7950**	**0.0395**	**0.0000**	**134.6253**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1527	0.0000	0.1527	0.0763	0.0000	0.0763	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7949	133.7949	0.0395	0.0000	134.6252
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1527**	**0.0873**	**0.2400**	**0.0763**	**0.0803**	**0.1566**	**0.0000**	**133.7949**	**133.7949**	**0.0395**	**0.0000**	**134.6252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3210	2.5941	1.5712	2.2300e-003		0.1849	0.1849		0.1741	0.1741	0.0000	203.9926	203.9926	0.0519	0.0000	205.0818
Total	**0.3210**	**2.5941**	**1.5712**	**2.2300e-003**		**0.1849**	**0.1849**		**0.1741**	**0.1741**	**0.0000**	**203.9926**	**203.9926**	**0.0519**	**0.0000**	**205.0818**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3298	1.0710	1.4796	2.0000e-003	0.0530	0.0204	0.0734	0.0152	0.0187	0.0339	0.0000	184.7166	184.7166	1.8400e-003	0.0000	184.7553
Worker	0.5318	0.1746	1.7776	2.1600e-003	0.1706	1.9300e-003	0.1725	0.0454	1.7100e-003	0.0471	0.0000	172.3864	172.3864	0.0127	0.0000	172.6520
Total	**0.8616**	**1.2456**	**3.2571**	**4.1600e-003**	**0.2236**	**0.0223**	**0.2459**	**0.0607**	**0.0204**	**0.0811**	**0.0000**	**357.1030**	**357.1030**	**0.0145**	**0.0000**	**357.4072**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3210	2.5941	1.5712	2.2300e-003		0.1849	0.1849		0.1741	0.1741	0.0000	203.9924	203.9924	0.0519	0.0000	205.0816
Total	**0.3210**	**2.5941**	**1.5712**	**2.2300e-003**		**0.1849**	**0.1849**		**0.1741**	**0.1741**	**0.0000**	**203.9924**	**203.9924**	**0.0519**	**0.0000**	**205.0816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.3298	1.0710	1.4796	2.0000e-003	0.0530	0.0204	0.0734	0.0152	0.0187	0.0339	0.0000	184.7166	184.7166	1.8400e-003	0.0000	184.7553
Worker	0.5318	0.1746	1.7776	2.1600e-003	0.1706	1.9300e-003	0.1725	0.0454	1.7100e-003	0.0471	0.0000	172.3864	172.3864	0.0127	0.0000	172.6520
Total	**0.8616**	**1.2456**	**3.2571**	**4.1600e-003**	**0.2236**	**0.0223**	**0.2459**	**0.0607**	**0.0204**	**0.0811**	**0.0000**	**357.1030**	**357.1030**	**0.0145**	**0.0000**	**357.4072**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4132	1.4413	2.0445	3.1300e-003	0.0833	0.0243	0.1076	0.0239	0.0223	0.0463	0.0000	286.4801	286.4801	2.5000e-003	0.0000	286.5326
Worker	0.7324	0.2365	2.3774	3.3800e-003	0.2682	2.7200e-003	0.2709	0.0714	2.4300e-003	0.0738	0.0000	261.2975	261.2975	0.0175	0.0000	261.6640
Total	**1.1456**	**1.6778**	**4.4219**	**6.5100e-003**	**0.3515**	**0.0270**	**0.3785**	**0.0954**	**0.0248**	**0.1201**	**0.0000**	**547.7776**	**547.7776**	**0.0200**	**0.0000**	**548.1966**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.4132	1.4413	2.0445	3.1300e-003	0.0833	0.0243	0.1076	0.0239	0.0223	0.0463	0.0000	286.4801	286.4801	2.5000e-003	0.0000	286.5326
Worker	0.7324	0.2365	2.3774	3.3800e-003	0.2682	2.7200e-003	0.2709	0.0714	2.4300e-003	0.0738	0.0000	261.2975	261.2975	0.0175	0.0000	261.6640
Total	**1.1456**	**1.6778**	**4.4219**	**6.5100e-003**	**0.3515**	**0.0270**	**0.3785**	**0.0954**	**0.0248**	**0.1201**	**0.0000**	**547.7776**	**547.7776**	**0.0200**	**0.0000**	**548.1966**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1243	1.0405	0.6755	9.8000e-004		0.0718	0.0718		0.0675	0.0675	0.0000	88.3861	88.3861	0.0219	0.0000	88.8464
Total	**0.1243**	**1.0405**	**0.6755**	**9.8000e-004**		**0.0718**	**0.0718**		**0.0675**	**0.0675**	**0.0000**	**88.3861**	**88.3861**	**0.0219**	**0.0000**	**88.8464**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1068	0.3514	0.5378	8.7000e-004	0.0233	5.7100e-003	0.0290	6.7000e-003	5.2500e-003	0.0119	0.0000	79.1788	79.1788	6.3000e-004	0.0000	79.1921
Worker	0.1809	0.0574	0.5703	9.4000e-004	0.0750	7.0000e-004	0.0757	0.0200	6.3000e-004	0.0206	0.0000	70.3849	70.3849	4.3300e-003	0.0000	70.4758
Total	**0.2877**	**0.4089**	**1.1081**	**1.8100e-003**	**0.0983**	**6.4100e-003**	**0.1047**	**0.0267**	**5.8800e-003**	**0.0325**	**0.0000**	**149.5637**	**149.5637**	**4.9600e-003**	**0.0000**	**149.6679**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1243	1.0405	0.6755	9.8000e-004		0.0718	0.0718		0.0675	0.0675	0.0000	88.3860	88.3860	0.0219	0.0000	88.8463
Total	**0.1243**	**1.0405**	**0.6755**	**9.8000e-004**		**0.0718**	**0.0718**		**0.0675**	**0.0675**	**0.0000**	**88.3860**	**88.3860**	**0.0219**	**0.0000**	**88.8463**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1068	0.3514	0.5378	8.7000e-004	0.0233	5.7100e-003	0.0290	6.7000e-003	5.2500e-003	0.0119	0.0000	79.1788	79.1788	6.3000e-004	0.0000	79.1921
Worker	0.1809	0.0574	0.5703	9.4000e-004	0.0750	7.0000e-004	0.0757	0.0200	6.3000e-004	0.0206	0.0000	70.3849	70.3849	4.3300e-003	0.0000	70.4758
Total	**0.2877**	**0.4089**	**1.1081**	**1.8100e-003**	**0.0983**	**6.4100e-003**	**0.1047**	**0.0267**	**5.8800e-003**	**0.0325**	**0.0000**	**149.5637**	**149.5637**	**4.9600e-003**	**0.0000**	**149.6679**

3.5 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3918	0.2593	3.9000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	36.7742	36.7742	0.0111	0.0000	37.0071
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3918**	**0.2593**	**3.9000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**36.7742**	**36.7742**	**0.0111**	**0.0000**	**37.0071**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9500e-003	1.5700e-003	0.0156	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.6000e-004	0.0000	1.9247	1.9247	1.2000e-004	0.0000	1.9272
Total	**4.9500e-003**	**1.5700e-003**	**0.0156**	**3.0000e-005**	**2.0500e-003**	**2.0000e-005**	**2.0700e-003**	**5.5000e-004**	**2.0000e-005**	**5.6000e-004**	**0.0000**	**1.9247**	**1.9247**	**1.2000e-004**	**0.0000**	**1.9272**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3918	0.2593	3.9000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	36.7741	36.7741	0.0111	0.0000	37.0071
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3918**	**0.2593**	**3.9000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**36.7741**	**36.7741**	**0.0111**	**0.0000**	**37.0071**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9500e-003	1.5700e-003	0.0156	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.6000e-004	0.0000	1.9247	1.9247	1.2000e-004	0.0000	1.9272
Total	**4.9500e-003**	**1.5700e-003**	**0.0156**	**3.0000e-005**	**2.0500e-003**	**2.0000e-005**	**2.0700e-003**	**5.5000e-004**	**2.0000e-005**	**5.6000e-004**	**0.0000**	**1.9247**	**1.9247**	**1.2000e-004**	**0.0000**	**1.9272**

3.6 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4500e-003	0.0415	0.0330	5.0000e-005		3.4400e-003	3.4400e-003		3.4400e-003	3.4400e-003	0.0000	4.4682	4.4682	5.3000e-004	0.0000	4.4793
Total	**1.9775**	**0.0415**	**0.0330**	**5.0000e-005**		**3.4400e-003**	**3.4400e-003**		**3.4400e-003**	**3.4400e-003**	**0.0000**	**4.4682**	**4.4682**	**5.3000e-004**	**0.0000**	**4.4793**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0175	5.5500e-003	0.0551	9.0000e-005	7.2500e-003	7.0000e-005	7.3100e-003	1.9300e-003	6.0000e-005	1.9900e-003	0.0000	6.8006	6.8006	4.2000e-004	0.0000	6.8093
Total	**0.0175**	**5.5500e-003**	**0.0551**	**9.0000e-005**	**7.2500e-003**	**7.0000e-005**	**7.3100e-003**	**1.9300e-003**	**6.0000e-005**	**1.9900e-003**	**0.0000**	**6.8006**	**6.8006**	**4.2000e-004**	**0.0000**	**6.8093**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9710					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4500e-003	0.0415	0.0330	5.0000e-005		3.4400e-003	3.4400e-003		3.4400e-003	3.4400e-003	0.0000	4.4682	4.4682	5.3000e-004	0.0000	4.4793
Total	**1.9775**	**0.0415**	**0.0330**	**5.0000e-005**		**3.4400e-003**	**3.4400e-003**		**3.4400e-003**	**3.4400e-003**	**0.0000**	**4.4682**	**4.4682**	**5.3000e-004**	**0.0000**	**4.4793**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0175	5.5500e-003	0.0551	9.0000e-005	7.2500e-003	7.0000e-005	7.3100e-003	1.9300e-003	6.0000e-005	1.9900e-003	0.0000	6.8006	6.8006	4.2000e-004	0.0000	6.8093
Total	**0.0175**	**5.5500e-003**	**0.0551**	**9.0000e-005**	**7.2500e-003**	**7.0000e-005**	**7.3100e-003**	**1.9300e-003**	**6.0000e-005**	**1.9900e-003**	**0.0000**	**6.8006**	**6.8006**	**4.2000e-004**	**0.0000**	**6.8093**

Area N - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	41.00	Dwelling Unit	11.30	73,800.00	117

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 11.3

Construction Phase - Painting phase = 30 days

Grading - Area N = 11.3 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	11.30
tblLandUse	LotAcreage	13.31	11.30
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5801	4.7070	3.1172	4.1000e-003	0.2041	0.2989	0.5030	0.1046	0.2798	0.3844	0.0000	378.9819	378.9819	0.0959	0.0000	380.9963
Year Two	1.3911	1.8051	1.2021	1.7300e-003	8.5900e-003	0.1227	0.1313	2.3100e-003	0.1153	0.1176	0.0000	157.3183	157.3183	0.0377	0.0000	158.1090
Total	**1.9712**	**6.5121**	**4.3193**	**5.8300e-003**	**0.2126**	**0.4216**	**0.6343**	**0.1070**	**0.3951**	**0.5020**	**0.0000**	**536.3002**	**536.3002**	**0.1336**	**0.0000**	**539.1053**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.5801	4.7070	3.1172	4.1000e-003	0.2041	0.2989	0.5030	0.1046	0.2798	0.3844	0.0000	378.9815	378.9815	0.0959	0.0000	380.9958
Year Two	1.3911	1.8051	1.2021	1.7300e-003	8.5900e-003	0.1227	0.1313	2.3100e-003	0.1153	0.1176	0.0000	157.3181	157.3181	0.0377	0.0000	158.1088
Total	**1.9712**	**6.5121**	**4.3193**	**5.8300e-003**	**0.2126**	**0.4216**	**0.6343**	**0.1070**	**0.3951**	**0.5020**	**0.0000**	**536.2996**	**536.2996**	**0.1336**	**0.0000**	**539.1047**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 11.3

Acres of Paving: 0

Residential Indoor: 149,445; Residential Outdoor: 49,815; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	15.00	4.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	3.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0963	0.0000	0.0963	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0963**	**0.0582**	**0.1545**	**0.0503**	**0.0535**	**0.1038**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0963	0.0000	0.0963	0.0503	0.0000	0.0503	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0963**	**0.0582**	**0.1545**	**0.0503**	**0.0535**	**0.1038**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0160	0.0519	0.0717	1.0000e-004	2.5700e-003	9.9000e-004	3.5500e-003	7.4000e-004	9.1000e-004	1.6400e-003	0.0000	8.9465	8.9465	9.0000e-005	0.0000	8.9484
Worker	0.0367	0.0121	0.1228	1.5000e-004	0.0118	1.3000e-004	0.0119	3.1400e-003	1.2000e-004	3.2500e-003	0.0000	11.9049	11.9049	8.7000e-004	0.0000	11.9233
Total	**0.0527**	**0.0639**	**0.1944**	**2.5000e-004**	**0.0144**	**1.1200e-003**	**0.0155**	**3.8800e-003**	**1.0300e-003**	**4.8900e-003**	**0.0000**	**20.8514**	**20.8514**	**9.6000e-004**	**0.0000**	**20.8717**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0160	0.0519	0.0717	1.0000e-004	2.5700e-003	9.9000e-004	3.5500e-003	7.4000e-004	9.1000e-004	1.6400e-003	0.0000	8.9465	8.9465	9.0000e-005	0.0000	8.9484
Worker	0.0367	0.0121	0.1228	1.5000e-004	0.0118	1.3000e-004	0.0119	3.1400e-003	1.2000e-004	3.2500e-003	0.0000	11.9049	11.9049	8.7000e-004	0.0000	11.9233
Total	**0.0527**	**0.0639**	**0.1944**	**2.5000e-004**	**0.0144**	**1.1200e-003**	**0.0155**	**3.8800e-003**	**1.0300e-003**	**4.8900e-003**	**0.0000**	**20.8514**	**20.8514**	**9.6000e-004**	**0.0000**	**20.8717**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2700e-003	0.0219	0.0310	5.0000e-005	1.2600e-003	3.7000e-004	1.6300e-003	3.6000e-004	3.4000e-004	7.0000e-004	0.0000	4.3466	4.3466	4.0000e-005	0.0000	4.3474
Worker	0.0158	5.1200e-003	0.0514	7.0000e-005	5.8000e-003	6.0000e-005	5.8600e-003	1.5400e-003	5.0000e-005	1.6000e-003	0.0000	5.6528	5.6528	3.8000e-004	0.0000	5.6608
Total	**0.0221**	**0.0270**	**0.0825**	**1.2000e-004**	**7.0600e-003**	**4.3000e-004**	**7.4900e-003**	**1.9000e-003**	**3.9000e-004**	**2.3000e-003**	**0.0000**	**9.9994**	**9.9994**	**4.2000e-004**	**0.0000**	**10.0081**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.2700e-003	0.0219	0.0310	5.0000e-005	1.2600e-003	3.7000e-004	1.6300e-003	3.6000e-004	3.4000e-004	7.0000e-004	0.0000	4.3466	4.3466	4.0000e-005	0.0000	4.3474
Worker	0.0158	5.1200e-003	0.0514	7.0000e-005	5.8000e-003	6.0000e-005	5.8600e-003	1.5400e-003	5.0000e-005	1.6000e-003	0.0000	5.6528	5.6528	3.8000e-004	0.0000	5.6608
Total	**0.0221**	**0.0270**	**0.0825**	**1.2000e-004**	**7.0600e-003**	**4.3000e-004**	**7.4900e-003**	**1.9000e-003**	**3.9000e-004**	**2.3000e-003**	**0.0000**	**9.9994**	**9.9994**	**4.2000e-004**	**0.0000**	**10.0081**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.1606**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	3.1000e-004	3.1200e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3426	0.3426	2.0000e-005	0.0000	0.3431
Total	**9.6000e-004**	**3.1000e-004**	**3.1200e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3426**	**0.3426**	**2.0000e-005**	**0.0000**	**0.3431**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.1545					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.1606**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.6000e-004	3.1000e-004	3.1200e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3426	0.3426	2.0000e-005	0.0000	0.3431
Total	**9.6000e-004**	**3.1000e-004**	**3.1200e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3426**	**0.3426**	**2.0000e-005**	**0.0000**	**0.3431**

Area P - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	119.00	Dwelling Unit	32.90	214,200.00	340

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 32.9

Construction Phase - Painting phase = 50 days

Grading - Area P = 32.9 acres

Architectural Coating -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	35.00	50.00
tblGrading	AcresOfGrading	112.50	32.90
tblLandUse	LotAcreage	38.64	32.90
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6732	5.1593	3.6957	4.6800e-003	0.3733	0.3066	0.6799	0.1864	0.2860	0.4724	0.0000	432.6624	432.6624	0.1052	0.0000	434.8720
Year Two	0.6510	4.1450	3.1006	4.4600e-003	0.0547	0.2798	0.3345	0.0148	0.2631	0.2778	0.0000	398.3767	398.3767	0.0831	0.0000	400.1211
Year Three	3.5735	1.5495	1.1740	1.7600e-003	0.0191	0.0997	0.1188	5.1500e-003	0.0935	0.0987	0.0000	156.9188	156.9188	0.0348	0.0000	157.6491
Total	**4.8977**	**10.8538**	**7.9703**	**0.0109**	**0.4471**	**0.6861**	**1.1332**	**0.2063**	**0.6426**	**0.8489**	**0.0000**	**987.9579**	**987.9579**	**0.2231**	**0.0000**	**992.6423**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6732	5.1593	3.6957	4.6800e-003	0.3733	0.3066	0.6799	0.1864	0.2860	0.4724	0.0000	432.6620	432.6620	0.1052	0.0000	434.8716
Year Two	0.6510	4.1449	3.1006	4.4600e-003	0.0547	0.2798	0.3345	0.0148	0.2631	0.2778	0.0000	398.3763	398.3763	0.0831	0.0000	400.1207
Year Three	3.5735	1.5495	1.1740	1.7600e-003	0.0191	0.0997	0.1188	5.1500e-003	0.0935	0.0987	0.0000	156.9187	156.9187	0.0348	0.0000	157.6490
Total	**4.8977**	**10.8538**	**7.9703**	**0.0109**	**0.4471**	**0.6861**	**1.1332**	**0.2063**	**0.6426**	**0.8489**	**0.0000**	**987.9569**	**987.9569**	**0.2231**	**0.0000**	**992.6413**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	2/12/2014	3/11/2014	5	20	
2	Grading	Grading	3/12/2014	5/13/2014	5	45	
3	Building Construction	Building Construction	5/14/2014	4/12/2016	5	500	
4	Paving	Paving	4/13/2016	5/31/2016	5	35	
5	Architectural Coating	Architectural Coating	6/1/2016	8/9/2016	5	50	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 32.9

Acres of Paving: 0

Residential Indoor: 433,755; Residential Outdoor: 144,585; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	43.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	9.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9356
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9356**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237
Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9355
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9355**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3800e-003	1.4400e-003	0.0147	2.0000e-005	1.4100e-003	2.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.4215	1.4215	1.0000e-004	0.0000	1.4237
Total	**4.3800e-003**	**1.4400e-003**	**0.0147**	**2.0000e-005**	**1.4100e-003**	**2.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4215**	**1.4215**	**1.0000e-004**	**0.0000**	**1.4237**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1529	0.0000	0.1529	0.0764	0.0000	0.0764	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7950	133.7950	0.0395	0.0000	134.6253
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1529**	**0.0873**	**0.2402**	**0.0764**	**0.0803**	**0.1567**	**0.0000**	**133.7950**	**133.7950**	**0.0395**	**0.0000**	**134.6253**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1529	0.0000	0.1529	0.0764	0.0000	0.0764	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1541	1.8162	1.1606	1.3900e-003		0.0873	0.0873		0.0803	0.0803	0.0000	133.7949	133.7949	0.0395	0.0000	134.6252
Total	**0.1541**	**1.8162**	**1.1606**	**1.3900e-003**	**0.1529**	**0.0873**	**0.2402**	**0.0764**	**0.0803**	**0.1567**	**0.0000**	**133.7949**	**133.7949**	**0.0395**	**0.0000**	**134.6252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0110	3.6000e-003	0.0366	4.0000e-005	3.5200e-003	4.0000e-005	3.5600e-003	9.4000e-004	4.0000e-005	9.7000e-004	0.0000	3.5537	3.5537	2.6000e-004	0.0000	3.5592
Total	**0.0110**	**3.6000e-003**	**0.0366**	**4.0000e-005**	**3.5200e-003**	**4.0000e-005**	**3.5600e-003**	**9.4000e-004**	**4.0000e-005**	**9.7000e-004**	**0.0000**	**3.5537**	**3.5537**	**2.6000e-004**	**0.0000**	**3.5592**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3210	2.5941	1.5712	2.2300e-003		0.1849	0.1849		0.1741	0.1741	0.0000	203.9926	203.9926	0.0519	0.0000	205.0818
Total	**0.3210**	**2.5941**	**1.5712**	**2.2300e-003**		**0.1849**	**0.1849**		**0.1741**	**0.1741**	**0.0000**	**203.9926**	**203.9926**	**0.0519**	**0.0000**	**205.0818**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0429	0.1392	0.1923	2.6000e-004	6.8900e-003	2.6500e-003	9.5400e-003	1.9800e-003	2.4300e-003	4.4100e-003	0.0000	24.0132	24.0132	2.4000e-004	0.0000	24.0182
Worker	0.0869	0.0286	0.2906	3.5000e-004	0.0279	3.2000e-004	0.0282	7.4300e-003	2.8000e-004	7.7100e-003	0.0000	28.1849	28.1849	2.0700e-003	0.0000	28.2283
Total	**0.1298**	**0.1678**	**0.4830**	**6.1000e-004**	**0.0348**	**2.9700e-003**	**0.0377**	**9.4100e-003**	**2.7100e-003**	**0.0121**	**0.0000**	**52.1980**	**52.1980**	**2.3100e-003**	**0.0000**	**52.2465**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3210	2.5941	1.5712	2.2300e-003		0.1849	0.1849		0.1741	0.1741	0.0000	203.9924	203.9924	0.0519	0.0000	205.0816
Total	**0.3210**	**2.5941**	**1.5712**	**2.2300e-003**		**0.1849**	**0.1849**		**0.1741**	**0.1741**	**0.0000**	**203.9924**	**203.9924**	**0.0519**	**0.0000**	**205.0816**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0429	0.1392	0.1923	2.6000e-004	6.8900e-003	2.6500e-003	9.5400e-003	1.9800e-003	2.4300e-003	4.4100e-003	0.0000	24.0132	24.0132	2.4000e-004	0.0000	24.0182
Worker	0.0869	0.0286	0.2906	3.5000e-004	0.0279	3.2000e-004	0.0282	7.4300e-003	2.8000e-004	7.7100e-003	0.0000	28.1849	28.1849	2.0700e-003	0.0000	28.2283
Total	**0.1298**	**0.1678**	**0.4830**	**6.1000e-004**	**0.0348**	**2.9700e-003**	**0.0377**	**9.4100e-003**	**2.7100e-003**	**0.0121**	**0.0000**	**52.1980**	**52.1980**	**2.3100e-003**	**0.0000**	**52.2465**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0537	0.1874	0.2658	4.1000e-004	0.0108	3.1600e-003	0.0140	3.1100e-003	2.9000e-003	6.0200e-003	0.0000	37.2424	37.2424	3.3000e-004	0.0000	37.2492
Worker	0.1197	0.0387	0.3887	5.5000e-004	0.0439	4.4000e-004	0.0443	0.0117	4.0000e-004	0.0121	0.0000	42.7217	42.7217	2.8500e-003	0.0000	42.7816
Total	**0.1735**	**0.2260**	**0.6545**	**9.6000e-004**	**0.0547**	**3.6000e-003**	**0.0583**	**0.0148**	**3.3000e-003**	**0.0181**	**0.0000**	**79.9641**	**79.9641**	**3.1800e-003**	**0.0000**	**80.0308**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0537	0.1874	0.2658	4.1000e-004	0.0108	3.1600e-003	0.0140	3.1100e-003	2.9000e-003	6.0200e-003	0.0000	37.2424	37.2424	3.3000e-004	0.0000	37.2492
Worker	0.1197	0.0387	0.3887	5.5000e-004	0.0439	4.4000e-004	0.0443	0.0117	4.0000e-004	0.0121	0.0000	42.7217	42.7217	2.8500e-003	0.0000	42.7816
Total	**0.1735**	**0.2260**	**0.6545**	**9.6000e-004**	**0.0547**	**3.6000e-003**	**0.0583**	**0.0148**	**3.3000e-003**	**0.0181**	**0.0000**	**79.9641**	**79.9641**	**3.1800e-003**	**0.0000**	**80.0308**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1243	1.0405	0.6755	9.8000e-004		0.0718	0.0718		0.0675	0.0675	0.0000	88.3861	88.3861	0.0219	0.0000	88.8464
Total	**0.1243**	**1.0405**	**0.6755**	**9.8000e-004**		**0.0718**	**0.0718**		**0.0675**	**0.0675**	**0.0000**	**88.3861**	**88.3861**	**0.0219**	**0.0000**	**88.8464**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.0457	0.0699	1.1000e-004	3.0300e-003	7.4000e-004	3.7700e-003	8.7000e-004	6.8000e-004	1.5500e-003	0.0000	10.2932	10.2932	8.0000e-005	0.0000	10.2950
Worker	0.0296	9.3900e-003	0.0933	1.5000e-004	0.0123	1.1000e-004	0.0124	3.2700e-003	1.0000e-004	3.3700e-003	0.0000	11.5078	11.5078	7.1000e-004	0.0000	11.5227
Total	**0.0435**	**0.0551**	**0.1632**	**2.6000e-004**	**0.0153**	**8.5000e-004**	**0.0162**	**4.1400e-003**	**7.8000e-004**	**4.9200e-003**	**0.0000**	**21.8010**	**21.8010**	**7.9000e-004**	**0.0000**	**21.8176**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1243	1.0405	0.6755	9.8000e-004		0.0718	0.0718		0.0675	0.0675	0.0000	88.3860	88.3860	0.0219	0.0000	88.8463
Total	**0.1243**	**1.0405**	**0.6755**	**9.8000e-004**		**0.0718**	**0.0718**		**0.0675**	**0.0675**	**0.0000**	**88.3860**	**88.3860**	**0.0219**	**0.0000**	**88.8463**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0139	0.0457	0.0699	1.1000e-004	3.0300e-003	7.4000e-004	3.7700e-003	8.7000e-004	6.8000e-004	1.5500e-003	0.0000	10.2932	10.2932	8.0000e-005	0.0000	10.2950
Worker	0.0296	9.3900e-003	0.0933	1.5000e-004	0.0123	1.1000e-004	0.0124	3.2700e-003	1.0000e-004	3.3700e-003	0.0000	11.5078	11.5078	7.1000e-004	0.0000	11.5227
Total	**0.0435**	**0.0551**	**0.1632**	**2.6000e-004**	**0.0153**	**8.5000e-004**	**0.0162**	**4.1400e-003**	**7.8000e-004**	**4.9200e-003**	**0.0000**	**21.8010**	**21.8010**	**7.9000e-004**	**0.0000**	**21.8176**

3.5 Paving - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3918	0.2593	3.9000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	36.7742	36.7742	0.0111	0.0000	37.0071
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3918**	**0.2593**	**3.9000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**36.7742**	**36.7742**	**0.0111**	**0.0000**	**37.0071**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9500e-003	1.5700e-003	0.0156	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.6000e-004	0.0000	1.9247	1.9247	1.2000e-004	0.0000	1.9272
Total	**4.9500e-003**	**1.5700e-003**	**0.0156**	**3.0000e-005**	**2.0500e-003**	**2.0000e-005**	**2.0700e-003**	**5.5000e-004**	**2.0000e-005**	**5.6000e-004**	**0.0000**	**1.9247**	**1.9247**	**1.2000e-004**	**0.0000**	**1.9272**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0366	0.3918	0.2593	3.9000e-004		0.0221	0.0221		0.0203	0.0203	0.0000	36.7741	36.7741	0.0111	0.0000	37.0071
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0366**	**0.3918**	**0.2593**	**3.9000e-004**		**0.0221**	**0.0221**		**0.0203**	**0.0203**	**0.0000**	**36.7741**	**36.7741**	**0.0111**	**0.0000**	**37.0071**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9500e-003	1.5700e-003	0.0156	3.0000e-005	2.0500e-003	2.0000e-005	2.0700e-003	5.5000e-004	2.0000e-005	5.6000e-004	0.0000	1.9247	1.9247	1.2000e-004	0.0000	1.9272
Total	**4.9500e-003**	**1.5700e-003**	**0.0156**	**3.0000e-005**	**2.0500e-003**	**2.0000e-005**	**2.0700e-003**	**5.5000e-004**	**2.0000e-005**	**5.6000e-004**	**0.0000**	**1.9247**	**1.9247**	**1.2000e-004**	**0.0000**	**1.9272**

3.6 Architectural Coating - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.3508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2100e-003	0.0593	0.0471	7.0000e-005		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	6.3831	6.3831	7.5000e-004	0.0000	6.3989
Total	**3.3600**	**0.0593**	**0.0471**	**7.0000e-005**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**6.3831**	**6.3831**	**7.5000e-004**	**0.0000**	**6.3989**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2400e-003	1.3500e-003	0.0134	2.0000e-005	1.7600e-003	2.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6497	1.6497	1.0000e-004	0.0000	1.6519
Total	**4.2400e-003**	**1.3500e-003**	**0.0134**	**2.0000e-005**	**1.7600e-003**	**2.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6497**	**1.6497**	**1.0000e-004**	**0.0000**	**1.6519**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.3508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.2100e-003	0.0593	0.0471	7.0000e-005		4.9200e-003	4.9200e-003		4.9200e-003	4.9200e-003	0.0000	6.3831	6.3831	7.5000e-004	0.0000	6.3989
Total	**3.3600**	**0.0593**	**0.0471**	**7.0000e-005**		**4.9200e-003**	**4.9200e-003**		**4.9200e-003**	**4.9200e-003**	**0.0000**	**6.3831**	**6.3831**	**7.5000e-004**	**0.0000**	**6.3989**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2400e-003	1.3500e-003	0.0134	2.0000e-005	1.7600e-003	2.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6497	1.6497	1.0000e-004	0.0000	1.6519
Total	**4.2400e-003**	**1.3500e-003**	**0.0134**	**2.0000e-005**	**1.7600e-003**	**2.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6497**	**1.6497**	**1.0000e-004**	**0.0000**	**1.6519**

Area Q - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	19.00	Dwelling Unit	10.40	34,200.00	54
Electric Substation	30.49	1000sqft	2.00	30,492.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 12.4

Construction Phase - Painting phase = 30 days

Grading - Area Q = 12.4 acres

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	30.00
tblGrading	AcresOfGrading	75.00	12.40
tblLandUse	LotAcreage	6.17	10.40
tblLandUse	LotAcreage	0.70	2.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6043	4.7499	3.2118	4.2200e-003	0.2105	0.2997	0.5102	0.1063	0.2805	0.3868	0.0000	389.6601	389.6601	0.0963	0.0000	391.6820
Year Two	1.1353	1.8233	1.2436	1.8000e-003	0.0116	0.1230	0.1346	3.1300e-003	0.1155	0.1187	0.0000	162.5767	162.5767	0.0378	0.0000	163.3708
Total	**1.7396**	**6.5732**	**4.4554**	**6.0200e-003**	**0.2221**	**0.4227**	**0.6448**	**0.1094**	**0.3961**	**0.5055**	**0.0000**	**552.2368**	**552.2368**	**0.1341**	**0.0000**	**555.0528**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6043	4.7499	3.2118	4.2200e-003	0.2105	0.2997	0.5102	0.1063	0.2805	0.3868	0.0000	389.6597	389.6597	0.0963	0.0000	391.6815
Year Two	1.1353	1.8233	1.2436	1.8000e-003	0.0116	0.1230	0.1346	3.1300e-003	0.1155	0.1187	0.0000	162.5765	162.5765	0.0378	0.0000	163.3707
Total	**1.7396**	**6.5732**	**4.4554**	**6.0200e-003**	**0.2221**	**0.4227**	**0.6448**	**0.1094**	**0.3961**	**0.5055**	**0.0000**	**552.2362**	**552.2362**	**0.1341**	**0.0000**	**555.0522**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/29/2014	2/11/2014	5	10	
2	Grading	Grading	2/12/2014	3/25/2014	5	30	
3	Building Construction	Building Construction	3/26/2014	5/19/2015	5	300	
4	Paving	Paving	5/20/2015	6/16/2015	5	20	
5	Architectural Coating	Architectural Coating	6/17/2015	7/28/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 12.4

Acres of Paving: 0

Residential Indoor: 69,255; Residential Outdoor: 23,085; Non-Residential Indoor: 45,738; Non-Residential Outdoor: 15,246 (Architectural

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	7.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0265	0.2881	0.2148	2.0000e-004		0.0157	0.0157		0.0144	0.0144	0.0000	18.8508	18.8508	5.5700e-003	0.0000	18.9678
Total	**0.0265**	**0.2881**	**0.2148**	**2.0000e-004**	**0.0903**	**0.0157**	**0.1060**	**0.0497**	**0.0144**	**0.0641**	**0.0000**	**18.8508**	**18.8508**	**5.5700e-003**	**0.0000**	**18.9678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0969	0.0000	0.0969	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1967	89.1967	0.0264	0.0000	89.7502
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0969**	**0.0582**	**0.1551**	**0.0504**	**0.0535**	**0.1039**	**0.0000**	**89.1967**	**89.1967**	**0.0264**	**0.0000**	**89.7502**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0969	0.0000	0.0969	0.0504	0.0000	0.0504	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1027	1.2108	0.7738	9.3000e-004		0.0582	0.0582		0.0535	0.0535	0.0000	89.1966	89.1966	0.0264	0.0000	89.7501
Total	**0.1027**	**1.2108**	**0.7738**	**9.3000e-004**	**0.0969**	**0.0582**	**0.1551**	**0.0504**	**0.0535**	**0.1039**	**0.0000**	**89.1966**	**89.1966**	**0.0264**	**0.0000**	**89.7501**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.3100e-003	2.4000e-003	0.0244	3.0000e-005	2.3400e-003	3.0000e-005	2.3700e-003	6.2000e-004	2.0000e-005	6.5000e-004	0.0000	2.3691	2.3691	1.7000e-004	0.0000	2.3728
Total	**7.3100e-003**	**2.4000e-003**	**0.0244**	**3.0000e-005**	**2.3400e-003**	**3.0000e-005**	**2.3700e-003**	**6.2000e-004**	**2.0000e-005**	**6.5000e-004**	**0.0000**	**2.3691**	**2.3691**	**1.7000e-004**	**0.0000**	**2.3728**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0031	247.0031	0.0628	0.0000	248.3220
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0031**	**247.0031**	**0.0628**	**0.0000**	**248.3220**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	0.0908	0.1254	1.7000e-004	4.4900e-003	1.7300e-003	6.2200e-003	1.2900e-003	1.5900e-003	2.8800e-003	0.0000	15.6564	15.6564	1.6000e-004	0.0000	15.6597
Worker	0.0490	0.0161	0.1637	2.0000e-004	0.0157	1.8000e-004	0.0159	4.1800e-003	1.6000e-004	4.3400e-003	0.0000	15.8732	15.8732	1.1600e-003	0.0000	15.8977
Total	**0.0769**	**0.1069**	**0.2891**	**3.7000e-004**	**0.0202**	**1.9100e-003**	**0.0221**	**5.4700e-003**	**1.7500e-003**	**7.2200e-003**	**0.0000**	**31.5296**	**31.5296**	**1.3200e-003**	**0.0000**	**31.5574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3887	3.1410	1.9025	2.7000e-003		0.2239	0.2239		0.2108	0.2108	0.0000	247.0028	247.0028	0.0628	0.0000	248.3217
Total	**0.3887**	**3.1410**	**1.9025**	**2.7000e-003**		**0.2239**	**0.2239**		**0.2108**	**0.2108**	**0.0000**	**247.0028**	**247.0028**	**0.0628**	**0.0000**	**248.3217**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0280	0.0908	0.1254	1.7000e-004	4.4900e-003	1.7300e-003	6.2200e-003	1.2900e-003	1.5900e-003	2.8800e-003	0.0000	15.6564	15.6564	1.6000e-004	0.0000	15.6597
Worker	0.0490	0.0161	0.1637	2.0000e-004	0.0157	1.8000e-004	0.0159	4.1800e-003	1.6000e-004	4.3400e-003	0.0000	15.8732	15.8732	1.1600e-003	0.0000	15.8977
Total	**0.0769**	**0.1069**	**0.2891**	**3.7000e-004**	**0.0202**	**1.9100e-003**	**0.0221**	**5.4700e-003**	**1.7500e-003**	**7.2200e-003**	**0.0000**	**31.5296**	**31.5296**	**1.3200e-003**	**0.0000**	**31.5574**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7772	120.7772	0.0303	0.0000	121.4136
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7772**	**120.7772**	**0.0303**	**0.0000**	**121.4136**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0383	0.0543	8.0000e-005	2.2100e-003	6.5000e-004	2.8600e-003	6.4000e-004	5.9000e-004	1.2300e-003	0.0000	7.6065	7.6065	7.0000e-005	0.0000	7.6079
Worker	0.0211	6.8200e-003	0.0686	1.0000e-004	7.7400e-003	8.0000e-005	7.8100e-003	2.0600e-003	7.0000e-005	2.1300e-003	0.0000	7.5371	7.5371	5.0000e-004	0.0000	7.5477
Total	**0.0321**	**0.0451**	**0.1229**	**1.8000e-004**	**9.9500e-003**	**7.3000e-004**	**0.0107**	**2.7000e-003**	**6.6000e-004**	**3.3600e-003**	**0.0000**	**15.1436**	**15.1436**	**5.7000e-004**	**0.0000**	**15.1556**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1811	1.4865	0.9279	1.3300e-003		0.1048	0.1048		0.0985	0.0985	0.0000	120.7771	120.7771	0.0303	0.0000	121.4134
Total	**0.1811**	**1.4865**	**0.9279**	**1.3300e-003**		**0.1048**	**0.1048**		**0.0985**	**0.0985**	**0.0000**	**120.7771**	**120.7771**	**0.0303**	**0.0000**	**121.4134**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0110	0.0383	0.0543	8.0000e-005	2.2100e-003	6.5000e-004	2.8600e-003	6.4000e-004	5.9000e-004	1.2300e-003	0.0000	7.6065	7.6065	7.0000e-005	0.0000	7.6079
Worker	0.0211	6.8200e-003	0.0686	1.0000e-004	7.7400e-003	8.0000e-005	7.8100e-003	2.0600e-003	7.0000e-005	2.1300e-003	0.0000	7.5371	7.5371	5.0000e-004	0.0000	7.5477
Total	**0.0321**	**0.0451**	**0.1229**	**1.8000e-004**	**9.9500e-003**	**7.3000e-004**	**0.0107**	**2.7000e-003**	**6.6000e-004**	**3.3600e-003**	**0.0000**	**15.1436**	**15.1436**	**5.7000e-004**	**0.0000**	**15.1556**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0232	0.2518	0.1498	2.2000e-004		0.0142	0.0142		0.0130	0.0130	0.0000	21.2272	21.2272	6.3400e-003	0.0000	21.3603
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0232**	**0.2518**	**0.1498**	**2.2000e-004**		**0.0142**	**0.0142**		**0.0130**	**0.0130**	**0.0000**	**21.2272**	**21.2272**	**6.3400e-003**	**0.0000**	**21.3603**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-003	1.0300e-003	0.0104	1.0000e-005	1.1700e-003	1.0000e-005	1.1800e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.1420	1.1420	8.0000e-005	0.0000	1.1436
Total	**3.2000e-003**	**1.0300e-003**	**0.0104**	**1.0000e-005**	**1.1700e-003**	**1.0000e-005**	**1.1800e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.1420**	**1.1420**	**8.0000e-005**	**0.0000**	**1.1436**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8883					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**0.8944**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	4.1000e-004	4.1600e-003	1.0000e-005	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4568	0.4568	3.0000e-005	0.0000	0.4574
Total	**1.2800e-003**	**4.1000e-004**	**4.1600e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4574**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.8883					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**0.8944**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2800e-003	4.1000e-004	4.1600e-003	1.0000e-005	4.7000e-004	0.0000	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4568	0.4568	3.0000e-005	0.0000	0.4574
Total	**1.2800e-003**	**4.1000e-004**	**4.1600e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4568**	**0.4568**	**3.0000e-005**	**0.0000**	**0.4574**

Area R - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	122.00	Dwelling Unit	4.50	122,000.00	349

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 4.5

Construction Phase - Painting phase = 30 days

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	18.00	30.00
tblConstructionPhase	NumDays	230.00	300.00
tblLandUse	LotAcreage	7.63	4.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.8408	4.4801	3.7462	5.0200e-003	0.1678	0.2985	0.4663	0.0642	0.2805	0.3447	0.0000	448.5388	448.5388	0.0904	0.0000	450.4373
Year Two	2.0965	1.0583	0.8726	1.2600e-003	0.0236	0.0702	0.0938	6.3200e-003	0.0660	0.0723	0.0000	111.2202	111.2202	0.0224	0.0000	111.6914
Total	**2.9372**	**5.5383**	**4.6188**	**6.2800e-003**	**0.1913**	**0.3687**	**0.5600**	**0.0705**	**0.3465**	**0.4170**	**0.0000**	**559.7590**	**559.7590**	**0.1129**	**0.0000**	**562.1287**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.8408	4.4800	3.7462	5.0200e-003	0.1678	0.2985	0.4663	0.0642	0.2805	0.3447	0.0000	448.5384	448.5384	0.0904	0.0000	450.4369
Year Two	2.0965	1.0583	0.8726	1.2600e-003	0.0236	0.0702	0.0938	6.3200e-003	0.0660	0.0723	0.0000	111.2201	111.2201	0.0224	0.0000	111.6913
Total	**2.9372**	**5.5383**	**4.6188**	**6.2800e-003**	**0.1913**	**0.3687**	**0.5600**	**0.0705**	**0.3465**	**0.4170**	**0.0000**	**559.7585**	**559.7585**	**0.1129**	**0.0000**	**562.1282**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2014	1/7/2014	5	5	
2	Grading	Grading	1/8/2014	1/17/2014	5	8	
3	Building Construction	Building Construction	1/18/2014	3/13/2015	5	300	
4	Paving	Paving	3/14/2015	4/8/2015	5	18	
5	Architectural Coating	Architectural Coating	4/9/2015	5/20/2015	5	30	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 247,050; Residential Outdoor: 82,350; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Grading	Excavators	1	8.00	162	0.38
Paving	Pavers	1	8.00	125	0.42
Paving	Rollers	2	6.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37

Grading	Graders	1	8.00	174	0.41
Paving	Paving Equipment	2	6.00	130	0.36
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	88.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1441	0.1074	1.0000e-004		7.8400e-003	7.8400e-003		7.2200e-003	7.2200e-003	0.0000	9.4254	9.4254	2.7900e-003	0.0000	9.4839
Total	**0.0132**	**0.1441**	**0.1074**	**1.0000e-004**	**0.0452**	**7.8400e-003**	**0.0530**	**0.0248**	**7.2200e-003**	**0.0321**	**0.0000**	**9.4254**	**9.4254**	**2.7900e-003**	**0.0000**	**9.4839**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	3.6000e-004	3.6600e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3554	0.3554	3.0000e-005	0.0000	0.3559
Total	**1.1000e-003**	**3.6000e-004**	**3.6600e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3554**	**0.3554**	**3.0000e-005**	**0.0000**	**0.3559**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0452	0.0000	0.0452	0.0248	0.0000	0.0248	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0132	0.1441	0.1074	1.0000e-004		7.8400e-003	7.8400e-003		7.2200e-003	7.2200e-003	0.0000	9.4254	9.4254	2.7900e-003	0.0000	9.4839
Total	**0.0132**	**0.1441**	**0.1074**	**1.0000e-004**	**0.0452**	**7.8400e-003**	**0.0530**	**0.0248**	**7.2200e-003**	**0.0321**	**0.0000**	**9.4254**	**9.4254**	**2.7900e-003**	**0.0000**	**9.4839**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-003	3.6000e-004	3.6600e-003	0.0000	3.5000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.3554	0.3554	3.0000e-005	0.0000	0.3559
Total	**1.1000e-003**	**3.6000e-004**	**3.6600e-003**	**0.0000**	**3.5000e-004**	**0.0000**	**3.6000e-004**	**9.0000e-005**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3554**	**0.3554**	**3.0000e-005**	**0.0000**	**0.3559**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1644	0.1070	1.2000e-004		9.4900e-003	9.4900e-003		8.7300e-003	8.7300e-003	0.0000	11.4756	11.4756	3.3900e-003	0.0000	11.5468
Total	**0.0155**	**0.1644**	**0.1070**	**1.2000e-004**	**0.0262**	**9.4900e-003**	**0.0357**	**0.0135**	**8.7300e-003**	**0.0222**	**0.0000**	**11.4756**	**11.4756**	**3.3900e-003**	**0.0000**	**11.5468**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	4.8000e-004	4.8900e-003	1.0000e-005	4.7000e-004	1.0000e-005	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4738	0.4738	3.0000e-005	0.0000	0.4746
Total	**1.4600e-003**	**4.8000e-004**	**4.8900e-003**	**1.0000e-005**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4738**	**0.4738**	**3.0000e-005**	**0.0000**	**0.4746**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0262	0.0000	0.0262	0.0135	0.0000	0.0135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0155	0.1644	0.1070	1.2000e-004		9.4900e-003	9.4900e-003		8.7300e-003	8.7300e-003	0.0000	11.4756	11.4756	3.3900e-003	0.0000	11.5468
Total	**0.0155**	**0.1644**	**0.1070**	**1.2000e-004**	**0.0262**	**9.4900e-003**	**0.0357**	**0.0135**	**8.7300e-003**	**0.0222**	**0.0000**	**11.4756**	**11.4756**	**3.3900e-003**	**0.0000**	**11.5468**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4600e-003	4.8000e-004	4.8900e-003	1.0000e-005	4.7000e-004	1.0000e-005	4.7000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.4738	0.4738	3.0000e-005	0.0000	0.4746
Total	**1.4600e-003**	**4.8000e-004**	**4.8900e-003**	**1.0000e-005**	**4.7000e-004**	**1.0000e-005**	**4.7000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4738**	**0.4738**	**3.0000e-005**	**0.0000**	**0.4746**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4796	3.8755	2.3473	3.3300e-003		0.2763	0.2763		0.2601	0.2601	0.0000	304.7600	304.7600	0.0775	0.0000	306.3873
Total	**0.4796**	**3.8755**	**2.3473**	**3.3300e-003**		**0.2763**	**0.2763**		**0.2601**	**0.2601**	**0.0000**	**304.7600**	**304.7600**	**0.0775**	**0.0000**	**306.3873**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0641	0.2080	0.2874	3.9000e-004	0.0103	3.9600e-003	0.0143	2.9600e-003	3.6300e-003	6.5900e-003	0.0000	35.8751	35.8751	3.6000e-004	0.0000	35.8826
Worker	0.2658	0.0873	0.8886	1.0800e-003	0.0853	9.6000e-004	0.0862	0.0227	8.6000e-004	0.0236	0.0000	86.1735	86.1735	6.3200e-003	0.0000	86.3062
Total	**0.3299**	**0.2953**	**1.1759**	**1.4700e-003**	**0.0956**	**4.9200e-003**	**0.1005**	**0.0257**	**4.4900e-003**	**0.0302**	**0.0000**	**122.0485**	**122.0485**	**6.6800e-003**	**0.0000**	**122.1888**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4796	3.8755	2.3473	3.3300e-003		0.2763	0.2763		0.2601	0.2601	0.0000	304.7597	304.7597	0.0775	0.0000	306.3870
Total	**0.4796**	**3.8755**	**2.3473**	**3.3300e-003**		**0.2763**	**0.2763**		**0.2601**	**0.2601**	**0.0000**	**304.7597**	**304.7597**	**0.0775**	**0.0000**	**306.3870**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0641	0.2080	0.2874	3.9000e-004	0.0103	3.9600e-003	0.0143	2.9600e-003	3.6300e-003	6.5900e-003	0.0000	35.8751	35.8751	3.6000e-004	0.0000	35.8826
Worker	0.2658	0.0873	0.8886	1.0800e-003	0.0853	9.6000e-004	0.0862	0.0227	8.6000e-004	0.0236	0.0000	86.1735	86.1735	6.3200e-003	0.0000	86.3062
Total	**0.3299**	**0.2953**	**1.1759**	**1.4700e-003**	**0.0956**	**4.9200e-003**	**0.1005**	**0.0257**	**4.4900e-003**	**0.0302**	**0.0000**	**122.0485**	**122.0485**	**6.6800e-003**	**0.0000**	**122.1888**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0951	0.7808	0.4874	7.0000e-004		0.0550	0.0550		0.0518	0.0518	0.0000	63.4385	63.4385	0.0159	0.0000	63.7728
Total	**0.0951**	**0.7808**	**0.4874**	**7.0000e-004**		**0.0550**	**0.0550**		**0.0518**	**0.0518**	**0.0000**	**63.4385**	**63.4385**	**0.0159**	**0.0000**	**63.7728**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0107	0.0373	0.0530	8.0000e-005	2.1600e-003	6.3000e-004	2.7900e-003	6.2000e-004	5.8000e-004	1.2000e-003	0.0000	7.4199	7.4199	6.0000e-005	0.0000	7.4213
Worker	0.0488	0.0158	0.1585	2.3000e-004	0.0179	1.8000e-004	0.0181	4.7600e-003	1.6000e-004	4.9200e-003	0.0000	17.4191	17.4191	1.1600e-003	0.0000	17.4435
Total	**0.0595**	**0.0531**	**0.2114**	**3.1000e-004**	**0.0200**	**8.1000e-004**	**0.0209**	**5.3800e-003**	**7.4000e-004**	**6.1200e-003**	**0.0000**	**24.8390**	**24.8390**	**1.2200e-003**	**0.0000**	**24.8648**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0951	0.7808	0.4874	7.0000e-004		0.0550	0.0550		0.0518	0.0518	0.0000	63.4385	63.4385	0.0159	0.0000	63.7727
Total	**0.0951**	**0.7808**	**0.4874**	**7.0000e-004**		**0.0550**	**0.0550**		**0.0518**	**0.0518**	**0.0000**	**63.4385**	**63.4385**	**0.0159**	**0.0000**	**63.7727**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0107	0.0373	0.0530	8.0000e-005	2.1600e-003	6.3000e-004	2.7900e-003	6.2000e-004	5.8000e-004	1.2000e-003	0.0000	7.4199	7.4199	6.0000e-005	0.0000	7.4213
Worker	0.0488	0.0158	0.1585	2.3000e-004	0.0179	1.8000e-004	0.0181	4.7600e-003	1.6000e-004	4.9200e-003	0.0000	17.4191	17.4191	1.1600e-003	0.0000	17.4435
Total	**0.0595**	**0.0531**	**0.2114**	**3.1000e-004**	**0.0200**	**8.1000e-004**	**0.0209**	**5.3800e-003**	**7.4000e-004**	**6.1200e-003**	**0.0000**	**24.8390**	**24.8390**	**1.2200e-003**	**0.0000**	**24.8648**

3.5 Paving - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0176	0.1828	0.1141	1.7000e-004		0.0110	0.0110		0.0102	0.0102	0.0000	15.6868	15.6868	4.5600e-003	0.0000	15.7827
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0176**	**0.1828**	**0.1141**	**1.7000e-004**		**0.0110**	**0.0110**		**0.0102**	**0.0102**	**0.0000**	**15.6868**	**15.6868**	**4.5600e-003**	**0.0000**	**15.7827**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8400e-003	1.2400e-003	0.0125	2.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.3704	1.3704	9.0000e-005	0.0000	1.3723
Total	**3.8400e-003**	**1.2400e-003**	**0.0125**	**2.0000e-005**	**1.4100e-003**	**1.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3704**	**1.3704**	**9.0000e-005**	**0.0000**	**1.3723**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0176	0.1828	0.1141	1.7000e-004		0.0110	0.0110		0.0102	0.0102	0.0000	15.6868	15.6868	4.5600e-003	0.0000	15.7826
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0176**	**0.1828**	**0.1141**	**1.7000e-004**		**0.0110**	**0.0110**		**0.0102**	**0.0102**	**0.0000**	**15.6868**	**15.6868**	**4.5600e-003**	**0.0000**	**15.7826**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8400e-003	1.2400e-003	0.0125	2.0000e-005	1.4100e-003	1.0000e-005	1.4200e-003	3.7000e-004	1.0000e-005	3.9000e-004	0.0000	1.3704	1.3704	9.0000e-005	0.0000	1.3723
Total	**3.8400e-003**	**1.2400e-003**	**0.0125**	**2.0000e-005**	**1.4100e-003**	**1.0000e-005**	**1.4200e-003**	**3.7000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.3704**	**1.3704**	**9.0000e-005**	**0.0000**	**1.3723**

3.6 Architectural Coating - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9085					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.9146**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7600e-003	1.8600e-003	0.0187	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.0556	2.0556	1.4000e-004	0.0000	2.0585
Total	**5.7600e-003**	**1.8600e-003**	**0.0187**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.0556**	**2.0556**	**1.4000e-004**	**0.0000**	**2.0585**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.9085					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.1000e-003	0.0386	0.0285	4.0000e-005		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	3.8299	3.8299	5.0000e-004	0.0000	3.8404
Total	**1.9146**	**0.0386**	**0.0285**	**4.0000e-005**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**3.8299**	**3.8299**	**5.0000e-004**	**0.0000**	**3.8404**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.7600e-003	1.8600e-003	0.0187	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.0556	2.0556	1.4000e-004	0.0000	2.0585
Total	**5.7600e-003**	**1.8600e-003**	**0.0187**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.0556**	**2.0556**	**1.4000e-004**	**0.0000**	**2.0585**

Area S - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	73.00	Dwelling Unit	40.50	131,400.00	209

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage = 40.5

Construction Phase -

Grading - Area S = 40.5 acres

Table Name	Column Name	Default Value	New Value
tblGrading	AcresOfGrading	187.50	40.50
tblLandUse	LotAcreage	23.70	40.50
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6164	5.6217	3.8529	4.6600e-003	0.5397	0.3119	0.8516	0.2812	0.2894	0.5706	0.0000	438.1779	438.1779	0.1172	0.0000	440.6394
Year Two	0.5830	4.0576	2.8448	4.0800e-003	0.0332	0.2785	0.3116	8.9700e-003	0.2618	0.2708	0.0000	367.1627	367.1627	0.0818	0.0000	368.8808
Year Three	0.5390	3.8409	2.7705	4.0800e-003	0.0332	0.2586	0.2918	8.9800e-003	0.2430	0.2519	0.0000	363.5357	363.5357	0.0801	0.0000	365.2175
Year Four	2.3351	2.1453	1.6316	2.5000e-003	0.0185	0.1365	0.1551	5.0000e-003	0.1279	0.1329	0.0000	221.7023	221.7023	0.0521	0.0000	222.7954
Total	**4.0735**	**15.6655**	**11.0998**	**0.0153**	**0.6246**	**0.9855**	**1.6101**	**0.3041**	**0.9221**	**1.2262**	**0.0000**	**1,390.5786**	**1,390.5786**	**0.3312**	**0.0000**	**1,397.5331**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.6164	5.6217	3.8529	4.6600e-003	0.5397	0.3119	0.8516	0.2812	0.2894	0.5706	0.0000	438.1774	438.1774	0.1172	0.0000	440.6389
Year Two	0.5830	4.0576	2.8448	4.0800e-003	0.0332	0.2785	0.3116	8.9700e-003	0.2618	0.2708	0.0000	367.1623	367.1623	0.0818	0.0000	368.8805
Year Three	0.5390	3.8409	2.7705	4.0800e-003	0.0332	0.2586	0.2918	8.9800e-003	0.2430	0.2519	0.0000	363.5353	363.5353	0.0801	0.0000	365.2171
Year Four	2.3351	2.1453	1.6316	2.5000e-003	0.0185	0.1365	0.1551	5.0000e-003	0.1279	0.1329	0.0000	221.7021	221.7021	0.0521	0.0000	222.7952
Total	**4.0735**	**15.6655**	**11.0998**	**0.0153**	**0.6246**	**0.9855**	**1.6101**	**0.3041**	**0.9221**	**1.2262**	**0.0000**	**1,390.5771**	**1,390.5771**	**0.3312**	**0.0000**	**1,397.5316**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/12/2014	4/22/2014	5	30	
2	Grading	Grading	4/23/2014	8/5/2014	5	75	
3	Building Construction	Building Construction	8/6/2014	6/6/2017	5	740	
4	Paving	Paving	6/7/2017	8/22/2017	5	55	
5	Architectural Coating	Architectural Coating	8/23/2017	11/7/2017	5	55	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 40.5

Acres of Paving: 0

Residential Indoor: 266,085; Residential Outdoor: 88,695; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating –

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	26.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0794	0.8643	0.6444	5.9000e-004		0.0471	0.0471		0.0433	0.0433	0.0000	56.5524	56.5524	0.0167	0.0000	56.9034
Total	**0.0794**	**0.8643**	**0.6444**	**5.9000e-004**	**0.2710**	**0.0471**	**0.3181**	**0.1490**	**0.0433**	**0.1923**	**0.0000**	**56.5524**	**56.5524**	**0.0167**	**0.0000**	**56.9034**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5800e-003	2.1600e-003	0.0220	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.1322	2.1322	1.6000e-004	0.0000	2.1355
Total	**6.5800e-003**	**2.1600e-003**	**0.0220**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.1322**	**2.1322**	**1.6000e-004**	**0.0000**	**2.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2710	0.0000	0.2710	0.1490	0.0000	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0794	0.8643	0.6444	5.9000e-004		0.0471	0.0471		0.0433	0.0433	0.0000	56.5524	56.5524	0.0167	0.0000	56.9033
Total	**0.0794**	**0.8643**	**0.6444**	**5.9000e-004**	**0.2710**	**0.0471**	**0.3181**	**0.1490**	**0.0433**	**0.1923**	**0.0000**	**56.5524**	**56.5524**	**0.0167**	**0.0000**	**56.9033**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.5800e-003	2.1600e-003	0.0220	3.0000e-005	2.1100e-003	2.0000e-005	2.1300e-003	5.6000e-004	2.0000e-005	5.8000e-004	0.0000	2.1322	2.1322	1.6000e-004	0.0000	2.1355
Total	**6.5800e-003**	**2.1600e-003**	**0.0220**	**3.0000e-005**	**2.1100e-003**	**2.0000e-005**	**2.1300e-003**	**5.6000e-004**	**2.0000e-005**	**5.8000e-004**	**0.0000**	**2.1322**	**2.1322**	**1.6000e-004**	**0.0000**	**2.1355**

3.3 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2473	0.0000	0.2473	0.1265	0.0000	0.1265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2568	3.0270	1.9344	2.3200e-003		0.1455	0.1455		0.1338	0.1338	0.0000	222.9917	222.9917	0.0659	0.0000	224.3755
Total	**0.2568**	**3.0270**	**1.9344**	**2.3200e-003**	**0.2473**	**0.1455**	**0.3928**	**0.1265**	**0.1338**	**0.2603**	**0.0000**	**222.9917**	**222.9917**	**0.0659**	**0.0000**	**224.3755**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0183	6.0000e-003	0.0611	7.0000e-005	5.8600e-003	7.0000e-005	5.9300e-003	1.5600e-003	6.0000e-005	1.6200e-003	0.0000	5.9229	5.9229	4.3000e-004	0.0000	5.9320
Total	**0.0183**	**6.0000e-003**	**0.0611**	**7.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9300e-003**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**0.0000**	**5.9229**	**5.9229**	**4.3000e-004**	**0.0000**	**5.9320**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2473	0.0000	0.2473	0.1265	0.0000	0.1265	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2568	3.0270	1.9344	2.3200e-003		0.1455	0.1455		0.1338	0.1338	0.0000	222.9914	222.9914	0.0659	0.0000	224.3753
Total	**0.2568**	**3.0270**	**1.9344**	**2.3200e-003**	**0.2473**	**0.1455**	**0.3928**	**0.1265**	**0.1338**	**0.2603**	**0.0000**	**222.9914**	**222.9914**	**0.0659**	**0.0000**	**224.3753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0183	6.0000e-003	0.0611	7.0000e-005	5.8600e-003	7.0000e-005	5.9300e-003	1.5600e-003	6.0000e-005	1.6200e-003	0.0000	5.9229	5.9229	4.3000e-004	0.0000	5.9320
Total	**0.0183**	**6.0000e-003**	**0.0611**	**7.0000e-005**	**5.8600e-003**	**7.0000e-005**	**5.9300e-003**	**1.5600e-003**	**6.0000e-005**	**1.6200e-003**	**0.0000**	**5.9229**	**5.9229**	**4.3000e-004**	**0.0000**	**5.9320**

3.4 Building Construction - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2050	1.6565	1.0033	1.4200e-003		0.1181	0.1181		0.1112	0.1112	0.0000	130.2603	130.2603	0.0331	0.0000	130.9559
Total	**0.2050**	**1.6565**	**1.0033**	**1.4200e-003**		**0.1181**	**0.1181**		**0.1112**	**0.1112**	**0.0000**	**130.2603**	**130.2603**	**0.0331**	**0.0000**	**130.9559**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0169	0.0547	0.0756	1.0000e-004	2.7100e-003	1.0400e-003	3.7500e-003	7.8000e-004	9.6000e-004	1.7300e-003	0.0000	9.4361	9.4361	9.0000e-005	0.0000	9.4381
Worker	0.0336	0.0110	0.1122	1.4000e-004	0.0108	1.2000e-004	0.0109	2.8700e-003	1.1000e-004	2.9800e-003	0.0000	10.8822	10.8822	8.0000e-004	0.0000	10.8990
Total	**0.0504**	**0.0657**	**0.1878**	**2.4000e-004**	**0.0135**	**1.1600e-003**	**0.0146**	**3.6500e-003**	**1.0700e-003**	**4.7100e-003**	**0.0000**	**20.3184**	**20.3184**	**8.9000e-004**	**0.0000**	**20.3371**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2050	1.6564	1.0033	1.4200e-003		0.1181	0.1181		0.1112	0.1112	0.0000	130.2602	130.2602	0.0331	0.0000	130.9557
Total	**0.2050**	**1.6564**	**1.0033**	**1.4200e-003**		**0.1181**	**0.1181**		**0.1112**	**0.1112**	**0.0000**	**130.2602**	**130.2602**	**0.0331**	**0.0000**	**130.9557**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0169	0.0547	0.0756	1.0000e-004	2.7100e-003	1.0400e-003	3.7500e-003	7.8000e-004	9.6000e-004	1.7300e-003	0.0000	9.4361	9.4361	9.0000e-005	0.0000	9.4381
Worker	0.0336	0.0110	0.1122	1.4000e-004	0.0108	1.2000e-004	0.0109	2.8700e-003	1.1000e-004	2.9800e-003	0.0000	10.8822	10.8822	8.0000e-004	0.0000	10.8990
Total	**0.0504**	**0.0657**	**0.1878**	**2.4000e-004**	**0.0135**	**1.1600e-003**	**0.0146**	**3.6500e-003**	**1.0700e-003**	**4.7100e-003**	**0.0000**	**20.3184**	**20.3184**	**8.9000e-004**	**0.0000**	**20.3371**

3.4 Building Construction - Year Two

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4126	318.4126	0.0799	0.0000	320.0903
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4126**	**318.4126**	**0.0799**	**0.0000**	**320.0903**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0331	0.1153	0.1636	2.5000e-004	6.6700e-003	1.9400e-003	8.6100e-003	1.9200e-003	1.7900e-003	3.7000e-003	0.0000	22.9184	22.9184	2.0000e-004	0.0000	22.9226
Worker	0.0724	0.0234	0.2350	3.3000e-004	0.0265	2.7000e-004	0.0268	7.0600e-003	2.4000e-004	7.3000e-003	0.0000	25.8317	25.8317	1.7300e-003	0.0000	25.8679
Total	**0.1055**	**0.1387**	**0.3986**	**5.8000e-004**	**0.0332**	**2.2100e-003**	**0.0354**	**8.9800e-003**	**2.0300e-003**	**0.0110**	**0.0000**	**48.7501**	**48.7501**	**1.9300e-003**	**0.0000**	**48.7905**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4775	3.9189	2.4462	3.5000e-003		0.2762	0.2762		0.2598	0.2598	0.0000	318.4122	318.4122	0.0799	0.0000	320.0899
Total	**0.4775**	**3.9189**	**2.4462**	**3.5000e-003**		**0.2762**	**0.2762**		**0.2598**	**0.2598**	**0.0000**	**318.4122**	**318.4122**	**0.0799**	**0.0000**	**320.0899**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0331	0.1153	0.1636	2.5000e-004	6.6700e-003	1.9400e-003	8.6100e-003	1.9200e-003	1.7900e-003	3.7000e-003	0.0000	22.9184	22.9184	2.0000e-004	0.0000	22.9226
Worker	0.0724	0.0234	0.2350	3.3000e-004	0.0265	2.7000e-004	0.0268	7.0600e-003	2.4000e-004	7.3000e-003	0.0000	25.8317	25.8317	1.7300e-003	0.0000	25.8679
Total	**0.1055**	**0.1387**	**0.3986**	**5.8000e-004**	**0.0332**	**2.2100e-003**	**0.0354**	**8.9800e-003**	**2.0300e-003**	**0.0110**	**0.0000**	**48.7501**	**48.7501**	**1.9300e-003**	**0.0000**	**48.7905**

3.4 Building Construction - Year Three

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0104	316.0104	0.0784	0.0000	317.6563
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0104**	**316.0104**	**0.0784**	**0.0000**	**317.6563**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0306	0.1005	0.1538	2.5000e-004	6.6700e-003	1.6300e-003	8.3000e-003	1.9200e-003	1.5000e-003	3.4200e-003	0.0000	22.6473	22.6473	1.8000e-004	0.0000	22.6511
Worker	0.0639	0.0203	0.2016	3.3000e-004	0.0265	2.5000e-004	0.0268	7.0600e-003	2.2000e-004	7.2800e-003	0.0000	24.8780	24.8780	1.5300e-003	0.0000	24.9101
Total	**0.0945**	**0.1208**	**0.3554**	**5.8000e-004**	**0.0332**	**1.8800e-003**	**0.0351**	**8.9800e-003**	**1.7200e-003**	**0.0107**	**0.0000**	**47.5253**	**47.5253**	**1.7100e-003**	**0.0000**	**47.5612**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4445	3.7201	2.4151	3.5000e-003		0.2567	0.2567		0.2412	0.2412	0.0000	316.0101	316.0101	0.0784	0.0000	317.6560
Total	**0.4445**	**3.7201**	**2.4151**	**3.5000e-003**		**0.2567**	**0.2567**		**0.2412**	**0.2412**	**0.0000**	**316.0101**	**316.0101**	**0.0784**	**0.0000**	**317.6560**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0306	0.1005	0.1538	2.5000e-004	6.6700e-003	1.6300e-003	8.3000e-003	1.9200e-003	1.5000e-003	3.4200e-003	0.0000	22.6473	22.6473	1.8000e-004	0.0000	22.6511
Worker	0.0639	0.0203	0.2016	3.3000e-004	0.0265	2.5000e-004	0.0268	7.0600e-003	2.2000e-004	7.2800e-003	0.0000	24.8780	24.8780	1.5300e-003	0.0000	24.9101
Total	**0.0945**	**0.1208**	**0.3554**	**5.8000e-004**	**0.0332**	**1.8800e-003**	**0.0351**	**8.9800e-003**	**1.7200e-003**	**0.0107**	**0.0000**	**47.5253**	**47.5253**	**1.7100e-003**	**0.0000**	**47.5612**

3.4 Building Construction - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1737	1.4787	1.0152	1.5000e-003		0.0998	0.0998		0.0937	0.0937	0.0000	134.1083	134.1083	0.0330	0.0000	134.8014
Total	**0.1737**	**1.4787**	**1.0152**	**1.5000e-003**		**0.0998**	**0.0998**		**0.0937**	**0.0937**	**0.0000**	**134.1083**	**134.1083**	**0.0330**	**0.0000**	**134.8014**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0115	0.0381	0.0603	1.1000e-004	2.8600e-003	5.9000e-004	3.4500e-003	8.2000e-004	5.4000e-004	1.3600e-003	0.0000	9.5497	9.5497	7.0000e-005	0.0000	9.5512
Worker	0.0238	7.4700e-003	0.0724	1.4000e-004	0.0114	1.0000e-004	0.0115	3.0300e-003	9.0000e-005	3.1200e-003	0.0000	10.2457	10.2457	5.8000e-004	0.0000	10.2579
Total	**0.0353**	**0.0456**	**0.1327**	**2.5000e-004**	**0.0142**	**6.9000e-004**	**0.0149**	**3.8500e-003**	**6.3000e-004**	**4.4800e-003**	**0.0000**	**19.7954**	**19.7954**	**6.5000e-004**	**0.0000**	**19.8091**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1737	1.4787	1.0152	1.5000e-003		0.0998	0.0998		0.0937	0.0937	0.0000	134.1081	134.1081	0.0330	0.0000	134.8013
Total	**0.1737**	**1.4787**	**1.0152**	**1.5000e-003**		**0.0998**	**0.0998**		**0.0937**	**0.0937**	**0.0000**	**134.1081**	**134.1081**	**0.0330**	**0.0000**	**134.8013**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0115	0.0381	0.0603	1.1000e-004	2.8600e-003	5.9000e-004	3.4500e-003	8.2000e-004	5.4000e-004	1.3600e-003	0.0000	9.5497	9.5497	7.0000e-005	0.0000	9.5512
Worker	0.0238	7.4700e-003	0.0724	1.4000e-004	0.0114	1.0000e-004	0.0115	3.0300e-003	9.0000e-005	3.1200e-003	0.0000	10.2457	10.2457	5.8000e-004	0.0000	10.2579
Total	**0.0353**	**0.0456**	**0.1327**	**2.5000e-004**	**0.0142**	**6.9000e-004**	**0.0149**	**3.8500e-003**	**6.3000e-004**	**4.4800e-003**	**0.0000**	**19.7954**	**19.7954**	**6.5000e-004**	**0.0000**	**19.8091**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0525	0.5582	0.4050	6.1000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	56.9069	56.9069	0.0174	0.0000	57.2731
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.5582**	**0.4050**	**6.1000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**56.9069**	**56.9069**	**0.0174**	**0.0000**	**57.2731**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7400e-003	2.1200e-003	0.0205	4.0000e-005	3.2200e-003	3.0000e-005	3.2500e-003	8.6000e-004	3.0000e-005	8.8000e-004	0.0000	2.9027	2.9027	1.6000e-004	0.0000	2.9062
Total	**6.7400e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**8.6000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**2.9027**	**2.9027**	**1.6000e-004**	**0.0000**	**2.9062**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0525	0.5582	0.4050	6.1000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	56.9068	56.9068	0.0174	0.0000	57.2730
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0525**	**0.5582**	**0.4050**	**6.1000e-004**		**0.0313**	**0.0313**		**0.0288**	**0.0288**	**0.0000**	**56.9068**	**56.9068**	**0.0174**	**0.0000**	**57.2730**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7400e-003	2.1200e-003	0.0205	4.0000e-005	3.2200e-003	3.0000e-005	3.2500e-003	8.6000e-004	3.0000e-005	8.8000e-004	0.0000	2.9027	2.9027	1.6000e-004	0.0000	2.9062
Total	**6.7400e-003**	**2.1200e-003**	**0.0205**	**4.0000e-005**	**3.2200e-003**	**3.0000e-005**	**3.2500e-003**	**8.6000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**2.9027**	**2.9027**	**1.6000e-004**	**0.0000**	**2.9062**

3.6 Architectural Coating - Year Four

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0555					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1400e-003	0.0601	0.0514	8.0000e-005		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	7.0215	7.0215	7.4000e-004	0.0000	7.0370
Total	**2.0647**	**0.0601**	**0.0514**	**8.0000e-005**		**4.7700e-003**	**4.7700e-003**		**4.7700e-003**	**4.7700e-003**	**0.0000**	**7.0215**	**7.0215**	**7.4000e-004**	**0.0000**	**7.0370**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2500e-003	7.1000e-004	6.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9676	0.9676	5.0000e-005	0.0000	0.9687
Total	**2.2500e-003**	**7.1000e-004**	**6.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9676**	**0.9676**	**5.0000e-005**	**0.0000**	**0.9687**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.0555					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.1400e-003	0.0601	0.0514	8.0000e-005		4.7700e-003	4.7700e-003		4.7700e-003	4.7700e-003	0.0000	7.0214	7.0214	7.4000e-004	0.0000	7.0370
Total	**2.0647**	**0.0601**	**0.0514**	**8.0000e-005**		**4.7700e-003**	**4.7700e-003**		**4.7700e-003**	**4.7700e-003**	**0.0000**	**7.0214**	**7.0214**	**7.4000e-004**	**0.0000**	**7.0370**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2500e-003	7.1000e-004	6.8400e-003	1.0000e-005	1.0700e-003	1.0000e-005	1.0800e-003	2.9000e-004	1.0000e-005	2.9000e-004	0.0000	0.9676	0.9676	5.0000e-005	0.0000	0.9687
Total	**2.2500e-003**	**7.1000e-004**	**6.8400e-003**	**1.0000e-005**	**1.0700e-003**	**1.0000e-005**	**1.0800e-003**	**2.9000e-004**	**1.0000e-005**	**2.9000e-004**	**0.0000**	**0.9676**	**0.9676**	**5.0000e-005**	**0.0000**	**0.9687**

Off-Site Road Extension - Project Site to Shasta Dam Blvd - Phase 3

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Offsite Road Extension	0.80	Acre	0.80	34,848.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2015
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Road Extension = 20 days

Grading -

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	5.00	10.00
tblProjectCharacteristics	OperationalYear	2014	2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0181	0.1229	0.0924	1.3000e-004	4.8600e-003	8.3900e-003	0.0133	2.3600e-003	7.9100e-003	0.0103	0.0000	11.5860	11.5860	2.5700e-003	0.0000	11.6400
Total	**0.0181**	**0.1229**	**0.0924**	**1.3000e-004**	**4.8600e-003**	**8.3900e-003**	**0.0133**	**2.3600e-003**	**7.9100e-003**	**0.0103**	**0.0000**	**11.5860**	**11.5860**	**2.5700e-003**	**0.0000**	**11.6400**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
Year One	0.0181	0.1229	0.0924	1.3000e-004	4.8600e-003	8.3900e-003	0.0133	2.3600e-003	7.9100e-003	0.0103	0.0000	11.5860	11.5860	2.5700e-003	0.0000	11.6399
Total	**0.0181**	**0.1229**	**0.0924**	**1.3000e-004**	**4.8600e-003**	**8.3900e-003**	**0.0133**	**2.3600e-003**	**7.9100e-003**	**0.0103**	**0.0000**	**11.5860**	**11.5860**	**2.5700e-003**	**0.0000**	**11.6399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/16/2014	1/29/2014	5	10	
2	Paving	Paving	1/30/2014	2/12/2014	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Pavers	1	7.00	125	0.42
Paving	Rollers	1	7.00	80	0.38
Grading	Rubber Tired Dozers	1	1.00	255	0.40
Grading	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Grading - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	2.0700e-003	0.0000	2.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4600e-003	0.0625	0.0443	6.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	5.4760	5.4760	1.1400e-003	0.0000	5.4999
Total	**7.4600e-003**	**0.0625**	**0.0443**	**6.0000e-005**	**3.7600e-003**	**4.6500e-003**	**8.4100e-003**	**2.0700e-003**	**4.4500e-003**	**6.5200e-003**	**0.0000**	**5.4760**	**5.4760**	**1.1400e-003**	**0.0000**	**5.4999**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	4.0000e-004	4.0700e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3949	0.3949	3.0000e-005	0.0000	0.3955
Total	**1.2200e-003**	**4.0000e-004**	**4.0700e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3949**	**0.3949**	**3.0000e-005**	**0.0000**	**0.3955**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.7600e-003	0.0000	3.7600e-003	2.0700e-003	0.0000	2.0700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.4600e-003	0.0625	0.0443	6.0000e-005		4.6500e-003	4.6500e-003		4.4500e-003	4.4500e-003	0.0000	5.4760	5.4760	1.1400e-003	0.0000	5.4999
Total	**7.4600e-003**	**0.0625**	**0.0443**	**6.0000e-005**	**3.7600e-003**	**4.6500e-003**	**8.4100e-003**	**2.0700e-003**	**4.4500e-003**	**6.5200e-003**	**0.0000**	**5.4760**	**5.4760**	**1.1400e-003**	**0.0000**	**5.4999**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	4.0000e-004	4.0700e-003	0.0000	3.9000e-004	0.0000	4.0000e-004	1.0000e-004	0.0000	1.1000e-004	0.0000	0.3949	0.3949	3.0000e-005	0.0000	0.3955
Total	**1.2200e-003**	**4.0000e-004**	**4.0700e-003**	**0.0000**	**3.9000e-004**	**0.0000**	**4.0000e-004**	**1.0000e-004**	**0.0000**	**1.1000e-004**	**0.0000**	**0.3949**	**0.3949**	**3.0000e-005**	**0.0000**	**0.3955**

3.3 Paving - Year One

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1700e-003	0.0593	0.0368	6.0000e-005		3.7300e-003	3.7300e-003		3.4500e-003	3.4500e-003	0.0000	5.0044	5.0044	1.3500e-003	0.0000	5.0327
Paving	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2200e-003**	**0.0593**	**0.0368**	**6.0000e-005**		**3.7300e-003**	**3.7300e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**5.0044**	**5.0044**	**1.3500e-003**	**0.0000**	**5.0327**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.1700e-003	0.0593	0.0368	6.0000e-005		3.7300e-003	3.7300e-003		3.4500e-003	3.4500e-003	0.0000	5.0044	5.0044	1.3500e-003	0.0000	5.0327
Paving	1.0500e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.2200e-003**	**0.0593**	**0.0368**	**6.0000e-005**		**3.7300e-003**	**3.7300e-003**		**3.4500e-003**	**3.4500e-003**	**0.0000**	**5.0044**	**5.0044**	**1.3500e-003**	**0.0000**	**5.0327**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1900e-003	7.2000e-004	7.3300e-003	1.0000e-005	7.0000e-004	1.0000e-005	7.1000e-004	1.9000e-004	1.0000e-005	1.9000e-004	0.0000	0.7107	0.7107	5.0000e-005	0.0000	0.7118
Total	**2.1900e-003**	**7.2000e-004**	**7.3300e-003**	**1.0000e-005**	**7.0000e-004**	**1.0000e-005**	**7.1000e-004**	**1.9000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.7107**	**0.7107**	**5.0000e-005**	**0.0000**	**0.7118**

Operational Emissions

Metric Tons per Year

Mountain Gate at Shasta Area Plan - BUSINESS AS USUAL (BAU) Buildout

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fire Station	43.56	1000sqft	2.00	43,560.00	0
City Park	27.90	Acre	27.90	1,215,324.00	0
Apartments Low Rise	305.00	Dwelling Unit	16.40	305,000.00	872
Condo/Townhouse	705.00	Dwelling Unit	109.00	705,000.00	2016
Single Family Housing	654.00	Dwelling Unit	161.00	1,177,200.00	1870
Strip Mall	195.59	1000sqft	14.20	195,590.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2005
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage per Area Plan. Excluded are 221 acres of open space and 36.2 acres of right of way

Vehicle Trips - Trip generation per 2012 Omni-Means Technical Memorandum

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.00	2.00
tblLandUse	LotAcreage	19.06	16.40
tblLandUse	LotAcreage	44.06	109.00
tblLandUse	LotAcreage	212.34	161.00
tblLandUse	LotAcreage	4.49	14.20
tblProjectCharacteristics	OperationalYear	2014	2005
tblVehicleTrips	WD_TR	27.92	1.00
tblVehicleTrips	WD_TR	44.32	32.82

2.0 Emissions Summary

2.1 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	124.3594	1.6114	142.9540	0.0509		18.1311	18.1311		18.1305	18.1305	1,718.8416	741.0442	2,459.8858	1.6186	0.1352	2,535.7873
Energy	0.2184	1.8748	0.8542	0.0119		0.1509	0.1509		0.1509	0.1509	0.0000	5,565.4319	5,565.4319	0.1953	0.0715	5,591.6909
Mobile	118.9499	220.7968	530.1719	1.5762	15.6773	7.1739	22.8513	4.7035	7.1739	11.8774	0.0000	31,895.7356	31,895.7356	3.3743	0.0000	31,966.5954
Waste						0.0000	0.0000		0.0000	0.0000	281.7839	0.0000	281.7839	16.6530	0.0000	631.4960
Water						0.0000	0.0000		0.0000	0.0000	41.7372	324.9691	366.7063	4.3015	0.1043	489.3589
Total	**243.5278**	**224.2829**	**673.9801**	**1.6390**	**15.6773**	**25.4559**	**41.1332**	**4.7035**	**25.4554**	**30.1588**	**2,042.3628**	**38,527.1808**	**40,569.5435**	**26.1426**	**0.3109**	**41,214.9284**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	118.9499	220.7968	530.1719	1.5762	15.6773	7.1739	22.8513	4.7035	7.1739	11.8774	0.0000	31,895.7356	31,895.7356	3.3743	0.0000	31,966.5954

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,009.95	2,183.80	1851.35	5,729,247	5,729,247
City Park	44.36	44.36	44.36	94,704	94,704
Condo/Townhouse	4,645.95	5,047.80	4279.35	13,243,014	13,243,014
Fire Station	43.56	0.00	0.00	59,479	59,479
Single Family Housing	6,258.78	6,592.32	5735.58	17,743,830	17,743,830
Strip Mall	6,419.26	8,222.60	3995.90	9,749,471	9,749,471
Total	19,421.86	22,090.88	15,906.54	46,619,745	46,619,745

3.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Fire Station	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.339777	0.175545	0.184982	0.094637	0.033773	0.011968	0.013263	0.125414	0.000747	0.000922	0.011452	0.001930	0.005590

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Unmitigated	0.2184	1.8748	0.8542	0.0119		0.1509	0.1509		0.1509	0.1509	0.0000	2,161.6947	2,161.6947	0.0414	0.0396	2,174.8504
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,403.7372	3,403.7372	0.1539	0.0318	3,416.8405

4.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.27378e+007	0.0687	0.5869	0.2498	3.7500e-003		0.0475	0.0475		0.0475	0.0475	0.0000	679.7382	679.7382	0.0130	0.0125	683.8750
Fire Station	597643	3.2200e-003	0.0293	0.0246	1.8000e-004		2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003	0.0000	31.8925	31.8925	6.1000e-004	5.8000e-004	32.0866
Single Family Housing	2.04954e+007	0.1105	0.9444	0.4019	6.0300e-003		0.0764	0.0764		0.0764	0.0764	0.0000	1,093.7125	1,093.7125	0.0210	0.0201	1,100.3687
Strip Mall	2.18083e+006	0.0118	0.1069	0.0898	6.4000e-004		8.1200e-003	8.1200e-003		8.1200e-003	8.1200e-003	0.0000	116.3773	116.3773	2.2300e-003	2.1300e-003	117.0856
Apartments Low Rise	4.49694e+006	0.0243	0.2072	0.0882	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.9741	239.9741	4.6000e-003	4.4000e-003	241.4345
Total		**0.2184**	**1.8748**	**0.8542**	**0.0119**		**0.1509**	**0.1509**		**0.1509**	**0.1509**	**0.0000**	**2,161.6947**	**2,161.6947**	**0.0414**	**0.0396**	**2,174.8504**

4.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.17179e+006	340.8885	0.0154	3.1900e-003	342.2009
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.28983e+006	957.0481	0.0433	8.9500e-003	960.7325
Fire Station	440827	128.2417	5.8000e-003	1.2000e-003	128.7354
Single Family Housing	5.01207e+006	1,458.0676	0.0659	0.0136	1,463.6807
Strip Mall	1.78574e+006	519.4913	0.0235	4.8600e-003	521.4912
Total		**3,403.7372**	**0.1539**	**0.0318**	**3,416.8406**

5.0 Area Detail

5.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	124.3594	1.6114	142.9540	0.0509		18.1311	18.1311		18.1305	18.1305	1,718.8416	741.0442	2,459.8858	1.6186	0.1352	2,535.7873

5.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.1068					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.2226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	104.4097	1.4166	128.6215	0.0502		18.0705	18.0705		18.0700	18.0700	1,718.8416	720.8571	2,439.6987	1.5862	0.1352	2,514.9210
Landscaping	0.6203	0.1948	14.3325	6.5000e-004		0.0605	0.0605		0.0605	0.0605	0.0000	20.1871	20.1871	0.0323	0.0000	20.8663
Total	**124.3594**	**1.6114**	**142.9540**	**0.0509**		**18.1311**	**18.1311**		**18.1305**	**18.1305**	**1,718.8416**	**741.0442**	**2,459.8858**	**1.6186**	**0.1352**	**2,535.7873**

6.0 Water Detail

6.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	366.7063	4.3015	0.1043	489.3589

6.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	19.872 / 12.528	50.3413	0.6495	0.0157	68.8486
City Park	0 / 33.2423	33.8470	1.5300e-003	3.2000e-004	33.9773
Condo/Townhouse	45.9336 / 28.9581	116.3626	1.5014	0.0363	159.1419
Fire Station	8.65362 / 5.30383	21.7676	0.2828	6.8400e-003	29.8263
Single Family Housing	42.6107 / 26.8633	107.9448	1.3927	0.0337	147.6296
Strip Mall	14.4878 / 8.87965	36.4431	0.4735	0.0114	49.9351
Total		**366.7063**	**4.3015**	**0.1043**	**489.3589**

7.0 Waste Detail

7.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	281.7839	16.6530	0.0000	631.4960

7.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	140.3	28.4796	1.6831	0.0000	63.8247
City Park	2.4	0.4872	0.0288	0.0000	1.0918
Condo/Townhouse	324.3	65.8300	3.8904	0.0000	147.5292
Fire Station	248.29	50.4006	2.9786	0.0000	112.9511
Single Family Housing	467.5	94.8983	5.6083	0.0000	212.6732
Strip Mall	205.37	41.6883	2.4637	0.0000	93.4261
Total		**281.7839**	**16.6530**	**0.0000**	**631.4960**

Mountain Gate at Shasta Area Plan - UNMITIGATED Buildout

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fire Station	43.56	1000sqft	2.00	43,560.00	0
City Park	27.90	Acre	27.90	1,215,324.00	0
Apartments Low Rise	305.00	Dwelling Unit	16.40	305,000.00	872
Condo/Townhouse	705.00	Dwelling Unit	109.00	705,000.00	2016
Single Family Housing	654.00	Dwelling Unit	161.00	1,177,200.00	1870
Strip Mall	195.59	1000sqft	14.20	195,590.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2030
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage per Area Plan. Excluded are 221 acres of open space and 36.2 acres of right of way

Vehicle Trips - Trip generation per 2012 Omni-Means Technical Memorandum

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.00	2.00
tblLandUse	LotAcreage	19.06	16.40
tblLandUse	LotAcreage	44.06	109.00
tblLandUse	LotAcreage	212.34	161.00
tblLandUse	LotAcreage	4.49	14.20
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	WD_TR	27.92	1.00
tblVehicleTrips	WD_TR	44.32	32.82

2.0 Emissions Summary

2.1 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	124.1079	1.5586	140.9467	0.0509		18.1391	18.1391		18.1385	18.1385	1,718.8416	741.0442	2,459.8858	1.6055	0.1352	2,535.5121
Energy	0.2184	1.8748	0.8542	0.0119		0.1509	0.1509		0.1509	0.1509	0.0000	5,565.4319	5,565.4319	0.1953	0.0715	5,591.6909
Mobile	30.7097	32.8449	125.0956	0.3363	17.4681	0.6810	18.1491	4.7152	0.6274	5.3427	0.0000	24,130.8123	24,130.8123	0.5348	0.0000	24,142.0433
Waste						0.0000	0.0000		0.0000	0.0000	281.7839	0.0000	281.7839	16.6530	0.0000	631.4960
Water						0.0000	0.0000		0.0000	0.0000	41.7372	324.9691	366.7063	4.3015	0.1043	489.3589
Total	**155.0360**	**36.2783**	**266.8965**	**0.3991**	**17.4681**	**18.9710**	**36.4391**	**4.7152**	**18.9169**	**23.6321**	**2,042.3628**	**30,762.2575**	**32,804.6202**	**23.2901**	**0.3109**	**33,390.1012**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	30.7097	32.8449	125.0956	0.3363	17.4681	0.6810	18.1491	4.7152	0.6274	5.3427	0.0000	24,130.8123	24,130.8123	0.5348	0.0000	24,142.0433

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,009.95	2,183.80	1851.35	5,729,247	5,729,247
City Park	44.36	44.36	44.36	94,704	94,704
Condo/Townhouse	4,645.95	5,047.80	4279.35	13,243,014	13,243,014
Fire Station	43.56	0.00	0.00	59,479	59,479
Single Family Housing	6,258.78	6,592.32	5735.58	17,743,830	17,743,830
Strip Mall	6,419.26	8,222.60	3995.90	9,749,471	9,749,471
Total	19,421.86	22,090.88	15,906.54	46,619,745	46,619,745

3.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Fire Station	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.365560	0.038003	0.191238	0.146013	0.085878	0.010377	0.019239	0.125563	0.001682	0.000832	0.009663	0.001239	0.004712

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Unmitigated	0.2184	1.8748	0.8542	0.0119		0.1509	0.1509		0.1509	0.1509	0.0000	2,161.6947	2,161.6947	0.0414	0.0396	2,174.8504
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,403.7372	3,403.7372	0.1539	0.0318	3,416.8405

4.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	1.27378e+007	0.0687	0.5869	0.2498	3.7500e-003		0.0475	0.0475		0.0475	0.0475	0.0000	679.7382	679.7382	0.0130	0.0125	683.8750
Fire Station	597643	3.2200e-003	0.0293	0.0246	1.8000e-004		2.2300e-003	2.2300e-003		2.2300e-003	2.2300e-003	0.0000	31.8925	31.8925	6.1000e-004	5.8000e-004	32.0866
Single Family Housing	2.04954e+007	0.1105	0.9444	0.4019	6.0300e-003		0.0764	0.0764		0.0764	0.0764	0.0000	1,093.7125	1,093.7125	0.0210	0.0201	1,100.3687
Strip Mall	2.18083e+006	0.0118	0.1069	0.0898	6.4000e-004		8.1200e-003	8.1200e-003		8.1200e-003	8.1200e-003	0.0000	116.3773	116.3773	2.2300e-003	2.1300e-003	117.0856
Apartments Low Rise	4.49694e+006	0.0243	0.2072	0.0882	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	239.9741	239.9741	4.6000e-003	4.4000e-003	241.4345
Total		**0.2184**	**1.8748**	**0.8542**	**0.0119**		**0.1509**	**0.1509**		**0.1509**	**0.1509**	**0.0000**	**2,161.6947**	**2,161.6947**	**0.0414**	**0.0396**	**2,174.8504**

4.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.17179e+006	340.8885	0.0154	3.1900e-003	342.2009
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.28983e+006	957.0481	0.0433	8.9500e-003	960.7325
Fire Station	440827	128.2417	5.8000e-003	1.2000e-003	128.7354
Single Family Housing	5.01207e+006	1,458.0676	0.0659	0.0136	1,463.6807
Strip Mall	1.78574e+006	519.4913	0.0235	4.8600e-003	521.4912
Total		**3,403.7372**	**0.1539**	**0.0318**	**3,416.8406**

5.0 Area Detail

5.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Unmitigated	124.1079	1.5586	140.9467	0.0509		18.1391	18.1391		18.1385	18.1385	1,718.8416	741.0442	2,459.8858	1.6055	0.1352	2,535.5121

5.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.1068					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.2226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	104.4097	1.4166	128.6215	0.0502		18.0705	18.0705		18.0700	18.0700	1,718.8416	720.8571	2,439.6987	1.5862	0.1352	2,514.9210
Landscaping	0.3688	0.1421	12.3252	6.5000e-004		0.0685	0.0685		0.0685	0.0685	0.0000	20.1871	20.1871	0.0192	0.0000	20.5912
Total	**124.1079**	**1.5586**	**140.9467**	**0.0509**		**18.1391**	**18.1391**		**18.1385**	**18.1385**	**1,718.8416**	**741.0442**	**2,459.8858**	**1.6055**	**0.1352**	**2,535.5122**

6.0 Water Detail

6.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Unmitigated	366.7063	4.3015	0.1043	489.3589

6.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	19.872 / 12.528	50.3413	0.6495	0.0157	68.8486
City Park	0 / 33.2423	33.8470	1.5300e-003	3.2000e-004	33.9773
Condo/Townhouse	45.9336 / 28.9581	116.3626	1.5014	0.0363	159.1419
Fire Station	8.65362 / 5.30383	21.7676	0.2828	6.8400e-003	29.8263
Single Family Housing	42.6107 / 26.8633	107.9448	1.3927	0.0337	147.6296
Strip Mall	14.4878 / 8.87965	36.4431	0.4735	0.0114	49.9351
Total		**366.7063**	**4.3015**	**0.1043**	**489.3589**

7.0 Waste Detail

7.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	281.7839	16.6530	0.0000	631.4960

7.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	140.3	28.4796	1.6831	0.0000	63.8247
City Park	2.4	0.4872	0.0288	0.0000	1.0918
Condo/Townhouse	324.3	65.8300	3.8904	0.0000	147.5292
Fire Station	248.29	50.4006	2.9786	0.0000	112.9511
Single Family Housing	467.5	94.8983	5.6083	0.0000	212.6732
Strip Mall	205.37	41.6883	2.4637	0.0000	93.4261
Total		**281.7839**	**16.6530**	**0.0000**	**631.4960**

CalEEMod Version: CalEEMod.2011.1.1

Mountain Gate at Shasta - Vegetation Removal Emissions and Sequestion

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
Area Plan	590	Acre

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**		**Utility Company**	Statewide Average
Climate Zone	3		2.7		
		Precipitation Freq (Days)			
			82		

1.3 User Entered Comments

Land Use Change - Area Plan contains 228 acres of grassland and 355 acres of oak woodland per Section 4.6. Area Plan contains 221 acres of open space predominately within oak woodlands

Sequestration - Tree replacement number based on known number of oak tree removal (617) and City Tree Ordinance replacement requirements.

2.0 Emissions Summary

2.1 Vegetation

Vegetation

	ROG	NOx	CO	SO2	CO2e
Category	tons				MT
New Trees					1,358.63
Vegetation Land Change					-20,572.38
Total					**-19,213.75**

3.0 Vegetation

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons				MT			
Unmitigated					-19,213.74	0.00	0.00	-19,213.74
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

3.1 Vegetation Land Change

Vegetation Type

	Initial/Final	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	Acres	tons				MT			
Grassland	228 / 44.2					-792.18	0.00	0.00	-792.18
Trees	355 / 176.8					-19,780.20	0.00	0.00	-19,780.20
Total						**-20,572.38**	**0.00**	**0.00**	**-20,572.38**

3.1 Net New Trees

Species Class

	Number of Trees	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
		tons				MT			
Mixed Hardwood	1851					1,358.63	0.00	0.00	1,358.63
Total						**1,358.63**	**0.00**	**0.00**	**1,358.63**

Mountain Gate at Shasta Area Plan - MITIGATED Buildout

Shasta County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Fire Station	43.56	1000sqft	2.00	43,560.00	0
City Park	27.90	Acre	27.90	1,215,324.00	0
Apartments Low Rise	305.00	Dwelling Unit	16.40	305,000.00	872
Condo/Townhouse	705.00	Dwelling Unit	109.00	705,000.00	2016
Single Family Housing	654.00	Dwelling Unit	161.00	1,177,200.00	1870
Strip Mall	195.59	1000sqft	14.20	195,590.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.7	**Precipitation Freq (Days)**	82
Climate Zone	3			**Operational Year**	2030
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Acreage per Area Plan. Excluded are 221 acres of open space and 36.2 acres of right of way

Vehicle Trips - Trip generation per 2012 Omni-Means Technical Memorandum

Mobile Land Use Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LotAcreage	1.00	2.00
tblLandUse	LotAcreage	19.06	16.40
tblLandUse	LotAcreage	44.06	109.00
tblLandUse	LotAcreage	212.34	161.00
tblLandUse	LotAcreage	4.49	14.20
tblProjectCharacteristics	OperationalYear	2014	2030
tblVehicleTrips	WD_TR	27.92	1.00
tblVehicleTrips	WD_TR	44.32	32.82

2.0 Emissions Summary

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	19.8174	0.1421	12.3317	6.5000e-004		0.1509	0.1509		0.1500	0.1500	0.0000	1,199.7714	1,199.7714	0.0419	0.0216	1,207.3543
Energy	0.1915	1.6434	0.7486	0.0104		0.1323	0.1323		0.1323	0.1323	0.0000	5,221.0104	5,221.0104	0.1867	0.0659	5,245.3471
Mobile	21.8119	24.7152	107.4920	0.2257	11.4730	0.4613	11.9343	3.0970	0.4250	3.5220	0.0000	16,175.1149	16,175.1149	0.3738	0.0000	16,182.9650
Waste						0.0000	0.0000		0.0000	0.0000	281.7839	0.0000	281.7839	16.6530	0.0000	631.4960
Water						0.0000	0.0000		0.0000	0.0000	33.3898	276.3608	309.7506	3.4413	0.0834	407.8824
Total	**41.8208**	**26.5007**	**120.5723**	**0.2367**	**11.4730**	**0.7445**	**12.2175**	**3.0970**	**0.7073**	**3.8043**	**315.1737**	**22,872.2575**	**23,187.4312**	**20.6967**	**0.1709**	**23,675.0447**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**73.03**	**26.95**	**54.82**	**40.68**	**34.32**	**96.08**	**66.47**	**34.32**	**96.26**	**83.90**	**84.57**	**25.65**	**29.32**	**11.14**	**45.03**	**29.10**

3.0 Operational Detail - Mobile

3.1 Mitigation Measures Mobile

Increase Density

Increase Diversity

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	21.8119	24.7152	107.4920	0.2257	11.4730	0.4613	11.9343	3.0970	0.4250	3.5220	0.0000	16,175.1149	16,175.1149	0.3738	0.0000	16,182.9650

3.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	2,009.95	2,183.80	1851.35	5,729,247	3,762,952
City Park	44.36	44.36	44.36	94,704	62,201
Condo/Townhouse	4,645.95	5,047.80	4279.35	13,243,014	8,697,972
Fire Station	43.56	0.00	0.00	59,479	39,066
Single Family Housing	6,258.78	6,592.32	5735.58	17,743,830	11,654,095
Strip Mall	6,419.26	8,222.60	3995.90	9,749,471	6,403,423
Total	19,421.86	22,090.88	15,906.54	46,619,745	30,619,709

3.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-...	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Low Rise	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Condo/Townhouse	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Fire Station	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Single Family Housing	10.80	7.30	7.50	41.00	21.20	37.80	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.365560	0.038003	0.191238	0.146013	0.085878	0.010377	0.019239	0.125563	0.001682	0.000832	0.009663	0.001239	0.004712

4.0 Energy Detail

Historical Energy Use: N

4.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
NaturalGas Mitigated	0.1915	1.6434	0.7486	0.0104		0.1323	0.1323		0.1323	0.1323	0.0000	1,894.9835	1,894.9835	0.0363	0.0347	1,906.5160
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,326.0269	3,326.0269	0.1504	0.0311	3,338.8311

4.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Condo/Townhouse	1.11392e+007	0.0601	0.5133	0.2184	3.2800e-003		0.0415	0.0415		0.0415	0.0415	0.0000	594.4306	594.4306	0.0114	0.0109	598.0482
Fire Station	509826	2.7500e-003	0.0250	0.0210	1.5000e-004		1.9000e-003	1.9000e-003		1.9000e-003	1.9000e-003	0.0000	27.2063	27.2063	5.2000e-004	5.0000e-004	27.3718
Single Family Housing	1.80102e+007	0.0971	0.8299	0.3531	5.3000e-003		0.0671	0.0671		0.0671	0.0671	0.0000	961.0928	961.0928	0.0184	0.0176	966.9419
Strip Mall	1.91473e+006	0.0103	0.0939	0.0788	5.6000e-004		7.1300e-003	7.1300e-003		7.1300e-003	7.1300e-003	0.0000	102.1772	102.1772	1.9600e-003	1.8700e-003	102.7990
Apartments Low Rise	3.93669e+006	0.0212	0.1814	0.0772	1.1600e-003		0.0147	0.0147		0.0147	0.0147	0.0000	210.0766	210.0766	4.0300e-003	3.8500e-003	211.3551
City Park	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.1915**	**1.6434**	**0.7486**	**0.0105**		**0.1323**	**0.1323**		**0.1323**	**0.1323**	**0.0000**	**1,894.9835**	**1,894.9835**	**0.0363**	**0.0347**	**1,906.5160**

4.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	1.15346e+006	335.5554	0.0152	3.1400e-003	336.8472
City Park	0	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	3.23278e+006	940.4519	0.0425	8.8000e-003	944.0724
Fire Station	419918	122.1591	5.5200e-003	1.1400e-003	122.6294
Single Family Housing	4.9178e+006	1,430.6453	0.0647	0.0134	1,436.1528
Strip Mall	1.70916e+006	497.2152	0.0225	4.6500e-003	499.1293
Total		**3,326.0269**	**0.1504**	**0.0311**	**3,338.8311**

5.0 Area Detail

5.1 Mitigation Measures Area

Use only Natural Gas Hearths

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	19.8174	0.1421	12.3317	6.5000e-004		0.1509	0.1509		0.1500	0.1500	0.0000	1,199.7714	1,199.7714	0.0419	0.0216	1,207.3543

5.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	5.1068					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	14.2226					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1192	1.0000e-005	6.5000e-003	0.0000		0.0824	0.0824		0.0815	0.0815	0.0000	1,179.5844	1,179.5844	0.0226	0.0216	1,186.7631
Landscaping	0.3688	0.1421	12.3252	6.5000e-004		0.0685	0.0685		0.0685	0.0685	0.0000	20.1871	20.1871	0.0192	0.0000	20.5912
Total	**19.8174**	**0.1421**	**12.3317**	**6.5000e-004**		**0.1509**	**0.1509**		**0.1500**	**0.1500**	**0.0000**	**1,199.7714**	**1,199.7714**	**0.0419**	**0.0216**	**1,207.3543**

6.0 Water Detail

6.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	309.7506	3.4413	0.0834	407.8824

6.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	15.8976 / 11.7638	42.0461	0.5196	0.0126	56.8508
City Park	0 / 31.2145	31.7823	1.4400e-003	3.0000e-004	31.9047
Condo/Townhouse	36.7469 / 27.1917	97.1885	1.2011	0.0290	131.4091
Fire Station	6.92289 / 4.9803	18.1647	0.2263	5.4700e-003	24.6111
Single Family Housing	34.0886 / 25.2246	90.1578	1.1142	0.0269	121.9029
Strip Mall	11.5903 / 8.33799	30.4112	0.3788	9.1500e-003	41.2038
Total		**309.7506**	**3.4413**	**0.0834**	**407.8824**

7.0 Waste Detail

7.1 Mitigation Measures Waste

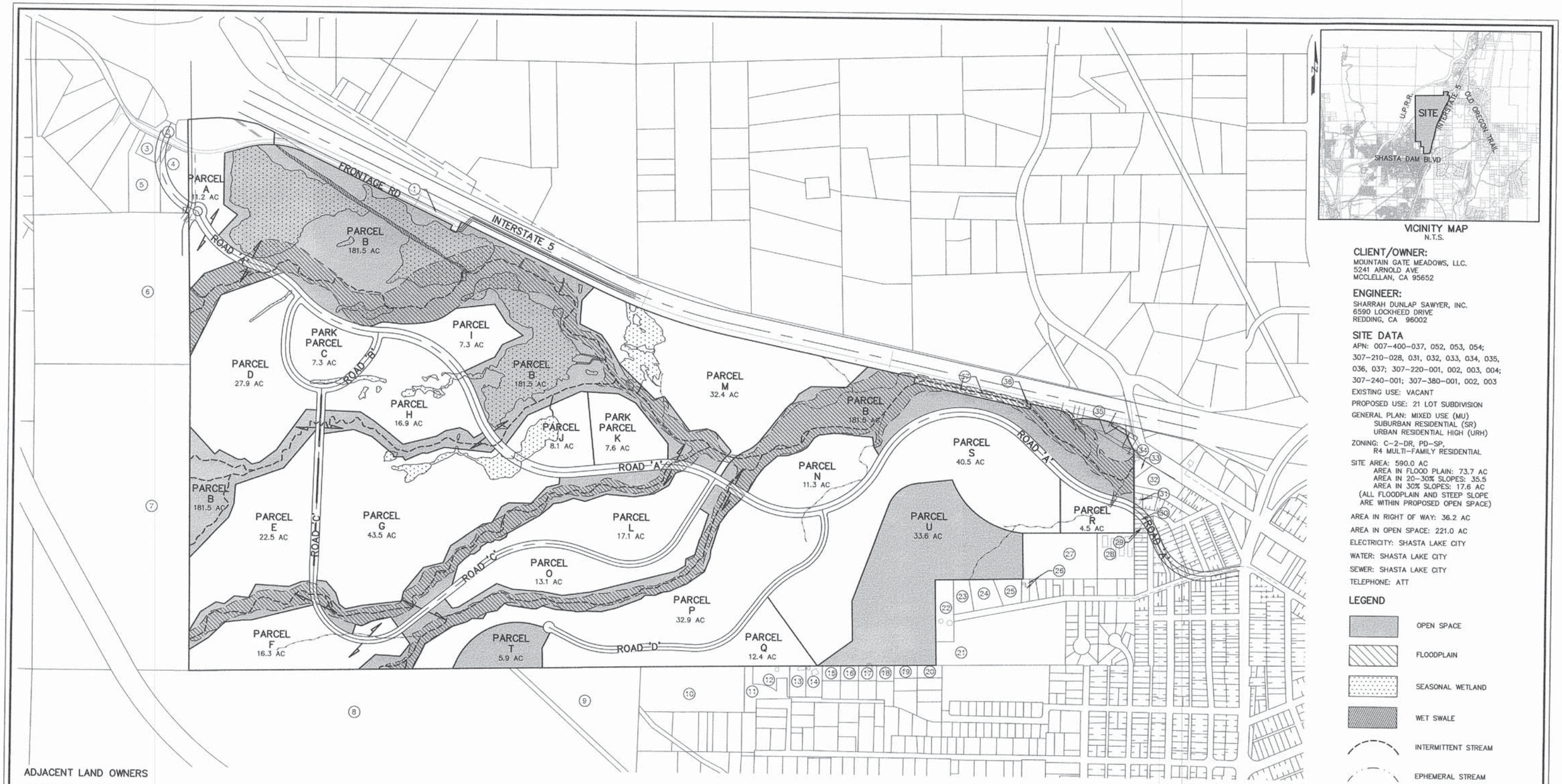
Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	281.7839	16.6530	0.0000	631.4960

7.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	140.3	28.4796	1.6831	0.0000	63.8247
City Park	2.4	0.4872	0.0288	0.0000	1.0918
Condo/Townhouse	324.3	65.8300	3.8904	0.0000	147.5292
Fire Station	248.29	50.4006	2.9786	0.0000	112.9511
Single Family Housing	467.5	94.8983	5.6083	0.0000	212.6732
Strip Mall	205.37	41.6883	2.4637	0.0000	93.4261
Total		**281.7839**	**16.6530**	**0.0000**	**631.4960**



VICINITY MAP
N.T.S.

CLIENT/OWNER:
MOUNTAIN GATE MEADOWS, LLC.
5241 ARNOLD AVE
MCCLELLAN, CA 95652

ENGINEER:
SHARRAH DUNLAP SAWYER, INC.
6590 LOCKHEED DRIVE
REDDING, CA 96002

SITE DATA

APN: 007-400-037, 052, 053, 054; 307-210-028, 031, 032, 033, 034, 035, 036, 037; 307-220-001, 002, 003, 004; 307-240-001; 307-380-001, 002, 003

EXISTING USE: VACANT

PROPOSED USE: 21 LOT SUBDIVISION

GENERAL PLAN: MIXED USE (MU)
SUBURBAN RESIDENTIAL (SR)
URBAN RESIDENTIAL HIGH (URH)

ZONING: C-2-DR, PD-SP,
R4 MULTI-FAMILY RESIDENTIAL

SITE AREA: 590.0 AC
AREA IN FLOOD PLAIN: 73.7 AC
AREA IN 20-30% SLOPES: 35.5
AREA IN 30% SLOPES: 17.6 AC
(ALL FLOODPLAIN AND STEEP SLOPE ARE WITHIN PROPOSED OPEN SPACE)

AREA IN RIGHT OF WAY: 36.2 AC

AREA IN OPEN SPACE: 221.0 AC

ELECTRICITY: SHASTA LAKE CITY

WATER: SHASTA LAKE CITY

SEWER: SHASTA LAKE CITY

TELEPHONE: ATT

LEGEND

- OPEN SPACE
- FLOODPLAIN
- SEASONAL WETLAND
- WET SWALE
- INTERMITTENT STREAM
- EPHEMERAL STREAM

ADJACENT LAND OWNERS

1. APN 307-210-007
SHASTA LAKE CITY OF
PO BOX 777
SHASTA LAKE CITY CA 96019
2. APN 307-220-005
SHASTA, COUNTY OF
1855 PLACER ST
REDDING CA 96001
3. APN 307-230-008
MOUNTAIN GATE MEADOWS LLC
5241 ARNOLD AVE
MCCLELLAN CA 95652
4. APN 307-230-019
MOUNTAIN GATE MEADOWS LLC
5241 ARNOLD AVE
MCCLELLAN CA 95652
5. APN 307-230-007
MOUNTAIN GATE MEADOWS LLC
5241 ARNOLD AVE
MCCLELLAN CA 95652
6. APN 307-230-014
MINNESOTA MINING & MFG CO
7. APN 307-200-007
MINNESOTA MINING & MFG CO
8. APN 307-200-010
MINNESOTA MINING & MFG CO
9. APN 307-200-012
RUTH K LINVILLE
PO BOX 37
REDDING CA 96099
10. APN 005-630-001
SHASTA LAKE MEADOWS LLC
PO BOX 494865
REDDING CA 96049
11. APN 005-630-027
SHASTA LAKE MEADOWS LLC
PO BOX 494865
REDDING CA 96049
12. APN 005-630-026
ANDERSEN LARRY & DENISE
2411 SMITH AVE
SHASTA LAKE CA 96019
13. APN 005-620-001
HUCKABAY THOMAS F &
GRAHAM SHARON K
601 EUGENE ST
SHASTA LAKE CA 96019
14. APN 005-620-054
JAMES E JONES
2144 HILLTOP DR
REDDING CA 96002
15. APN 005-620-039
ALBERT W & JANICE G LAWSON
5025 TANYA LN
SHASTA LAKE CA 96019
16. APN 005-620-040
ZELLER HOWARD
5026 TANYA LN
SHASTA LAKE CA 96019
17. APN 005-620-035
CLEO LLC
PO BOX 493926
REDDING CA 96049
18. APN 005-620-036
CLEO LLC
PO BOX 493928
REDDING CA 96049
19. APN 005-620-038
JERRY J & LORI K JOHNSON
1923 MONTANA
SHASTA LAKE CA 96019
20. APN 005-620-034
CLEO LLC
PO BOX 493928
REDDING CA 96049
21. APN 007-520-004
KOVALCHIK-LUM LIUMILA ETAL
4605 NANTUCKET
REDDING CA 96001
22. APN 007-520-001
SHASTA LAKE CITY OF
PO BOX 777
SHASTA LAKE CITY CA 96019
23. APN 007-520-005
SBA STRUCTURES INC
5900 BROKEN SOUND PKWY
BOCA RATION FL 33487
24. APN 007-520-007
MARK D & SHARON CARBAUGH
1037 SHASTA WAY
SHASTA LAKE CA 96019
25. APN 007-450-054
HALL JAMES RICHARD TR
99 HIGHLAND RD
SAN LUIS OBISPO CA 93405
26. APN 007-450-004
LEWIS A & JONNIE F WILKINSON
1101 SHASTA WAY
SHASTA LAKE CA 96019
27. APN 007-400-002
GATEWAY UNIFIED SCHOOL
DISTRICT
4411 MOUNTAIN LAKES BLVD
REDDING CA 96003
28. APN 007-400-003
GATEWAY UNIFIED SCHOOL
DISTRICT
4411 MOUNTAIN LAKES BLVD
REDDING CA 96003
29. APN 007-380-003
ROBERT L ALGER
5369 GRAND AVE
SHASTA LAKE CITY CA 96019
30. APN 007-380-004
CHRISTINE M ROCHA
5373 GRAND AVE
SHASTA LAKE CITY CA 96019
31. APN 007-380-035
LESLIE LLOYD
1429 BUENA VISTA ST
SHASTA LAKE CA 96019
32. APN 007-380-037
REDEVELOPMENT AGENCY OF
THE CITY OF SHASTA LAKE
PO BOX 777
SHASTA LAKE CA 96019
33. APN 007-380-036
GERALD C & AMELIA R CLARK
6380 ALDON WAY
ANDERSON CA 96007
34. APN 007-390-016
CALIFORNIA, STATE OF
35. APN 007-390-015
CALIFORNIA, STATE OF
36. APN 007-400-032
CALIFORNIA, STATE OF
37. APN 007-400-034
CALIFORNIA, STATE OF

N
400 0 200 400
1 INCH = 400 FEET

REVISIONS AND/OR CORRECTIONS		
DATE	NATURE	BY

MOUNTAIN GATE AT SHASTA COVER SHEET

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Structural Design • Planning
Landscape Architecture • Surveying • Presentation Graphics
6590 Lockheed Drive, Redding, CA 96002
530.221.3792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=400' SHEET 1 OF 7

P:\proj\p\041221\dwg\041221M.dwg 04.01221

PARCEL A 11.2 AC

PARCEL B 181.5 AC

PARCEL D 27.9 AC

PARCEL E 22.5 AC

PARCEL F 16.3 AC

PARCEL G 43.5 AC

PARK PARCEL C 7.3 AC

PARCEL H 16.9 AC

PARCEL I 7.3 AC

PARCEL J 8.1 AC

PARCEL K 7.5 AC

PARCEL L 17.1 AC

PARCEL M 32.4 AC

PARCEL O 13.1 AC

PARCEL P 32.9 AC

PARCEL Q 19.3 AC

PARCEL T 5.9 AC

ROAD "A"

ROAD "B"

ROAD "C"

ROAD "D"

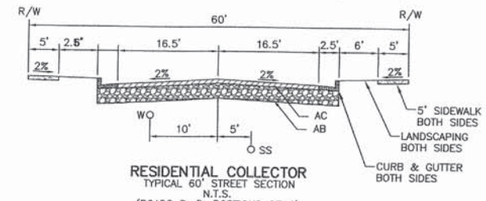
MT. GATE RD

WONDERLAND BLVD

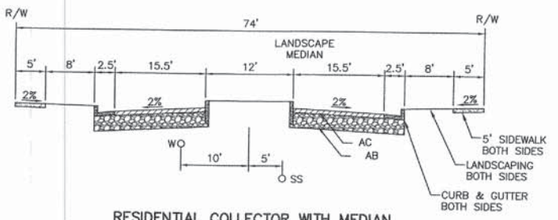
INTERSTATE 5

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N01°11'11"W 33'
N88°48'49"E 692'
N04°27'30"W 199'
N11°14'09"E 164'
N25°32'12"E 167'
N00°02'46"W 110'
N88°48'49"E 1334'
N89°31'47"E 2690'
N00°02'51"W 1328'
N00°02'51"W 1282'
N64°27'52"W 40'
N25°32'08"E 60'
N64°27'52"W 100'
N25°32'08"E 1383'

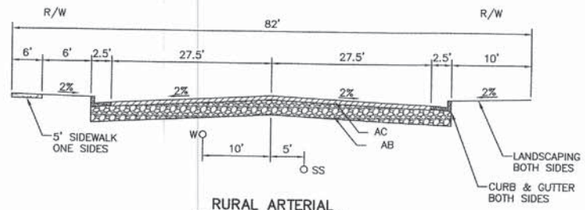
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R=50'
R=275'



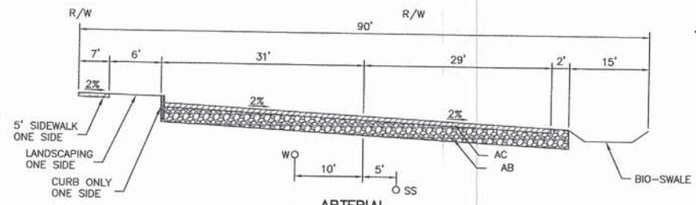
RESIDENTIAL COLLECTOR
TYPICAL 60' STREET SECTION
N.T.S.
(ROADS B, D, PORTIONS OF C)



RESIDENTIAL COLLECTOR WITH MEDIAN
TYPICAL 74' STREET SECTION
N.T.S.
(NORTH PORTION OF ROAD C)



RURAL ARTERIAL
TYPICAL 82' STREET SECTION
N.T.S.
(SOUTH PORTION OF ROAD A)



ARTERIAL
TYPICAL 90' STREET SECTION
N.T.S.
(NORTH PORTION OF ROAD A)

200 0 100 200
1 INCH = 200 FEET

MOUNTAIN GATE AT SHASTA TENTATIVE MAP

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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DATE: AUG, 2011 SCALE: 1"=200' SHEET 2 OF 7

P:\arch\e\041222\Civil\SV041222M.dwg 04.0122

PARCEL L
17.1 AC

PARCEL O
13.1 AC

ROAD "C"

PARCEL P
32.9 AC

PARCEL M
32.4 AC

PARCEL Q
12.4 AC

PARCEL N
11.3 AC

INTERSTATE 5

EUGENE AVE

PARCEL U
33.6 AC

PARCEL S
40.5 AC

SHASTA WAY

ROAD "A"

PARCEL R
4.5 AC

UNION SCHOOL RD

N12°01'02"E 1682'

N77°58'58"W 47'

N77°31'25"W 47'

N12°01'02"E 274'

N28°17'56"E 75'

N56°57'11"E 50'

N08°46'05"W 92'

N03°29'11"E 160'

N12°01'02"E 66'

N25°27'59"E 46'

N58°25'19"W 19'

N31°34'41"E 160'

R=460' 145'

N88°47'45"E 753'

N88°51'14"E 400'

N89°13'20"E 731'

N00°28'26"W 2565'

N01°14'02"W 775'

N00°24'46"W 980'

N00°24'00"W 332'

SLOPE ANALYSIS	
LOT A	
Slope Range	Area
0%-20%	11.0 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	11.2 Acres

SLOPE ANALYSIS	
LOT H	
Slope Range	Area
0%-20%	16.6 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	16.9 Acres

SLOPE ANALYSIS	
LOT O	
Slope Range	Area
0%-20%	12.9 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	13.1 Acres

LOT B	
Slope Range	Area
0%-20%	163.6 Acres
20%-30%	12.1 Acres
30+%	5.8 Acres
Total Area	181.5 Acres

LOT I	
Slope Range	Area
0%-20%	7.3 Acres
20%-30%	0.0 Acres
30+%	0.0 Acres
Total Area	7.3 Acres

LOT P	
Slope Range	Area
0%-20%	32.1 Acres
20%-30%	0.8 Acres
30+%	0.0 Acres
Total Area	32.9 Acres

LOT C	
Slope Range	Area
0%-20%	6.6 Acres
20%-30%	0.7 Acres
30+%	0.0 Acres
Total Area	7.3 Acres

LOT J	
Slope Range	Area
0%-20%	8.0 Acres
20%-30%	0.1 Acres
30+%	0.0 Acres
Total Area	8.1 Acres

LOT Q	
Slope Range	Area
0%-20%	12.2 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	12.4 Acres

LOT D	
Slope Range	Area
0%-20%	27.8 Acres
20%-30%	0.1 Acres
30+%	0.0 Acres
Total Area	27.9 Acres

LOT K	
Slope Range	Area
0%-20%	4.8 Acres
20%-30%	1.7 Acres
30+%	1.1 Acres
Total Area	7.6 Acres

LOT R	
Slope Range	Area
0%-20%	4.0 Acres
20%-30%	0.5 Acres
30+%	0.0 Acres
Total Area	4.5 Acres

LOT E	
Slope Range	Area
0%-20%	22.2 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	22.5 Acres

LOT L	
Slope Range	Area
0%-20%	16.9 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	17.1 Acres

LOT S	
Slope Range	Area
0%-20%	36.5 Acres
20%-30%	4.0 Acres
30+%	0.0 Acres
Total Area	40.5 Acres

LOT F	
Slope Range	Area
0%-20%	15.5 Acres
20%-30%	0.8 Acres
30+%	0.0 Acres
Total Area	16.3 Acres

LOT M	
Slope Range	Area
0%-20%	30.6 Acres
20%-30%	1.8 Acres
30+%	0.0 Acres
Total Area	32.4 Acres

LOT T	
Slope Range	Area
0%-20%	2.2 Acres
20%-30%	2.4 Acres
30+%	1.3 Acres
Total Area	5.9 Acres

LOT G	
Slope Range	Area
0%-20%	43.2 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	43.5 Acres

LOT N	
Slope Range	Area
0%-20%	10.9 Acres
20%-30%	0.4 Acres
30+%	0.0 Acres
Total Area	11.3 Acres

LOT U	
Slope Range	Area
0%-20%	15.3 Acres
20%-30%	11.6 Acres
30+%	6.7 Acres
Total Area	33.6 Acres

N

200 0 100 200

1 INCH = 200 FEET

MOUNTAIN GATE AT SHASTA TENTATIVE MAP

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

SHARRAH DUNLAP SAWYER, INC.
Civil Engineering • Structural Design • Planning
Landscape Architecture • Surveying • Presentation Graphics
6780 Lorlchard Drive, Redding, CA 96002
530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=200' SHEET 3 OF 7

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MOUNTAIN GATE AT SHASTA UTILITIES PLAN

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

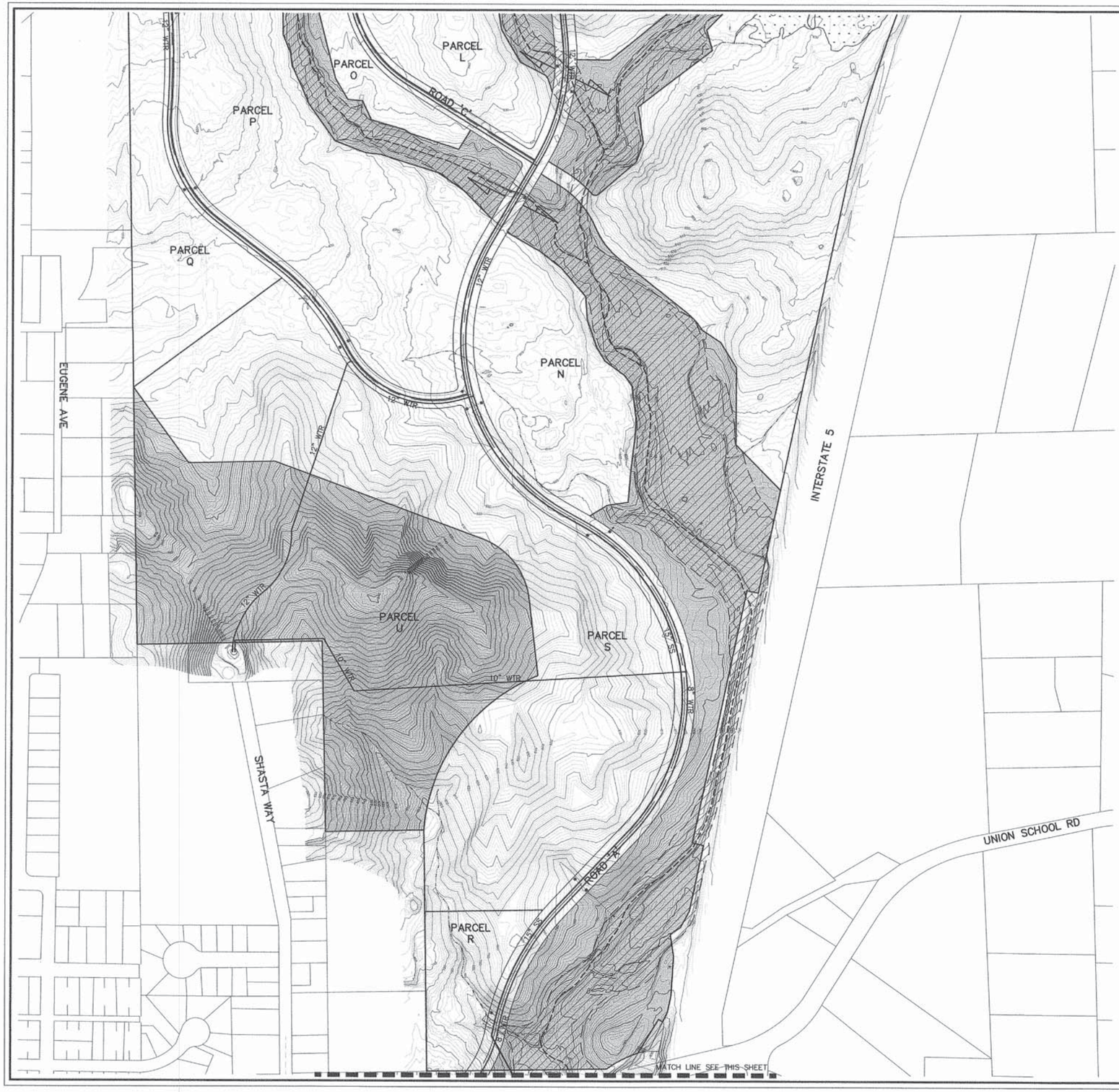
CITY OF SHASTA LAKE

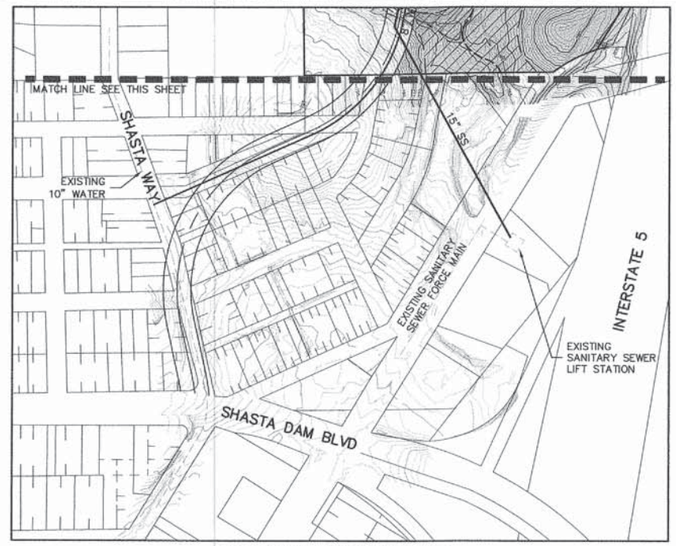
BY

SHARRAH DUNLAP SAWYER, INC.
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DATE: AUG, 2011 SCALE: 1"=200' SHEET 4 OF 7

P:\proj\e\041221\dwg\041221tf.dwg 04.01.22





OFF SITE UTILITY CONNECTION

N

200 0 100 200

1 INCH = 200 FEET

MOUNTAIN GATE AT SHASTA UTILITIES PLAN

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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DATE: AUG, 2011 SCALE: 1"=200' SHEET 5 OF 7

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MOUNTAIN GATE AT SHASTA PRELIMINARY GRADING

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W.
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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DATE: AUG, 2011 SCALE: 1"=200' SHEET 6 OF 7

P:\proj\s\041222\dwg\041222M.dwg 04.30.22

PARCEL L
STORM WATER DETENTION POND MAX WATER SURFACE ELEVATION 824.3
PARCEL O
ROAD C
MINIMUM PAD ELEVATION 825.3
PARCEL P
STORM WATER DETENTION POND MAX WATER SURFACE ELEVATION 822.4
MINIMUM PAD ELEVATION 823.4
PARCEL Q
STORM WATER DETENTION POND MAX WATER SURFACE ELEVATION 814.6
STORM WATER DETENTION POND MAX WATER SURFACE ELEVATION 807.8
MINIMUM PAD ELEVATION 810.0
TOP OF DIKE ELEVATION 809.0
MINIMUM PAD ELEVATION 810.0
PARCEL N
EUGENE AVE
INTERSTATE 5
PARCEL U
PARCEL S
SHASTA WAY
ROAD A
PARCEL R
UNION SCHOOL RD

LEGEND

EXTENT OF GRADING

N

200 0 100 200
1 INCH = 200 FEET

NOTE: THE ENTIRE BOUNDARY OF PARCELS A,C–R WILL BE GRADED ONCE THOSE PARCELS DEVELOP AS PART OF A SEPARATE TENTATIVE MAP.

MOUNTAIN GATE AT SHASTA
PRELIMINARY GRADING

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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530.221.1792 voice • 530.221.0369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=200' SHEET 7 OF 7

P:\proj\sb\04122\dwg\04122SM.dwg 04.0122



LEGEND

20%–30% SLOPE

30%+ SLOPE

SLOPE ANALYSIS	
LOT A	
Slope Range	Area
0%-20%	11.0 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	11.2 Acres

SLOPE ANALYSIS	
LOT H	
Slope Range	Area
0%-20%	16.6 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	16.9 Acres

SLOPE ANALYSIS	
LOT O	
Slope Range	Area
0%-20%	12.9 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	13.1 Acres

LOT B	
Slope Range	Area
0%-20%	163.6 Acres
20%-30%	12.1 Acres
30+%	5.8 Acres
Total Area	181.5 Acres

LOT I	
Slope Range	Area
0%-20%	7.3 Acres
20%-30%	0.0 Acres
30+%	0.0 Acres
Total Area	7.3 Acres

LOT P	
Slope Range	Area
0%-20%	32.1 Acres
20%-30%	0.8 Acres
30+%	0.0 Acres
Total Area	32.9 Acres

LOT C	
Slope Range	Area
0%-20%	6.6 Acres
20%-30%	0.7 Acres
30+%	0.0 Acres
Total Area	7.3 Acres

LOT J	
Slope Range	Area
0%-20%	8.0 Acres
20%-30%	0.1 Acres
30+%	0.0 Acres
Total Area	8.1 Acres

LOT Q	
Slope Range	Area
0%-20%	12.2 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	12.4 Acres

LOT D	
Slope Range	Area
0%-20%	27.8 Acres
20%-30%	0.1 Acres
30+%	0.0 Acres
Total Area	27.9 Acres

LOT K	
Slope Range	Area
0%-20%	4.8 Acres
20%-30%	1.7 Acres
30+%	1.1 Acres
Total Area	7.6 Acres

LOT R	
Slope Range	Area
0%-20%	4.0 Acres
20%-30%	0.5 Acres
30+%	0.0 Acres
Total Area	4.5 Acres

LOT E	
Slope Range	Area
0%-20%	22.2 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	22.5 Acres

LOT L	
Slope Range	Area
0%-20%	16.9 Acres
20%-30%	0.2 Acres
30+%	0.0 Acres
Total Area	17.1 Acres

LOT S	
Slope Range	Area
0%-20%	36.5 Acres
20%-30%	4.0 Acres
30+%	0.0 Acres
Total Area	40.5 Acres

LOT F	
Slope Range	Area
0%-20%	15.5 Acres
20%-30%	0.8 Acres
30+%	0.0 Acres
Total Area	16.3 Acres

LOT M	
Slope Range	Area
0%-20%	30.6 Acres
20%-30%	1.8 Acres
30+%	0.0 Acres
Total Area	32.4 Acres

LOT T	
Slope Range	Area
0%-20%	2.2 Acres
20%-30%	2.4 Acres
30+%	1.3 Acres
Total Area	5.9 Acres

LOT G	
Slope Range	Area
0%-20%	43.2 Acres
20%-30%	0.3 Acres
30+%	0.0 Acres
Total Area	43.5 Acres

LOT N	
Slope Range	Area
0%-20%	10.9 Acres
20%-30%	0.4 Acres
30+%	0.0 Acres
Total Area	11.3 Acres

LOT U	
Slope Range	Area
0%-20%	15.3 Acres
20%-30%	11.6 Acres
30+%	6.7 Acres
Total Area	33.6 Acres

400 0 200 400

1 INCH = 400 FEET

MOUNTAIN GATE AT SHASTA
SLOPE ANALYSIS
EXHIBIT

PORTIONS OF SECTIONS 20,21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

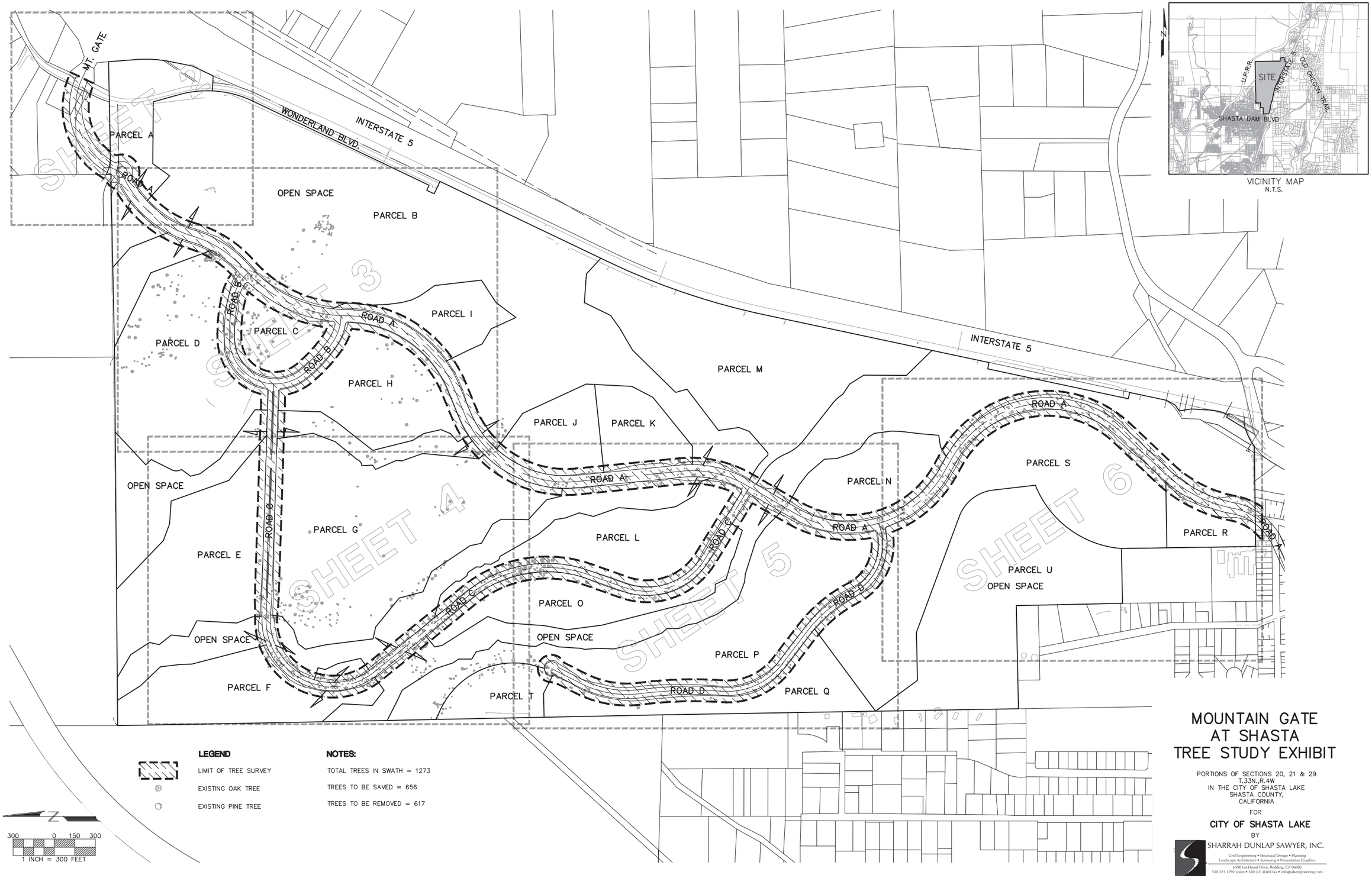
CITY OF SHASTA LAKE

BY

SHARRAH DUNLAP SAWYER, INC.
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530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: APRIL 1, 2014 SCALE: 1"=400' SHEET 1 OF 1

P:\proj\p\04122\dwg\04122EXH-SLOPE ANALYSIS.dwg 04.0122



MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

SHARRAH DUNLAP SAWYER, INC.
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Landscape Architecture • Surveying • Presentation Graphics
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DATE: AUG, 2011 SCALE: 1"=300' SHEET 1 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04122



LEGEND

- LIMIT OF TREE SURVEY
- EXISTING OAK TREE
- EXISTING PINE TREE

SEE SHEET 3

MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=100' SHEET 2 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04.122

SEE SHEET 2

OPEN SPACE

ROAD A

ROAD B

ROAD C

PARCEL C

PARCEL D

PARCEL H

PARCEL I

OPEN SPACE

SEE SHEET 4

SEE SHEET 4

LEGEND

LIMIT OF TREE SURVEY

EXISTING OAK TREE

EXISTING PINE TREE

N

100 0 50 100

1 INCH = 100 FEET

MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=100' SHEET 3 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04.122

SEE SHEET 3

SEE SHEET 3

SEE SHEET 5

SEE SHEET 5

SEE SHEET 5

OPEN SPACE

OPEN SPACE

ROAD A

ROAD C

PARCEL E

PARCEL G

ROAD C

OPEN SPACE

ROAD C

PARCEL F

PARCEL P

OPEN SPACE

CITY LIMIT

LEGEND

LIMIT OF TREE SURVEY

EXISTING OAK TREE

EXISTING PINE TREE

100 0 50 100

1 INCH = 100 FEET

MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

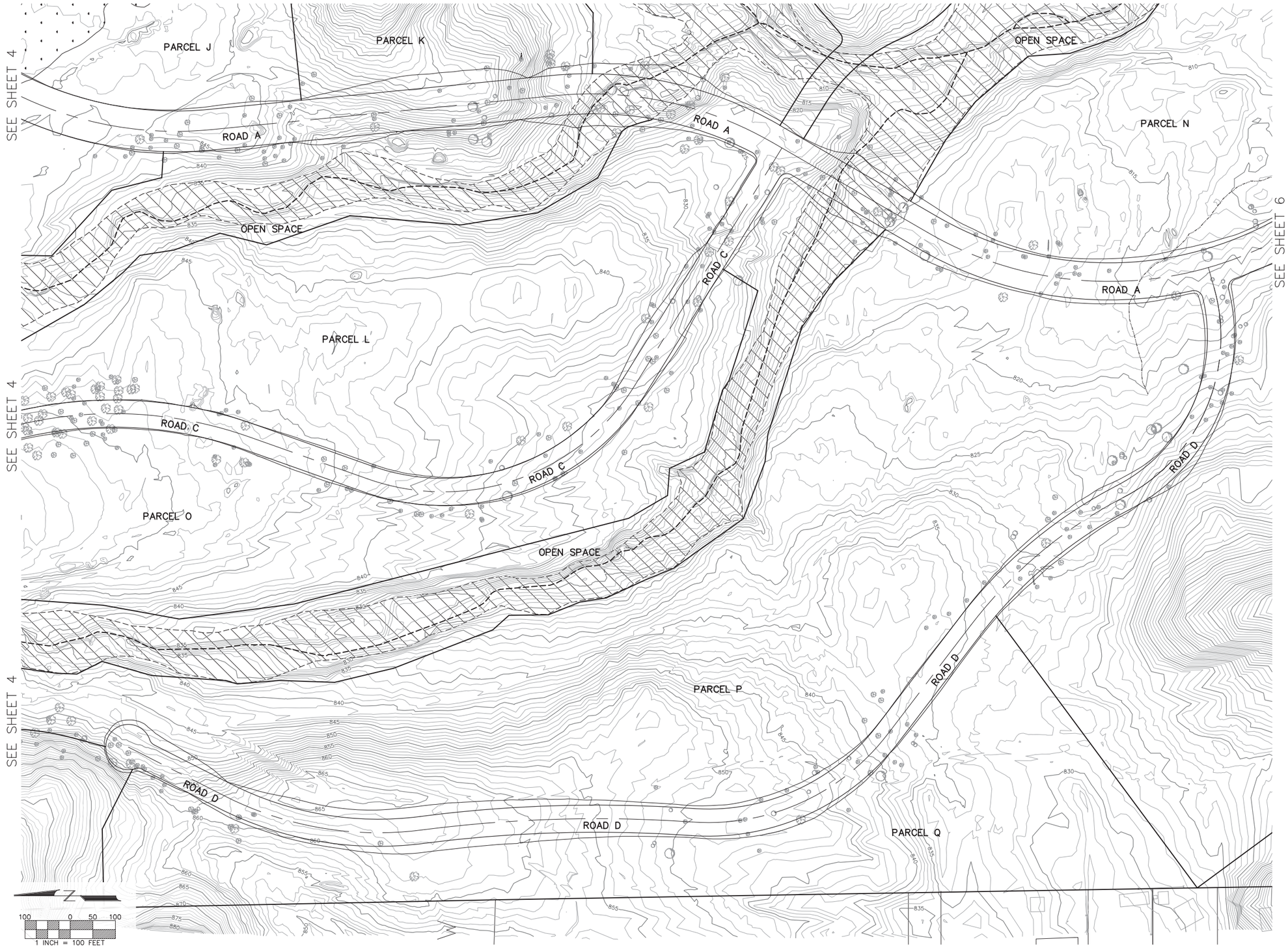
CITY OF SHASTA LAKE

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DATE: AUG, 2011 SCALE: 1"=100' SHEET 4 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04.122



MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

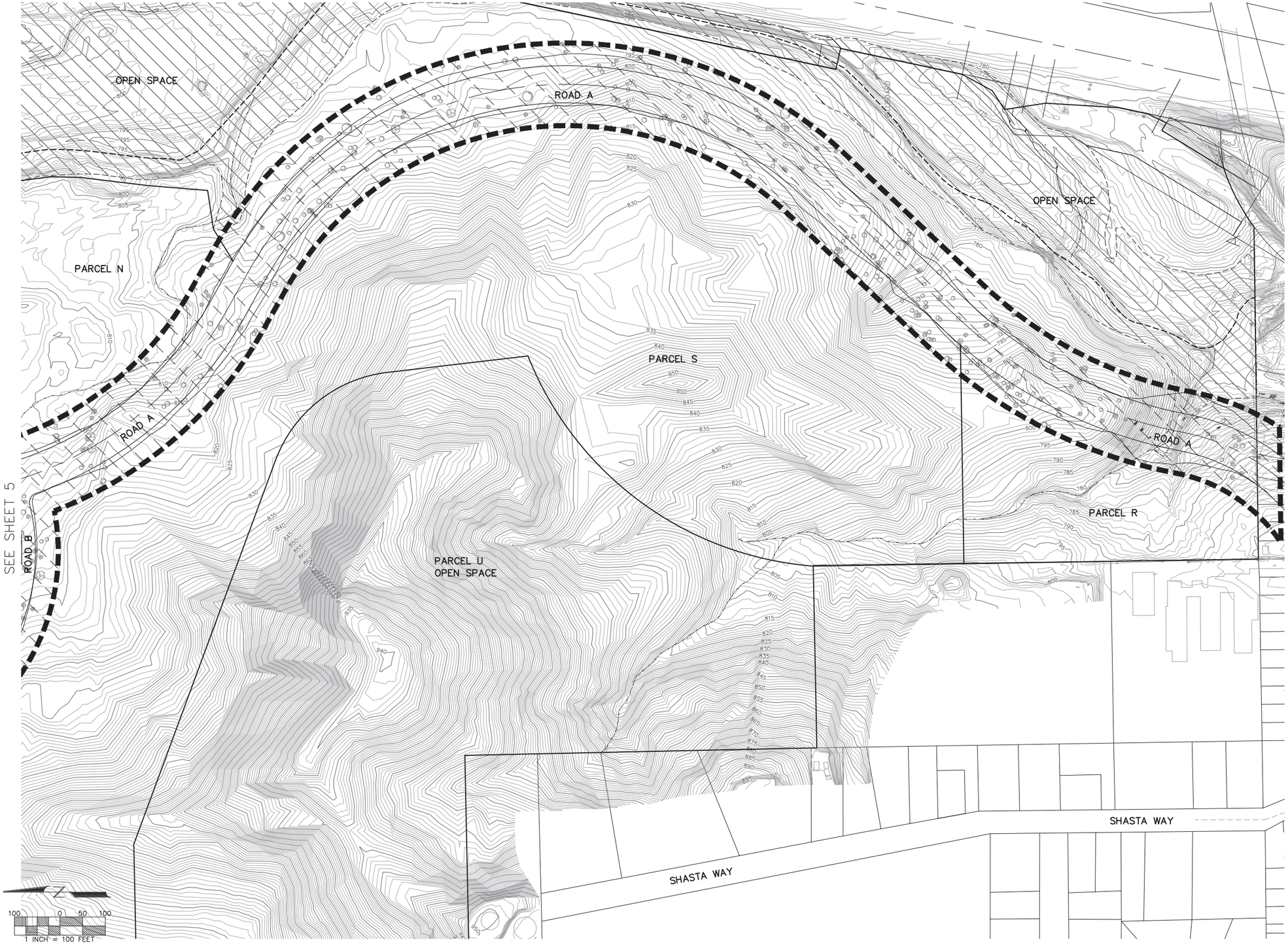
CITY OF SHASTA LAKE

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530.221.1792 voice • 530.221.8369 fax • info@sdsengineering.com

DATE: AUG, 2011 SCALE: 1"=100' SHEET 5 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04.122



LEGEND

LIMIT OF TREE SURVEY

EXISTING OAK TREE

EXISTING PINE TREE

MOUNTAIN GATE AT SHASTA TREE STUDY EXHIBIT

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

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DATE: AUG, 2011 SCALE: 1"=100' SHEET 6 OF 8

P:\proj\p\04122\dwg\04122 TREE STUDY.dwg 04.122

SHEET 2

POINT NUMBER	TREE SIZE	TREE TYPE
60,900	16"/15"	MULTI TRUNK OAK

SHEET 3

POINT NUMBER	TREE SIZE	TREE TYPE
5,100	24"	OAK
5,103	36"	OAK
5,142	24"	OAK
5,143	36"	OAK
5,144	30"	OAK
5,149	36"	FORKED OAK
5,150	24"	OAK
5,151	24"	OAK
5,152	24"	OAK
5,153	36"	OAK
5,154	24"	FORKED OAK
5,159	24"/12"	FORKED OAK
5,160	16"/16"/16"	MULTI TRUNK OAK
5,161	24"	OAK
5,162	12"	OAK
5,163	20"	OAK
5,164	10"/8"/7"	MULTI TRUNK OAK
5,165	12"	OAK
5,166	12"	OAK
5,167	12"	OAK
5,168	10"	OAK
5,169	12"	OAK
5,170	12"	FORKED OAK
40,195	12"	OAK
40,196	18"	OAK
40,197	24"	MULTI TRUNK OAK
40,209	20"	OAK
40,210	24"	OAK
40,211	22"	OAK
40,213	14"	OAK
40,215	10"	OAK
40,216	18"	OAK
40,217	18"	OAK
40,218	36"	FORKED OAK
40,225	30"	OAK
40,226	18"	OAK
40,253	24"	OAK
40,256	24"	OAK
40,257	12"	OAK
40,258	14"	FORKED OAK
40,259	24"	OAK
40,260	12"/12"	FORKED OAK
40,262	24"	OAK
40,263	28"	MULTI TRUNK OAK
40,264	12"	OAK
40,265	18"	OAK
40,266	12"	FORKED OAK
40,267	14"	OAK
40,268	12"	OAK
40,269	24"	OAK
40,270	16"	OAK
40,271	10"	OAK
40,272	12"	OAK
40,273	12"	FORKED OAK
40,274	10"	FORKED OAK
40,275	16"	MULTI TRUNK OAK
40,276	12"	OAK
40,277	12"	FORKED OAK
40,278	12"	OAK
40,279	18"	OAK
40,280	24"	FORKED OAK
40,281	12"	OAK
40,282	24"	OAK
40,283	20"	OAK
40,284	10"	OAK
40,285	28"	FORKED OAK
40,286	12"	OAK
40,287	18"	OAK
40,288	16"	OAK
40,289	16"	OAK
40,290	18"	FORKED OAK
40,291	12"	OAK
40,292	20"	OAK
40,293	14"	OAK
40,294	24"	OAK
40,295	18"	OAK
40,296	24"	OAK
40,297	24"	FORKED OAK
40,298	24"	FORKED OAK
40,299	18"	OAK
40,300	10"	OAK
40,301	10"	OAK
40,302	12"	FORKED OAK
40,303	16"	OAK
40,304	28"	OAK
40,305	16"/12"	MULTI TRUNK OAK
40,306	24"	OAK
40,307	24"	OAK
40,308	20"	OAK
40,309	20"	OAK
40,310	20"	OAK
40,311	36"	OAK
40,318	36"	OAK
40,319	24"	OAK
40,320	24"	OAK
40,321	24"	OAK
40,322	30"	FORKED OAK
40,323	36"	OAK
40,324	14"	OAK
40,325	36"	OAK
40,326	22"	OAK
40,327	16"	OAK
40,328	22"	OAK
40,329	24"	OAK
40,330	36"	OAK
40,331	24"	OAK
40,332	30"	OAK
40,335	30"	OAK
40,338	24"	OAK
40,353	30"	OAK

SHEET 3 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
40,354	24"	OAK
40,363	16"/24"	FORKED OAK
40,364	24"	OAK
40,365	24"	OAK
40,366	32"	OAK
40,367	32"	OAK
40,372	24"	OAK

SHEET 4

POINT NUMBER	TREE SIZE	TREE TYPE
5,104	14"/14"/20"	MULTI TRUNK OAK
5,105	12"	OAK
5,106	10"	FORKED OAK
5,107	18"	OAK
5,109	24"	OAK
5,110	36"	OAK
5,111	18"	OAK
5,112	28"	OAK
5,113	24"	MULTI TRUNK OAK
5,114	12"	OAK
5,115	12"	OAK
5,116	24"	MULTI TRUNK OAK
5,117	16"	OAK
5,118	24"	OAK
5,119	24"	OAK
5,120	18"	OAK
5,121	12"/12"/10"	MULTI TRUNK OAK
5,122	12"	OAK
5,123	14"	OAK
5,124	18"	OAK
5,125	12"/10"	MULTI TRUNK OAK
5,126	12"/10"	MULTI TRUNK OAK
5,127	14"	OAK
5,128	16"/16"	MULTI TRUNK OAK
5,129	14"	OAK
5,130	12"	OAK
5,131	16"	OAK
5,132	30"	OAK
5,133	16"	OAK
5,134	12"	OAK
5,135	14"	OAK
5,136	10"/12"	FORKED OAK
5,137	10"	OAK
5,138	16"	OAK
5,139	12"	OAK
40,416	36"	OAK
40,417	10"	OAK
40,418	36"	OAK
40,419	36"	OAK
40,420	31"	OAK
40,421	12"/14"	FORKED OAK
40,422	30"	OAK
40,423	31"	OAK
40,424	12"/14"	FORKED OAK
40,425	20"	OAK
40,426	32"	OAK
40,427	18"	OAK
40,428	18"	OAK
40,429	35"	OAK
40,430	36"	OAK
40,476	12"	OAK
40,477	16"	OAK
40,606	17"	OAK
40,607	10"	OAK
40,608	13"/11"/10"	MULTI TRUNK OAK
40,609	12"	OAK
40,610	14"	OAK
40,611	14"	OAK
40,612	20"	OAK
40,613	16"	OAK
40,614	11"	OAK
40,615	11"	OAK
40,616	14"	OAK
40,617	10"	OAK
40,618	10"/9"	MULTI TRUNK OAK
40,619	14"/12"/7"	OAK
40,621	12"/10"/10"	MULTI TRUNK OAK
40,622	10"/14"	MULTI TRUNK OAK
40,623	10"/11"/10"	MULTI TRUNK OAK
40,624	10"/8"	OAK
40,625	17"	OAK
40,626	12"	OAK
40,627	36"	OAK
40,628	10"	OAK
40,629	14"	OAK
40,630	12"	OAK
40,631	10"	MULTI TRUNK OAK
40,632	20"	OAK
40,633	12"	OAK
40,634	16"	OAK
40,635	17"	OAK
40,636	26"	MULTI TRUNK OAK
40,637	12"	OAK
40,638	10"	OAK
40,639	12"	OAK
40,640	15"	OAK
40,641	16"	MULTI TRUNK OAK
40,642	24"	VALLEY PINE
40,643	10"	OAK
40,645	13"/6"	MULTI TRUNK OAK
40,646	10"	OAK
40,647	10"	OAK
40,648	12"	OAK
40,649	13"	OAK
40,650	12"	OAK
40,651	12"/8"	MULTI TRUNK OAK
40,652	11"	OAK
40,653	12"	OAK
40,654	16"	OAK
40,655	28"	PINE
40,656	10"	MULTI TRUNK OAK
40,657	11"	OAK
40,658	10"	OAK
40,659	22"	PINE

SHEET 4 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
40,661	14"	PINE
40,662	14"	OAK
40,663	13"	PINE
40,665	12"	OAK
40,666	14"	OAK
40,667	10"	OAK
40,668	11"	OAK
40,669	10"	OAK
40,670	28"	OAK
40,672	22"	PINE
40,674	20"	PINE
40,675	22"	OAK
40,676	14"	PINE
40,677	15"	OAK
40,678	11"	OAK
40,679	22"	OAK
40,680	12"	OAK
40,681	12"	OAK
40,682	10"	OAK
40,683	12"	OAK
40,684	12"	OAK
40,685	10"	OAK
40,686	36"	PINE
40,687	12"	OAK
40,688	12"	OAK
40,689	18"	OAK
40,690	12"	OAK
40,691	10"	OAK
40,692	17"	OAK
40,694	12"/11"	MULTI TRUNK OAK
40,695	11"	OAK
40,696	12"	OAK
40,697	16"	OAK
40,698	10"	OAK
40,699	16"	PINE
40,700	17"	OAK
40,701	14"	OAK
40,702	12"	OAK
40,703	15"	OAK
40,704	12"/14"/12"	MULTI TRUNK OAK
40,705	13"	OAK
40,706	11"	OAK
40,707	12"	OAK
40,708	10"	OAK
40,709	17"	OAK
40,710	12"	OAK
40,712	15"	OAK
40,713	10"	OAK
40,714	12"	OAK
40,715	10"	OAK
40,716	14"	OAK
40,717	14"	OAK
40,718	10"	OAK
40,719	15"	OAK
40,720	10"	OAK
40,721	14"	OAK
40,722	10"	OAK
40,723	21"	PINE
40,724	11"	OAK
40,725	10"	OAK
40,726	10"	PINE
40,727	12"/10"	MULTI TRUNK OAK
40,728	20"	OAK
40,729	10"	OAK
40,730	12"	OAK
40,731	10"	OAK
40,732	10"	OAK
40,733	14"	OAK
40,734	11"	OAK
40,735	12"	OAK
40,736	10"	OAK
40,737	10"	PINE
40,738	14"	OAK
40,739	10"	MULTI TRUNK OAK
40,740	10"	OAK
40,741	10"	OAK
40,742	17"	PINE
40,743	20"	OAK
40,745	12"	OAK
40,746	12"	OAK
40,747	14"	OAK
40,748	10"	OAK
40,749	12"	OAK
40,750	10"	OAK
40,751	10"	OAK
40,752	10"/12"	MULTI TRUNK OAK
40,753	14"	OAK
40,754	18"	MULTI TRUNK OAK
40,755	18"	MULTI TRUNK OAK
40,756	10"/8"	MULTI TRUNK OAK
40,757	22"	MULTI TRUNK OAK
40,758	17"	MULTI TRUNK OAK
40,759	19"	MULTI TRUNK OAK
40,760	15"	MULTI TRUNK OAK
40,761	36"	MULTI TRUNK OAK
40,763	48"	MULTI TRUNK OAK
40,764	36"	MULTI TRUNK OAK
40,765	10"	OAK
40,766	14"/8"/10"	MULTI TRUNK OAK
40,767	15"	OAK
40,768	10"	OAK
40,769	15"	MULTI TRUNK OAK
40,770	24"	MULTI TRUNK OAK
40,771	22"	MULTI TRUNK OAK
40,772	13"	OAK
40,773	10"/12"	MULTI TRUNK OAK
40,774	10"	OAK
40,775	14"	OAK
40,776	10"	OAK
40,777	11"	OAK
40,778	48"	MULTI TRUNK OAK
40,779	24"	MULTI TRUNK OAK
40,780	12"	OAK
40,781	11"/10"	MULTI TRUNK OAK
40,782	10"	OAK
40,783	21"	MULTI TRUNK OAK

SHEET 4 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
40,784	11"	OAK
40,785	22"	MULTI TRUNK OAK
40,786	18"	MULTI TRUNK OAK
40,787	11"	OAK
40,789	24"	MULTI TRUNK OAK
40,790	28"	MULTI TRUNK OAK
40,791	24"	MULTI TRUNK OAK
40,792	10"/10"	MULTI TRUNK OAK
40,793	18"	MULTI TRUNK OAK
40,794	24"	MULTI TRUNK OAK
40,795	10"	OAK
40,796	18"	OAK
40,798	10"/10"/8"	MULTI TRUNK OAK
40,799	36"	MULTI TRUNK OAK
40,800	20"	MULTI TRUNK OAK
40,801	36"	MULTI TRUNK OAK
40,802	10"	OAK
40,804	10"	OAK
40,805	10"	OAK
40,806	18"	MULTI TRUNK OAK
40,807	24"	PINE
40,808	14"/14"/8"	MULTI TRUNK OAK
40,809	10"	OAK
40,810	60"	MULTI TRUNK OAK
40,811	16"	OAK
40,812	28"	PINE
40,813	15"	OAK
40,814	20"	OAK
40,815	11"	OAK
40,816	11"	OAK
40,818	16"	PINE
40,820	24"	MULTI TRUNK OAK
40,821	15"	OAK
40,822	10"	OAK
40,823	13"	OAK
40,824	11"	OAK
40,825	22"	MULTI TRUNK OAK
40,826	15"	MULTI TRUNK OAK
40,827	27"	MULTI TRUNK OAK
40,828	12"	OAK
40,829	10"	OAK
40,830	10"	OAK
40,831	27"	MULTI TRUNK OAK
40,832	10"	OAK
40,833	10"	OAK
40,834	13"	OAK
40,835	29"	MULTI TRUNK OAK
40,836	27"	MULTI TRUNK OAK
40,837	24"	MULTI TRUNK OAK
40,838	12"	OAK
40,840	15"	OAK
40,841	19"	MULTI TRUNK OAK
40,842	15"	OAK
40,843	10"	OAK
40,844	20"	MULTI TRUNK OAK
40,845	18"	MULTI TRUNK OAK
40,846	17"	OAK
40,847	21"	MULTI TRUNK OAK
40,848	28"	MULTI TRUNK OAK
40,849	10"	OAK
40,850	10"	OAK
40,851	13"	OAK
40,852	18"	MULTI TRUNK OAK
40,853	10"	OAK
40,854	12"	OAK
40,856	15"	MULTI TRUNK OAK
40,857	13"	OAK
40,858	25"	OAK
40,859	13"	OAK
40,860	27"	MULTI TRUNK OAK
40,861	22"	FORKED OAK
40,862	26"	MULTI TRUNK OAK
40,863	12"	OAK
40,864	13"	MULTI TRUNK OAK
40,865	10"	OAK
40,866	10"/9"	MULTI TRUNK OAK
40,867	10"	OAK
40,868	10"	OAK
40,869	22"	MULTI TRUNK OAK
40,870	18"	MULTI TRUNK OAK
40,871	20"	MULTI TRUNK OAK
40,872	10"/5"	MULTI TRUNK OAK
40,873	10"	OAK
40,875	18"	OAK
40,876	10"/10"	MULTI TRUNK OAK
40,877	24"	OAK
40,878	17"	OAK
40,879	16"	OAK
40,880	10"	OAK
40,881	16"	OAK
40,882	11"	OAK
40,883	20"	MULTI TRUNK OAK
40,884	10"/10"/11"/9"	MULTI TRUNK OAK
40,885	15"	OAK
40,886	10"	OAK
40,887	16"	OAK
40,888	15"	OAK
40,889	11"/10"/8"	MULTI TRUNK OAK
40,890	32"	MULTI TRUNK OAK
40,892	26"	MULTI TRUNK OAK
40,893	18"	OAK
40,894	11"/12"/12"/12"	MULTI TRUNK OAK
40,895	20"	MULTI TRUNK OAK
40,897	42"	OAK
40,898	16"/10"	MULTI TRUNK OAK
40,899	48"	OAK
40,900	14"/9"	MULTI TRUNK OAK
40,919	12"/10"	MULTI TRUNK OAK
40,920	12"	OAK
40,921	10"/10"/13"	MULTI TRUNK OAK
40,922	30"	MULTI TRUNK OAK
40,923	48"	MULTI TRUNK OAK
40,924	10"	OAK
40,925	11"	OAK
40,926	16"	OAK
40,927	24"	OAK

SHEET 4 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
40,928	24"	OAK
40,929	32"	OAK
40,930	11"/8"	MULTI TRUNK OAK
40,931	11"	OAK
40,932	14"	OAK
40,933	22"	OAK
40,934	12"	VALLEY PINE
40,935	24"	OAK
40,936	18"	OAK
40,937	16"	OAK
40,938	14"	OAK
40,939	11"	OAK
40,940	24"	OAK
40,941	10"/8"/7"	MULTI TRUNK OAK
40,942	14"/10"/8"	MULTI TRUNK OAK
40,943	12"/9"/16"/10"	MULTI TRUNK OAK
40,944	36"	MULTI TRUNK OAK
40,945	12"/18"/10"	MULTI TRUNK OAK
40,946	24"	OAK
50,804	12"	OAK
60,127	22"	OAK
60,128	9"/10"/14"	MULTI TRUNK OAK
60,129	17"	OAK
60,130	14"/20"/12"	MULTI TRUNK OAK
60,131	22"/17"	MULTI TRUNK OAK
60,132	15"/15"/17"	MULTI TRUNK OAK
60,133	19"	OAK
60,134	10"	OAK
60,135	48"	OAK
60,136	18"	OAK
60,137	13"/15"	OAK
60,138	18"	FORKED OAK
60,139	19"	OAK
60,140	12"	OAK
60,141	14"	OAK
60,142	12"/10"/14"	MULTI TRUNK OAK
60,143	19"	FORKED OAK
60,144	11"	OAK
60,145	10"	OAK
60,146	16"	OAK
60,147	14"	OAK
60,148	13"	OAK
60,149	19"	OAK
60,150	17"	OAK
60,151	14"	OAK
60,152	13"	OAK
60,153	10"/13"/19"	MULTI TRUNK OAK
60,154	17"	OAK
60,155	26"	FORKED OAK
60,156	15"/10"/18"	MULTI TRUNK OAK
60,157	13"	OAK
60,158	18"	OAK
60,159	10"	OAK
60,160	36"	OAK
60,161	14"	OAK
60,162	11"	OAK
60,163	26"	OAK
60,164	18"	OAK
60,165	12"	FORKED OAK
60,166	21"	OAK
60,167	14"	OAK
60,168	10"/14"	MULTI TRUNK OAK
60,169	10"	OAK
60,170	10"	OAK
60,171	12"	OAK
60,172	10"	OAK
60,173	9"/10"/14"	OAK
60,174	11"/14"/13"	OAK
60,175	11"/12"/12"	OAK
60,176	13"	MULTI TRUNK OAK
60,177	12"/12"/11"	OAK
60,178	24"	PINE
60,179	14"/15"	OAK
60,180	14"/12"	OAK
60,181	16"	FORKED OAK
60,182	13"	OAK
60,183	12"	OAK
60,184	18"	OAK
60,185	15"/13"	MULTI TRUNK OAK
60,186	15"	OAK
60,187	11"	OAK
60,188	12"	OAK
60,189	10"	OAK
60,190	17"	OAK
60,191	32"	OAK
60,192	24"	OAK
60,193	17"	OAK
60,194	12"/14"	MULTI TRUNK OAK
60,195	17"	OAK
60,196	13"	OAK
60,198	10"/13"	MULTI TRUNK OAK
60,199	34"	PINE
60,201	13"/13"/10"/13"	MULTI TRUNK OAK
60,202	22"	OAK
60,203	10"/13"	OAK
60,204	13"/12"/9"	MULTI TRUNK OAK
60,205	12"	OAK
60,206	11"	OAK
60,207	10"	OAK
60,208	15"/13"/11"/10"/12"	MULTI TRUNK OAK
60,250	16"	OAK
60,251	13"	FORKED OAK
60,252	17"	OAK
60,253	14"	OAK
60,254	25"	OAK
60,255	10"/14"	MULTI TRUNK OAK
60,259	12"	OAK
60,261	10"	OAK
60,262	18"	OAK
60,264	21"	OAK
60,265	18"	OAK
60,266	13"	OAK
60,267	15"	OAK
60,268	13"	OAK
60,269	13"	OAK
60,270	13"	OAK

SHEET 4 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,271	12"	OAK
60,272	13"	OAK

SHEET 5

POINT NUMBER	TREE SIZE	TREE TYPE
40,902	24"	OAK
40,903	11"/12"/12"	MULTI TRUNK OAK
40,904	20"	MULTI TRUNK OAK
40,905	17"	OAK
40,906	16"	OAK
40,907	10"/8"	MULTI TRUNK OAK
40,908	10"/10"/10"	MULTI TRUNK OAK
40,909	10"	OAK
40,910	16"	OAK
40,911	10"/10"	MULTI TRUNK OAK
40,912	15"	OAK
40,913	14"/10"	MULTI TRUNK OAK
40,914	12"	OAK
40,915	24"/14"	MULTI TRUNK OAK
40,916	22"	OAK
40,917	10"	MULTI TRUNK OAK
40,918	12"/10"	MULTI TRUNK OAK
40,947	14"/12"	MULTI TRUNK OAK
40,948	14"	OAK
40,950	10"/9"/9"	MULTI TRUNK OAK
40,951	10"	OAK
40,952	10"/8"	MULTI TRUNK OAK
40,953	10"/8"/7"	MULTI TRUNK OAK
40,954	14"	OAK
40,955	11"	OAK
40,956	14"/16"/18"	MULTI TRUNK OAK
40,957	10"/9"/10"	MULTI TRUNK OAK
40,958	13"/17"	MULTI TRUNK OAK
40,959	17"	OAK
40,960	13"/18"	MULTI TRUNK OAK
40,961	22"	OAK
40,962	10"/10"	MULTI TRUNK OAK
40,963	11"	OAK
40,964	11"	OAK
40,965	12"/9"	MULTI TRUNK OAK
40,966	12"/8"/10"	MULTI TRUNK OAK
40,967	10"/10"/9"/8"	MULTI TRUNK OAK
40,968	20"	OAK
40,969	30"	OAK
60,000	18"	OAK
60,001	18"	OAK
60,002	12"	OAK
60,003	21"	OAK
60,004	12"/17"/18"	OAK
60,007	7"	OAK
60,008	18"	OAK
60,009	16"	OAK
60,010	24"	OAK
60,011	10"	OAK
60,012	11"	OAK
60,013	17"/13"	MULTI TRUNK OAK
60,014	30"	OAK
60,015	15"/15"	MULTI TRUNK OAK
60,016	15"	OAK
60,017	15"	OAK
60,018	25"	OAK
60,019	12"	OAK
60,020	17"	OAK
60,021	23"	OAK
60,022	10"	OAK
60,023	15"	FORKED OAK
60,024	24"	OAK
60,025	10"	OAK
60,026	12"	OAK
60,027	15"/11"	MULTI TRUNK OAK
60,028	30"	FORKED OAK
60,029	6"/7"	OAK
60,031	7"/12"	MULTI TRUNK OAK
60,033	15"	OAK
60,034	18"	OAK
60,035	18"	OAK
60,036	24"	OAK
60,037	15"	OAK
60,038	10"	OAK
60,039	15"	OAK
60,040	22"	OAK
60,041	18"	OAK
60,042	36"	OAK
60,043	15"	OAK
60,044	12"	OAK
60,045	11"	OAK
60,046	10"	OAK
60,047	12"	PINE
60,048	34"	OAK
60,049	15"	OAK
60,050	36"	PINE
60,051	26"	OAK
60,052	30"	PINE
60,053	40"	PINE
60,054	12"	OAK
60,055	28"	OAK
60,056	19"	PINE
60,057	30"	OAK
60,058	23"	OAK
60,059	11"	OAK
60,060	30"	OAK
60,061	15"	OAK
60,062	18"/12"	MULTI TRUNK OAK
60,063	8"/10"/12"	MULTI TRUNK OAK
60,064	10"	FORKED OAK
60,065	24"/24"	FORKED OAK
60,066	42"	OAK
60,067	12"	OAK
60,068	18"	OAK
60,069	19"	OAK
60,070	24"	PINE
60,071	10"	OAK
60,072	22"	PINE
60,073	46"	OAK

SHEET 5 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,074	26"	PINE
60,075	38"	PINE
60,076	28"	OAK
60,077	36"	OAK
60,078	10"	FORKED OAK
60,079	13"	FORKED OAK
60,080	14"/12"/9"	MULTI TRUNK OAK
60,081	12"/10"/9"	MULTI TRUNK OAK
60,082	28"	OAK
60,083	12"	FORKED OAK
60,084	22"	OAK
60,085	24"	PINE
60,086	13"/13"/12"/10"	MULTI TRUNK OAK
60,087	24"	PINE
60,088	11"	FORKED OAK
60,089	15"	FORKED OAK
60,090	12"/15"/10"	FORKED OAK
60,091	52"	OAK
60,092	17"	FORKED OAK
60,093	33"	OAK
60,094	44"	OAK
60,095	23"	OAK
60,096	10"	FORKED OAK
60,097	36"	PINE
60,098	12"	OAK
60,099	10"	FORKED OAK
60,100	38"	OAK
60,101	22"/18"/11"	MULTI TRUNK OAK
60,102	10"	OAK
60,103	10"	OAK
60,104	15"	OAK
60,105	21"	OAK
60,106	10"	FORKED OAK
60,107	12"	OAK
60,108	24"	OAK
60,109	24"/12"	MULTI TRUNK OAK
60,110	16"/15"	MULTI TRUNK OAK
60,111	15"	OAK
60,112	18"	OAK
60,113	13"	OAK
60,114	17"	FORKED OAK
60,116	27"	PINE
60,117	10"/10"/15"/12"	MULTI TRUNK OAK
60,118	35"	PINE
60,119	10"/12"/12"/10"	MULTI TRUNK OAK
60,120	36"	PINE
60,121	38"	PINE
60,122	13"	OAK
60,123	10"	OAK
60,124	10"/10"	MULTI TRUNK OAK
60,125	14"	OAK
60,126	14"	OAK
60,209	15"/13"/11"/10"/12"	MULTI TRUNK OAK
60,210	13"/9"/10"	MULTI TRUNK OAK
60,211	14"	OAK
60,212	12"	OAK
60,213	14"	OAK
60,214	22"	PINE
60,215	13"	OAK
60,216	13"/13"	MULTI TRUNK OAK
60,217	12"/21"	MULTI TRUNK OAK
60,218	10"/17"/11"	MULTI TRUNK OAK
60,219	12"/14"	MULTI TRUNK OAK
60,220	19"	OAK
60,221	14"/18"	MULTI TRUNK OAK
60,222	13"/18"	MULTI TRUNK OAK
60,223	14"	OAK
60,224	12"	OAK
60,225	10"	OAK
60,226	15"	OAK
60,227	13"	OAK
60,228	9"/13"	MULTI TRUNK OAK
60,229	14"	OAK
60,230	14"	OAK
60,231	13"	OAK
60,232	26"	OAK
60,233	23"	OAK
60,234	22"/19"	MULTI TRUNK OAK
60,235	42"	OAK
60,236	20"	OAK
60,237	17"	OAK
60,238	12"	OAK
60,239	14"	OAK
60,240	21"	OAK
60,242	27"	OAK
60,243	12"	PINE
60,244	12"	PINE
60,245	13"	OAK
60,246	15"	OAK
60,247	10"	PINE
60,248	30"	PINE
60,273	13"	FORKED OAK
60,274	10"	OAK
60,275	13"	OAK
60,276	10"	OAK
60,277	10"	OAK
60,278	48"	OAK
60,279	22"	PINE
60,280	15"	OAK
60,281	26"	PINE
60,282	19"	PINE
60,283	17"	OAK
60,284	12"/11"	MULTI TRUNK OAK
60,285	10"	OAK
60,286	13"	PINE
60,287	10"	OAK
60,288	10"/10"	MULTI TRUNK OAK
60,289	32"	PINE
60,290	12"	OAK
60,291	13"	FORKED OAK
60,292	13"	OAK
60,293	12"/10"	MULTI TRUNK OAK
60,294	24"	FORKED OAK
60,295	18"	FORKED OAK
60,296	17"	PINE
60,297	19"	PINE

SHEET 5 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,298	12"	OAK
60,299	13"	OAK
60,300	25"	OAK
60,301	27"	OAK
60,302	10"	OAK
60,303	15"	OAK
60,304	12"	OAK
60,305	13"	OAK
60,306	10"	OAK
60,307	11"	OAK
60,308	19"	OAK
60,309	11"	OAK
60,310	16"	OAK
60,311	18"	OAK
60,312	20"	PINE
60,313	28"	PINE
60,314	38"	OAK
60,315	30"	OAK
60,316	22"	OAK
60,317	13"	OAK
60,318	11"	OAK
60,319	10"	OAK
60,320	26"	OAK
60,321	10"	OAK
60,322	16"	PINE
60,323

SHEET 5 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,387	13"	OAK
60,388	10"	OAK
60,389	14"	OAK
60,390	11"	OAK
60,391	16"	OAK
60,392	13"	OAK
60,393	16"	OAK
60,394	14"	OAK
60,395	27"	OAK
60,396	36"	PINE
60,397	14"	OAK
60,398	12"	OAK
60,399	12"	OAK
60,400	55"	FORKED OAK
60,401	17"	OAK
60,402	18"	OAK
60,403	13"	OAK
60,404	12"	OAK
60,405	16"	OAK
60,406	34"	OAK
60,407	14"	OAK
60,408	31"	OAK
60,409	14"/15"	MULTI TRUNK OAK
60,410	11"	OAK
60,411	13"/12"	MULTI TRUNK OAK
60,412	16"	OAK
60,413	29"	OAK
60,414	25"	OAK
60,415	15"	OAK
60,416	16"	OAK
60,417	19"	OAK
60,418	23"	OAK
60,419	16"	OAK
60,420	20"	OAK
60,421	24"	OAK
60,422	14"	OAK
60,423	13"	OAK
60,424	10"	OAK
60,425	36"	OAK
60,426	11"	OAK
60,427	11"	OAK
60,428	15"	OAK
60,429	11"	OAK
60,430	44"	PINE
60,431	19"/21"	MULTI TRUNK OAK
60,432	30"	PINE
60,433	40"	OAK
60,434	13"	OAK
60,435	12"	OAK
60,436	14"	FORKED OAK
60,437	17"	FORKED OAK
60,438	17"	FORKED OAK
60,439	25"	OAK
60,440	33"	OAK
60,441	12"	OAK
60,442	22"	OAK
60,443	16"	OAK
60,444	25"	OAK
60,445	27"	OAK
60,446	17"	OAK
60,447	18"	OAK
60,448	28"	OAK
60,449	33"	OAK
60,450	21"	OAK
60,451	14"	OAK
60,452	13"/15"	MULTI TRUNK OAK
60,453	13"/11"	MULTI TRUNK OAK
60,454	15"	OAK
60,455	30"	OAK
60,456	15"	OAK
60,457	31"	OAK
60,458	14"	OAK
60,459	13"	OAK
60,460	14"	OAK
60,461	21"/25"/27"	MULTI TRUNK OAK
60,462	26"	PINE
60,463	11"	OAK
60,464	24"	PINE
60,465	16"	OAK
60,466	12"	OAK
60,467	33"	PINE
60,468	13"	OAK
60,469	12"/12"	MULTI TRUNK OAK
60,470	48"	OAK
60,471	15"	OAK
60,472	11"	OAK
60,473	13"	OAK
60,474	10"	OAK
60,475	12"	OAK
60,476	10"	OAK
60,477	18"	PINE
60,478	38"	OAK
60,479	27"	PINE
60,480	10"	OAK
60,481	12"	OAK
60,482	11"	OAK
60,483	16"/24"	MULTI TRUNK OAK
60,484	25"	PINE
60,485	17"	OAK
60,486	26"	PINE
60,498	33"	PINE
60,499	21"	PINE
60,500	18"	PINE
60,501	20"	PINE
60,502	16"	PINE

SHEET 6

POINT NUMBER	TREE SIZE	TREE TYPE
60,487	11"	PINE
60,488	30"	PINE
60,489	10"	OAK
60,490	14"	OAK
60,491	14"	PINE
60,492	26"	PINE

SHEET 6 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,493	17"	PINE
60,494	19"	PINE
60,495	11"/10"/10"	MULTI TRUNK OAK
60,496	10"	PINE
60,497	12"/11"/10"	MULTI TRUNK OAK
60,503	16"	PINE
60,504	17"	PINE
60,505	12"	FORKED OAK
60,506	13"	PINE
60,507	27"	PINE
60,508	18"	PINE
60,509	24"	PINE
60,510	16"	PINE
60,511	14"	PINE
60,512	18"	PINE
60,513	16"	OAK
60,514	30"	PINE
60,515	26"	PINE
60,516	28"	PINE
60,517	18"	OAK
60,518	13"	OAK
60,519	27"	PINE
60,520	25"	OAK
60,521	28"	PINE
60,522	24"	OAK
60,523	14"	PINE
60,524	16"	PINE
60,525	16"	OAK
60,526	10"	OAK
60,527	12"	OAK
60,528	11"	OAK
60,529	11"	PINE
60,530	30"	PINE
60,531	12"	PINE
60,532	28"	PINE
60,533	19"	PINE
60,534	22"	PINE
60,535	31"	PINE
60,536	16"	OAK
60,537	27"	PINE
60,538	11"	PINE
60,539	22"	PINE
60,540	13"	PINE
60,541	22"	PINE
60,542	17"	PINE
60,543	12"	PINE
60,544	23"	PINE
60,545	30"	PINE
60,546	21"	PINE
60,547	19"	PINE
60,548	10"	OAK
60,549	23"	PINE
60,550	25"	PINE
60,551	13"	PINE
60,552	16"	PINE
60,553	36"	PINE
60,554	29"	PINE
60,555	28"	PINE
60,556	20"	PINE
60,557	22"	PINE
60,558	14"	PINE
60,559	24"	PINE
60,560	17"	PINE
60,561	23"	PINE
60,562	14"	PINE
60,563	36"	PINE
60,564	20"	PINE
60,565	17"	PINE
60,566	15"	PINE
60,567	13"/15"/10"/11"	MULTI TRUNK OAK
60,568	26"	PINE
60,569	10"	FORKED OAK
60,570	25"	PINE
60,571	13"	OAK
60,572	14"	OAK
60,573	11"	OAK
60,574	17"	PINE
60,575	28"	PINE
60,576	19"	PINE
60,577	11"/13"/10"/12"/10"	MULTI TRUNK OAK
60,578	17"/12"	MULTI TRUNK OAK
60,579	12"	OAK
60,580	14"	PINE
60,581	19"	FORKED OAK
60,582	20"	PINE
60,583	20"	PINE
60,584	40"	PINE
60,585	17"	OAK
60,586	11"	OAK
60,587	24"	PINE
60,588	14"	PINE
60,589	12"	OAK
60,590	10"	PINE
60,591	17"	OAK
60,592	17"	PINE
60,593	15"	PINE
60,594	18"	PINE
60,595	10"	OAK
60,596	15"	PINE
60,597	24"	PINE
60,598	25"	PINE
60,599	17"	PINE
60,600	14"	PINE
60,601	15"	PINE
60,602	18"	PINE
60,603	25"	PINE
60,604	23"	PINE
60,605	16"	PINE
60,606	23"	PINE
60,607	15"	PINE
60,608	29"	PINE
60,609	13"	PINE
60,610	14"	PINE
60,611	17"	PINE
60,612	15"	PINE
60,613	11"	PINE

SHEET 6 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,614	10"	PINE
60,615	22"	PINE
60,616	13"	PINE
60,617	12"	PINE
60,618	30"	PINE
60,619	14"	PINE
60,620	20"	OAK
60,621	26"	PINE
60,622	10"	OAK
60,623	11"	PINE
60,624	17"	PINE
60,625	14"	PINE
60,626	15"	PINE
60,627	26"	PINE
60,628	25"	PINE
60,629	16"	OAK
60,630	15"/12"/10"	MULTI TRUNK OAK
60,631	31"	PINE
60,632	17"	PINE
60,633	15"	PINE
60,634	24"	PINE
60,635	10"/11"/10"	MULTI TRUNK OAK
60,636	15"	PINE
60,637	24"	PINE
60,638	18"	PINE
60,639	19"	PINE
60,640	10"	OAK
60,641	15"	FORKED OAK
60,642	15"	FORKED OAK
60,643	16"	PINE
60,644	13"	OAK
60,645	15"	PINE
60,646	12"	OAK
60,647	14"	PINE
60,648	19"	OAK
60,649	14"	PINE
60,650	18"	PINE
60,651	10"	OAK
60,652	23"	OAK
60,653	11"	PINE
60,654	12"	PINE
60,655	25"	PINE
60,656	11"	OAK
60,657	19"	PINE
60,658	14"	PINE
60,659	10"	PINE
60,660	26"	PINE
60,661	15"	PINE
60,662	25"	PINE
60,663	24"	PINE
60,664	10"/12"	FORKED PINE
60,665	11"	PINE
60,666	10"	PINE
60,667	17"	PINE
60,668	10"	PINE
60,669	13"	PINE
60,670	12"/11"	FORKED PINE
60,671	21"	PINE
60,672	25"	PINE
60,673	17"	PINE
60,674	11"	OAK
60,675	15"	PINE
60,676	11"	PINE
60,677	12"	OAK
60,678	13"/7"/7"	MULTI TRUNK OAK
60,679	10"	PINE
60,680	33"	PINE
60,681	12"	OAK
60,682	11"	PINE
60,683	14"	PINE
60,684	10"	OAK
60,685	26"	PINE
60,686	18"	PINE
60,687	10"	PINE
60,688	15"	PINE
60,689	13"	PINE
60,690	13"	PINE
60,691	14"	PINE
60,692	18"	PINE
60,693	10"	PINE
60,694	16"	PINE
60,695	11"	PINE
60,696	19"	PINE
60,697	14"	PINE
60,698	14"	PINE
60,699	18"	PINE
60,700	14"	PINE
60,701	15"	PINE
60,702	15"/14"	FORKED PINE
60,703	19"	PINE
60,704	18"	PINE
60,705	15"	PINE
60,706	10"	PINE
60,707	13"	PINE
60,708	13"	PINE
60,709	13"	OAK
60,710	10"/15"	FORKED PINE
60,711	15"	PINE
60,712	13"/15"	FORKED PINE
60,713	17"	PINE
60,714	15"	PINE
60,715	16"	PINE
60,716	21"	PINE
60,717	20"	PINE
60,718	13"	PINE
60,719	12"	PINE
60,720	13"	PINE
60,721	13"	PINE
60,722	12"	PINE
60,723	12"	PINE
60,724	14"	PINE
60,725	16"	PINE
60,726	15"	PINE
60,727	13"	PINE
60,728	13"	PINE
60,729	15"	OAK

SHEET 6 (CONT.)

POINT NUMBER	TREE SIZE	TREE TYPE
60,730	16"	OAK
60,731	13"	PINE
60,732	14"	PINE
60,733	13"	PINE
60,734	16"	PINE
60,735	12"	PINE
60,736	17"	PINE
60,737	21"	PINE
60,738	16"	PINE
60,739	18"	PINE
60,740	13"	PINE
60,741	13"	OAK
60,742	16"	PINE
60,743	10"	PINE
60,744	16"	PINE
60,745	15"	PINE
60,746	16"	PINE
60,747	11"	PINE
60,748	11"	PINE
60,749	12"	PINE
60,750	14"	PINE
60,751	14"	PINE
60,752	15"	PINE
60,753	13"	PINE
60,754	15"	PINE
60,755	12"	PINE
60,756	28"	PINE
60,757	17"	PINE
60,758	21"	PINE
60,759	13"	PINE
60,760	15"	OAK
60,761	15"	OAK
60,762	12"	OAK
60,763	14"	PINE
60,764	15"	PINE
60,765	18"	FORKED OAK
60,766	17"	PINE
60,767	22"	PINE
60,768	14"	OAK
60,769	17"	OAK
60,770	18"	PINE
60,771	16"	FORKED OAK
60,772	22"	PINE
60,773	23"	PINE
60,774	18"	OAK
60,775	18"	PINE
60,776	12"	PINE
60,777	10"/13"	MULTI TRUNK OAK
60,778	11"	PINE
60,779	19"	OAK
60,780	16"	OAK
60,781	11"	OAK
60,782	14"	OAK
60,783	18"	PINE
60,784	12"	OAK
60,785	21"	OAK
60,786	12"	PINE
60,787	17"	PINE
60,788	26"	FORKED OAK
60,789	26"	PINE
60,790	13"	OAK
60,791	25"	OAK
60,792	17"	PINE
60,793	18"	PINE
60,794	13"	OAK
60,795	14"	PINE
60,796	13"	OAK
60,797	13"	OAK

MOUNTAIN GATE AT SHASTA
TREE STUDY EXHIBIT
SURVEY DATA

PORTIONS OF SECTIONS 20, 21 & 29
T.33N.,R.4W
IN THE CITY OF SHASTA LAKE
SHASTA COUNTY,
CALIFORNIA

FOR

CITY OF SHASTA LAKE

BY

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