

**WATER POLLUTION CONTROL**

Water pollution control requirements vary by project size as follows:

1. Projects with less than 1 acre of ground disturbance

Prior to any construction activity, a water pollution control plan (WPCP) shall be submitted and approved by the City. The WPCP shall address both temporary and permanent erosion control Best Management Practices (BMPs) for storm water and non-storm water discharges associated with construction activities. Approval of the WPCP shall not relieve the Project Owner or the Contractor of any liability for violations of State or Federal law relating to water pollution. Copies of the WPCP shall be kept at the project site and it shall be available during construction.

The Project Owner and the Contractor shall know and fully comply with applicable provisions of all Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

The WPCP shall address storm water and non-storm water discharges from areas in the vicinity of the project site which are directly related to construction activities including, but not limited to, material borrow/stockpile areas, staging areas, storage yards and access roads. The Contractor shall implement, inspect, and maintain the required water pollution control practices.

The Project Owner shall be responsible for penalties assessed or levied on the Project Owner, Contractor, or the City of Shasta Lake as a result of the Contractor's failure to comply with the provisions in this section including, but not limited to, compliance with the applicable provisions of Federal, State, and local regulations and requirements as set forth therein.

Penalties as used in this section shall include fines, penalties, and damages, whether proposed, assessed, or levied against the City, Project Owner, or the Contractor, including those levied under the Federal Clean Water Act, State Fish and Wildlife Code, and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred due to stop work orders, work suspension, and/or Contractor delays or in settlement for alleged violations of applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, due to agency or City-imposed mitigation or to remediate or correct violations, or damages resulting from stop work orders or work suspension.

The Contractor shall notify the City immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor and Project Owner shall provide copies of correspondence, notices of violation, enforcement actions or proposed fines by regulatory agencies to the City.

A. Water Pollution Control Plan preparation and approval

The WPCP shall address storm water run-off and run-on for all disturbed and affected areas of construction, including temporary and permanent measures. The requirements described herein are considered minimum requirements to satisfy the City of Shasta Lake erosion control standards. All BMPs shall be designed, installed, maintained, and otherwise managed pursuant to the provisions set forth in the most current versions of either the Caltrans Stormwater Quality Handbook (latest revision), Caltrans Construction Site BMP Manual (latest revision), or the California Stormwater Quality Association (CASQA), California Stormwater BMP Handbook for Construction (latest revision). The Contractor may recommend equivalent erosion control applications that provide equal or better performance for consideration and approval by the City.

The WPCP shall be prepared by a registered civil engineer experienced in erosion control, a qualified SWPPP Developer, or a Certified Professional Erosion and Sediment Control specialist, unless otherwise approved by the City. Implementation, monitoring, and maintenance of BMPs shall be by or under the supervision of same. The WPCP should be commensurate with the size, duration, timing, location, and overall scope of the project.

The WPCP shall incorporate water pollution control practices in the following categories:

1. Soil stabilization.
2. Sediment control.
3. Wind erosion control.
4. Tracking control.
5. Non-storm water management.
6. Waste management and materials pollution control.

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WATER POLLUTION CONTROL (continued)

A. Water Pollution Control Plan preparation and approval (continued)

A water pollution control schedule shall be developed that describes the timing of grading or other work activities that could affect water pollution. The water pollution control schedule shall be updated as necessary to reflect changes in the Contractor's operations that would affect the implementation of water pollution control practices.

The Contractor shall prepare an amendment to the WPCP such as when there is a substantial change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, or storm drain systems; when there is a change in the schedule that affects the discharge of pollutants; or when directed by the City. Amendments shall identify additional water pollution control practices or revised operations, including those areas or operations not identified in the initially approved WPCP. Amendments to the WPCP shall be prepared and submitted for review and approval within the time approved by the City.

B. WPCP implementation

Unless otherwise specified, upon approval of the WPCP, the Project Owner shall be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, replacing, removing, and disposing of temporary water pollution control practices, and installing, constructing, inspecting, maintaining, and replacing permanent water pollution control practices specified in the WPCP and in the amendments.

If a deficiency is identified in the implementation of the approved WPCP or amendments, the deficiency shall be corrected immediately unless approved by the City in writing but shall be corrected prior to the onset of precipitation. If the identified deficiency is not corrected by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance and subject to penalties.

If the project does not conform to the provisions of this section, the City may order the suspension of construction operations until the project is brought into compliance with this section.

C. Year-round implementation requirements

A year-round program shall be in place for implementing, inspecting, and maintaining water pollution control practices for soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control.

The National Weather Service weather forecast ([www.weather.gov](http://www.weather.gov)) shall be monitored and used by the Contractor on a daily basis. If 50% or greater precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation. If there is less than a 50% chance of precipitation, the Contractor or owner shall still be responsible for ensuring the project site does not result in a discharge of pollutants off-site. Regardless of the chances of precipitation, the Contractor shall allow adequate time to properly install all required BMPs prior to precipitation disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur, or will occur during the ensuing 14 days. Non-active areas shall be stabilized with water pollution control practices within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

D. Maintenance

To ensure the proper implementation and functioning of water pollution control practices, all water pollution control practices identified in the WPCP shall be inspected and maintained regularly. The construction site shall be inspected as follows:

1. Prior to a forecast storm.
2. After a precipitation event which causes site runoff.
3. At 24-hour intervals during extended precipitation events.
4. Routinely, a minimum of once every two weeks.

A storm water quality construction site inspection checklist shall be used as approved by the City. One copy of each site inspection record shall be submitted to the City within 48 hours of completing the inspection.

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WATER POLLUTION CONTROL (continued)

E. Report of discharges, notices, or orders

If a discharge from the project site occurs, regardless of source, in a manner causing, or potentially causing, a condition of pollution in surface waters or drainage systems, the Contractor shall immediately inform the City. In addition, the Contractor shall submit a written Notice of Discharge report to the City within 24 hours of the discharge event. The report shall include the following information:

1. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
2. The water pollution control practices deployed before the discharge event.
3. The date of deployment and type of water pollution control practices deployed after the discharge event, including additional measures installed or planned to remediate and clean-up the discharge, and/or reduce or prevent reoccurrence.
4. An implementation and maintenance schedule for affected water pollution control practices.

F. Report of first-time non-storm water discharge

The City shall be notified at least 3 days in advance of first-time non-storm water discharge events such as pipeline dewatering and shall give approval for the discharge to the Contractor prior to the discharge starting. Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

If a written notice, order, or other non-compliance action letter is received from a regulatory agency as a result of storm water or other discharges from the project site, the City shall be notified immediately. The Project Owner and/or Contractor shall be solely responsible for responding to and complying with the notice, order, or action letter, unless otherwise directed by the City.

2. Projects with 1 acre or more of ground disturbance

Prior to any construction activity, the project applicant shall prepare, submit, and obtain approval of a storm water pollution prevention plan (SWPPP) in accordance with the NPDES General Construction Permit (latest revision) for storm water and non-storm water discharges associated with construction activities. Prior to ground disturbance, the SWPPP shall be approved by the City and a WDID number obtained from the State. Approval does not relieve the Project Owner or Contractor of any liability for violations of state or federal law relating to water pollution.

The NPDES permit that regulates this project, as referenced above, is hereafter collectively referred to as the Permit.

The project shall conform to the Permit and modifications thereto. Copies of the Permit and the SWPPP shall be kept at the project site and shall be available at all times. The Project Owner and Contractor shall know and fully comply with applicable provisions of the Permit and all modifications thereto, and Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from both the project site and areas of disturbance outside the project limits during construction.

The Permit shall apply to storm water and certain permitted non-storm water discharges from areas outside the project site which are directly related to construction activities including, but not limited to, material borrow/storage areas, staging areas, storage yards and access roads. The Contractor shall comply with the Permit for those areas and shall implement, inspect, and maintain the required water pollution control practices.

The Project Owner shall be responsible for penalties assessed or levied on the Project Owner, Contractor, or the City of Shasta Lake as a result of the Contractor's failure to comply with the provisions in this section including, but not limited to, compliance with the applicable provisions of the Permit, and Federal, State, and local regulations and requirements as set forth therein.

Penalties as used in this section shall include fines, penalties, and damages, whether proposed, assessed, or levied against the City of Shasta Lake, Project Owner, or the Contractor, including those levied under the Federal Clean Water Act, State Fish and Wildlife Code, and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred due to stop work orders, work suspension, and/or Contractor delays or in settlement for alleged violations of the permit, or applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, due to agency or City-imposed mitigation or to remediate or correct violations, or damages resulting from stop work orders, or work suspension.

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WATER POLLUTION CONTROL (continued)

2. Projects with 1 acre or more of ground disturbance (continued)

The Contractor shall notify the City immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor and Project Owner shall provide copies of correspondence, notices of violation, enforcement actions or proposed fines by regulatory agencies to the City.

A. Storm water pollution prevention plan preparation, approval, and amendments

The requirements described herein are considered minimum requirements to satisfy the City of Shasta Lake erosion control standards. No ground disturbing work shall be performed until a SWPPP has been approved by the City and a waste discharge identification number (WDID) for the project has been assigned by the State. The SWPPP submittal to the City shall contain all Permit Registration Documents (PRD) as required by the Permit, including the draft Notice of Intent (NOI), risk assessment, site map, SWPPP schedule, and signed certification statements. SWPPP approval by the City shall not constitute a finding that the SWPPP complies with applicable requirements of the Permit and applicable Federal, State, and local laws, regulations, permits, and requirements, nor does approval supercede the requirements and provisions of the Permit, or any other Federal, State, or local regulations or permit in the event of a conflict.

The SWPPP shall address storm water run-off and run-on for all disturbed and affected areas of construction, including temporary and permanent measures. The SWPPP shall identify the Qualified SWPPP Practitioner (QSP) and the Qualified SWPPP Developer (QSD) as required by the Permit. The Project Owner shall be identified as the legally responsible person (LRP).

Upon approval by the City, the Project Owner shall submit the PRD electronically to the State Water Resources Control Board website, entitled Stormwater Multi-Application Reporting and Tracking System (SMARTS). The Project Owner is also responsible for submitting the appropriate fee to the State and obtaining a certified NOI WDID for the project. No ground disturbing work shall occur until the PRD has been uploaded to the SMARTS website and a WDID has been assigned to the project.

All BMPs shall be designed, installed, maintained, and otherwise managed pursuant to the provisions set forth in the Caltrans Stormwater Quality Handbook, Construction Site BMP Manual (latest revision) or the California Stormwater Quality Association (CASQA), California Stormwater BMP Handbook for Construction (latest revision). Equivalent erosion control applications that provide equal or better performance may also be proposed for consideration and approval by the City.

The SWPPP shall incorporate water pollution control practices in the following categories:

1. Soil stabilization.
2. Sediment control.
3. Wind erosion control.
4. Tracking control.
5. Non-storm water management.
6. Waste management and materials pollution control.

A water pollution control schedule shall be developed that describes the timing of grading or other work activities that could affect water pollution. The water pollution control schedule shall be updated, as necessary, to reflect changes in the Contractor's operations that would affect implementation of water pollution control practices. Copies of all updates shall be kept with the SWPPP at the project site.

An amendment to the SWPPP shall be prepared, as required by the Permit, such as when there is a substantial change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, storm drain systems; when the Contractor's activities or operations violate a condition of the permit; when there is a change in the schedule that affects the discharge of pollutants; when there is a change in the schedule that affects the risk level required by the permit; or when directed by the City. Amendments shall identify additional water pollution control practices or revised operations, including those areas or operations not identified in the initially approved SWPPP. Amendments to the SWPPP shall be prepared and submitted for review and approval by the City within the time required by the Permit.

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WATER POLLUTION CONTROL (continued)

2. Projects with 1 acre or more of ground disturbance (continued)

B. SWPPP implementation

Unless otherwise specified, upon approval of the SWPPP, the Project Owner will be responsible throughout the duration of the project for installing, constructing, inspecting, maintaining, replacing, removing, and disposing of temporary water pollution control practices, and installing, constructing, inspecting, maintaining, and replacing permanent water pollution control practices specified in the SWPPP and in the amendments. All documentation, inspections, and reports, including the annual report, shall be the responsibility of the Project Owner.

If a deficiency is identified in the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the Contractor and approved by the City in writing but shall be corrected prior to the onset of precipitation. If the identified deficiency is not corrected by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance with this section and subject to penalties.

If the project does not conform to the provisions of this section, the City may order the suspension of construction operations until the project is brought into compliance with this section.

C. Year-round implementation requirements

A year-round program shall be in place for implementing, inspecting and maintaining water pollution control practices for soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, and waste management and materials pollution control.

The National Weather Service weather forecast ([www.weather.gov](http://www.weather.gov)) shall be monitored and used by the Contractor on a daily basis. These standards require that if 50% or greater precipitation is predicted, the necessary water pollution control practices shall be deployed prior to the onset of the precipitation. If there is less than a 50% chance of precipitation, the Contractor or owner shall still be responsible for ensuring the project site does not result in a discharge of pollutants off-site. Regardless of the chances of precipitation, the Contractor shall allow adequate time to properly install all required BMPs prior to precipitation.

Disturbed soil areas shall be considered active whenever the soil disturbing activities have occurred, continue to occur, or will occur during the ensuing 14 days. Non-active areas shall be stabilized with water pollution control practices within 14 days of cessation of soil disturbing activities or prior to the onset of precipitation, whichever occurs first.

D. Maintenance

To ensure the proper implementation and function of water pollution control practices, all BMPs shall be inspected and maintained regularly. The construction site shall be inspected as follows:

1. Prior to a forecast storm.
2. After a precipitation event which causes site runoff.
3. At 24 hour intervals during extended precipitation events.
4. Routinely, a minimum of once every week.
5. Quarterly, as required by the permit.

A storm water quality construction site inspection checklist shall be used as approved by the City. One copy of each site inspection record shall be submitted to the City within 48 hours of completing the inspection.

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WATER POLLUTION CONTROL (continued)

2. Projects with 1 acre or more of ground disturbance (continued)

E. Report of discharges, notices, or orders

If discharges from the project site are identified, regardless of source, in a manner causing, or potentially causing, a condition of pollution in surface waters or drainage systems, the Contractor shall immediately inform the City. In addition, the Contractor shall submit a written notice of discharge report to the City within 24 hours of the discharge event. The report shall include the following information:

1. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
2. The water pollution control practices deployed before the discharge event.
3. The date of deployment and type of water pollution control practices deployed after the discharge event, including additional measures installed or planned to remediate and clean-up the discharge, and/or reduce or prevent reoccurrence.
4. An implementation and maintenance schedule for affected water pollution control practices.

F. Report of first -time non-storm water discharge

The City shall be notified at least 3 days in advance of first-time non-storm water discharge events such as pipeline dewatering and shall give approval for the discharge to the Contractor prior to the discharge starting. Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

If a written notice, order, or other non-compliance action letter from a regulatory agency is received as a result of storm water or other discharges from the project site, the City shall be notified immediately. The Project Owner and/or Contractor shall be solely responsible for responding to and complying with the notice, order, or action letter, unless otherwise directed by the City.

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## EROSION CONTROL

Erosion control consists of applying erosion control materials to the areas shown on the Plans, embankment, excavation slopes and other areas disturbed by construction activities, and as shown on the Water Pollution Control Plan or the SWPPP.

Erosion control shall be placed between September 1 and March 15. Areas completed and ready for application of erosion control outside of these dates shall be temporarily stabilized until the acceptable window begins, or as directed by the City. Areas may be temporarily stabilized using soil binders, temporary seed and straw, or just straw, or as approved by the City. Prior to application of permanent seed, areas temporarily stabilized using soil binders shall be scarified by track walking or other means to break up crusted soils. If areas were temporarily stabilized using seed and/or straw, any thick vegetation and straw shall be removed or incorporated into the soil as necessary to allow proper and effective application of permanent seed and mulch.

Erosion control materials shall consist of seed, fertilizer, straw, fiber, and stabilizing emulsion.

### 1. Seed

Seed for erosion control work shall consist of the following:

A. Temporary - Seed for temporary erosion control work shall consist of the following mix:

<u>Species</u>	<u>Lbs. PLS per Acre</u>
Hordeum Vulgare	250

B. Permanent - Seed for permanent erosion control work shall consist of the following mix:

<u>Species</u>	<u>Lbs. PLS per Acre</u>
Achillea Millefolium	2
Bromus Carinatus	15
Eschscholzia Californica	3
Trifolium Willdenovii	5
Vuplia Microstachys	5
<u>Hordeum Vulgare</u>	<u>100</u>
Total	130

Seed is required to be labeled under the California Food and Agricultural Code and shall be labeled by the vendors supplying the seed. Seed shall have been tested for purity and germination not more than 12 months prior to the application of the seed. Seed labels furnished by the vendors shall indicate the purity, germination, and pure live seed (PLS) as determined by testing. Results from testing the seed for purity and germination shall be furnished to the City prior to applying seed. Seed shall be delivered to the job site in unopened separate containers with the seed tag attached. Containers without a seed tag will not be accepted.

### 2. Fertilizer

Fertilizer shall consist of a natural based product with a slow release formulation of 7-2-3 (N-P-K), 10 percent sulfur is optional, or as approved by the City. Fertilizer for erosion control work shall conform to the requirements of the California Food and Agricultural Code, shall be in pelleted or granular form for hydroseeding, and shall have a minimum guaranteed chemical analysis of 7 percent nitrogen, 2 percent phosphoric acid, 3 percent water soluble potash, and 10 percent sulfur. Fertilizer shall be a formulation suitable for hydroseeding purposes and soluble in water.

### 3. Straw

Straw for erosion control work shall be sterile upland straw, dry oat, wheat, or rice straw, free from weeds and foreign matter detrimental to plant life. Evidence shall be furnished that clearance has been obtained from the Shasta County Agricultural Commissioner, as required by law, before straw obtained from outside Shasta County is delivered to the worksite. Straw that has been used for stable bedding shall not be

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EROSION CONTROL (continued)

4. Fiber

Fiber shall be wood fiber, cellulose fiber, alternate fiber, or a combination of these fibers. Wood fiber shall be a long strand, whole wood fiber thermomechanically processed from clean whole wood chips. Cellulose fiber shall be made from natural or recycled pulp fiber, such as wood chips, sawdust, newsprint, chipboard, corrugated cardboard, or a combination of these materials. Alternate fiber must be a long strand, whole natural fiber made from clean straw, cotton, corn, or other natural feed stock.

Fiber shall :

- A. Disperse into a uniform slurry when mixed with water.
- B. Contain 3/8" fiber strands for at least 25% by total volume.
- C. Have at least 40 percent retained when passed through a No. 25 sieve.
- D. Have an initial moisture content of no more than 15% of its dry weight when tested under CA Test 226. The moisture content must be marked on the packaging.
- E. Have a water holding capacity, by weight, of at least 1,200% when tested under ASTM D7367.
- F. Be nontoxic to plants and animal life.
- G. Be free of synthetic or plastic materials, lead paint, printing ink, varnish, petroleum products, seed germination inhibitors, and chlorine bleach.
- H. Contain less than 250 ppm of boron.
- I. Be colored to contrast with the area on which the fiber is to be applied. The coloring agent shall be biodegradable, nontoxic, and free from copper, mercury, and arsenic and must not stain concrete or painted surfaces.

Fiber for temporary hydraulic mulch must be at least 50 percent wood fiber. The remaining percentage must be cellulose fiber, alternate fiber, or a combination.

5. Tackifier

Tackifier shall be free from growth or germination inhibiting factors, nonflammable, nontoxic to aquatic organisms, and functional for a minimum of 180 days.

General purpose tackifier may be either a plant-based product or a polymeric emulsion blend as follows:

- A. Plant based tackifier must be a natural high molecular weight polysaccharide, a high viscosity hydrocolloid that is miscible in water, and labeled as either guar, psyllium, or starch, as follows:
  - 1. Guar gum based product must be derived from the ground endosperm of the guar plant, cyanmopsis tetragonolobus. It must be treated with dispersing agents for easy mixing. It must be able to be diluted at the rate of 1 to 5 pounds per 100 gallons of water.
  - 2. Psyllium based product must be manufactured from the finely ground, muciloid coating of plantago ovata or plantago ispaghula seeds and able to dry and form a firm but rewettable membrane.
  - 3. Starch based product must be a nonionic, water-soluble, granular material derived from corn, potato, or other plant -based source.
- B. Polymeric emulsion blend tackifier must be a prepackaged liquid or dry powder, anionic formulation with a residual monomer content not exceeding 0.05 percent by weight. The tackifier must contain and be labeled with one of the following as the primary active ingredients:
  - 1. Acrylic copolymers and polymers.
  - 2. Polymers of methacrylates and acrylates.
  - 3. Copolymers of sodium acrylates and acrylamides.
  - 4. Polyacrylamide and copolymer of acrylamide.
  - 5. Hydrocolloid polymers.

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SEQUENCE OF APPLICATION

Erosion control materials shall be applied in separate applications in the following sequence:

1. The following seed and fertilizer mixture shall be applied with hydro-seeding equipment within 30 minutes after the seed has been added to the mixture:

<u>Material</u>	<u>Temp. Lbs.per Acre (Min.)</u>	<u>Perm Lbs. per Acre (Min.)</u>
Seed	250	130
Commercial Fertilizer	600	600
Fiber	200	200

2. Straw shall be applied at the rate of 2 tons per acre, or 2.5 tons per acre for slopes greater than or equal to 4% slope. Straw shall be distributed evenly without clumping or piling. When weather conditions are suitable straw may be pneumatically spread.

3. The following mixture in the rates indicated shall be applied with hydro-seeding equipment:

<u>Material</u>	<u>Temp. Lbs.per Acre (Min.)</u>	<u>Perm Lbs. per Acre (Min.)</u>
Fiber	500	500
Tackifier	150	150

The ratio of total water to total tackifier in the mixture shall be as recommended by the manufacturer.

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