APPENDIX A1
Construction Stormwater Pollution Prevention Planning

This appendix provides an overview of the important components of, and the process for, developing and implementing a Construction Stormwater Pollution Prevention Plan (CSWPPP), consistent with Chapter 3 of Volume II of the Washington State Department of Ecology Stormwater Management Manual for Western Washington

This chapter provides an overview of the important components of, and the process for, developing and implementing a Construction Stormwater Pollution Prevention Plan (CSWPPP).

Section 3.1 contains general guidelines with which site planners should become familiar. It describes criteria for plan format and content and ideas for improved plan effectiveness.

Section 3.2 outlines and describes a recommended step-by-step procedure for developing a CSWPPP from data collection to finished product. This procedure is written in general terms to be applicable to all types of projects.

Section 3.3 includes a worksheet for developing a CSWPPP.

Design standards and specifications for Best Management Practices (BMPs) referred to in this chapter are found in Chapter 4.

The CSWPPP may be a subset of the Stormwater Site Plan or construction plan set. Full details on how to integrate the CSWPPP with a Stormwater Site Plan are provided in Volume 1.

3.1 General Guidelines

3.1.1 What is a Construction Stormwater Pollution Prevention Plan?

The CSWPPP is a document that describes the potential for pollution problems on a construction project. The CSWPPP explains and illustrates the measures to be taken on the construction site to control those problems. A CSWPPP for projects that add or replace 2,000 square feet or more of impervious surface or clear more than 7,000 square feet must have a narrative as well as drawings and details. The City of Bellevue must review these CSWPPPs. The City of Bellevue allows single-family home construction projects to prepare a simpler CSWPPP, consisting of a checklist (short form) and a plot plan.

While it is a good idea to include standards and specifications from the CSWPPP in the contract documents, the CSWPPP should be a separate document that can stand alone. The CSWPPP must be located on the construction site or within reasonable access to the site for construction and inspection personnel, although a copy of the drawings must be kept on the construction site at all times.

As site work progresses, the plan must be modified to reflect changing site conditions, subject to the rules for plan modification by the City.

The owner or lessee of the land being developed has the responsibility for CSWPPP preparation and submission to local authorities. The owner or lessee may designate someone (i.e., an engineer, architect, contractor, etc.) to prepare the CSWPPP, but he/she retains the ultimate responsibility.

3.1.2 What is an Adequate Plan?

The CSWPPP for projects adding or replacing 2,000 square feet of impervious surface or more or clearing 7,000 square feet or more must contain sufficient information to satisfy the Clearing and Grading Reviewer that the problems of pollution have been adequately addressed for the proposed project. An adequate

CSWPPP includes a narrative and drawings. The narrative is a written statement to explain and justify the pollution prevention decisions made for a particular project. The narrative contains concise information about existing site conditions, construction schedules, and other pertinent items that are not contained on the drawings. The drawings and notes describe where and when the various BMPs should be installed, the performance the BMPs are expected to achieve, and actions to be taken if the performance goals are not achieved.

On construction sites that discharge to surface water, the primary concern in the preparation of the CSWPPP is compliance with Washington State Water Quality Standards. Each of the 12 elements must be included in the CSWPPP unless an element is determined not to be applicable to the project and the exemption is justified in the narrative. The step–by-step procedure outlined in Section 3.2 of this volume is recommended for the development of the CSWPPPs. The worksheet in Section 3.3 may be helpful in preparing the CSWPPP.

On construction sites that infiltrate all stormwater runoff, the primary concern in the preparation of the CSWPPP is the protection of the infiltration facilities from fine sediments during the construction phase and protection of ground water from other pollutants. Several of the other elements are very important at these sites as well, such as marking the clearing limits, establishing the construction access, and managing the project.

3.1.3 BMP Standards and Specifications

Chapter 4 contains standards and specifications for the BMPs referred to in this Chapter. Wherever any of these BMPs are to be employed on a site, the specific title and number of the BMP should be clearly referenced in the narrative and marked on the drawings.

The standards and specifications in Chapter 4 of this volume are not intended to limit any innovative or creative effort to effectively control erosion and sedimentation. In those instances where appropriate BMPs are not in this chapter, experimental management practices can be considered. Minor modifications to standard practices may also be employed. However, such practices must be approved by the Clearing and Grading Reviewer before they may be used. All experimental management practices and modified standard practices are required to achieve the same or better performance than the BMPs listed in Chapter 4.

3.1.4 General Principles

The following general principles should be applied to the development of the CSWPPP.

- The duff layer, native topsoil, and natural vegetation should be retained in an undisturbed state to the maximum extent practicable.
- Prevent pollutant release. Select source control BMPs as a first line of defense. Prevent erosion rather than treat turbid runoff.
- Select BMPs depending on site characteristics (topography, drainage, soil type, ground cover, and critical areas) and the construction plan.

- Divert runoff away from exposed areas wherever possible. Keep clean water clean.
- Limit the extent of clearing operations and phase construction operations.
- Before reseeding a disturbed soil area, amend all soils with compost wherever topsoil has been removed.
- Incorporate natural drainage features whenever possible, using adequate buffers and protecting areas where flow enters the drainage system.
- Minimize slope length and steepness.
- Reduce runoff velocities to prevent channel erosion.
- Prevent the tracking of sediment off-site.
- Select appropriate BMPs for the control of pollutants other than sediment.
- Be realistic about the limitations of controls that you specify and the operation and maintenance of those controls. Anticipate what can go wrong, how you can prevent it from happening, and what will need to be done to fix it.

3.2 Step-By-Step Procedure

There are three basic steps in producing a CSWPPP:

Step 1 – Data Collection
Step 2 – Data Analysis
Step 3 - CSWPPP Development and Implementation

Steps 1 and 2 described below are intended for projects that are adding or replacing 2,000 square feet or more of impervious surface, or clearing 7,000 square feet or more. The City of Bellevue allows projects clearing less than 7,000 square feet to prepare a simpler CSWPPP, consisting of a checklist (short form) and a plot plan.

3.2.1 Step 1 - Data Collection

Evaluate existing site conditions and gather information that will help develop the most effective CSWPPP. The information gathered should be explained in the narrative and shown on the drawings.

Topography: Prepare a topographic drawing of the site to show the existing contour elevations at intervals of 1 to 5 feet depending upon the slope of the terrain.

Drainage: - Locate and clearly mark existing drainage swales and patterns on the drawing, including existing storm drain pipe systems.

Soils: Identify and label soil type(s) and erodibility (low, medium, high or an index value from the NRCS manual) on the drawing. Soils information can be obtained from a soil survey if one has been published for the

county. If a soil survey is not available, a request can be made to a district Natural Resource Conservation Service Office.

Soils must be characterized for permeability, percent organic matter, and effective depth by a qualified soil professional or engineer. These qualities should be expressed in averaged or nominal terms for the subject site or project. This information is frequently available in published literature. For example, the 1983 Soil Survey of Snohomish County lists the following information for each soil mapping unit or designation (e.g., a Sultan silt loam):

- a sieve analysis of the soils
- permeability (in/hr)
- available water-holding capacity (in/in)
- the percent of organic matter

This information is typical for many published SCS soil surveys in Washington State.

Ground Cover: Label existing vegetation on the drawing. Such features as tree clusters, grassy areas, and unique or sensitive vegetation should be shown. Unique vegetation may include existing trees above a given diameter. Local requirements regarding tree preservation should be investigated. In addition, existing denuded or exposed soil areas should be indicated.

Critical Areas: Delineate critical areas adjacent to or within the site on the drawing. Such features as steep slopes, streams, floodplains, lakes, wetlands, sole source aquifers, and geologic hazard areas, etc., should be shown. Delineate setbacks and buffer limits for these features on the drawings. Other related jurisdictional boundaries such as Shorelines Management and the Federal Emergency Management Agency (FEMA) base floodplain should also be shown on the drawings.

Adjacent Areas: Identify existing buildings, roads, and facilities adjacent to or within the project site on the drawings. Identify existing and proposed utility locations, construction clearing limits and erosion and sediment control BMPs on the drawings.

Existing Encumbrances: Identify wells, existing and abandoned septic drainfield, utilities, and site constraints.

Precipitation Records: Determine the average monthly rainfall and rainfall intensity for the required design storm events. These records may be available from the City.

3.2.2 Step 2 - Data Analysis

Consider the data collected in Step 1 to visualize potential problems and limitations of the site. Determine those areas that have critical erosion hazards. The following are some important factors to consider in data analysis:

Topography: The primary topographic considerations are slope steepness and slope length. Because of the effect of runoff, the longer and steeper the slope, the greater the erosion potential. Erosion potential should be determined by a qualified engineer, soil professional, or certified erosion control specialist.

Drainage: Natural drainage patterns that consist of overland flow, swales and depressions should be used to convey runoff through the site to avoid constructing an artificial drainage system. Man-made ditches and waterways will become part of the erosion problem if they are not properly stabilized. Care should also be taken to ensure that increased runoff from the site will not erode or flood the existing natural drainage system. Possible sites for temporary stormwater retention and detention should be considered at this point.

Construction should be directed away from areas of saturated soil - areas where ground water may be encountered - and critical areas where drainage will concentrate. Preserve natural drainage patterns on the site.

Soils: Evaluate soil properties such as surface and subsurface runoff characteristics, depth to impermeable layer, depth to seasonal ground water table, permeability, shrink-swell potential, texture, settleability, and erodibility. Develop the CSWPPP based on known soil characteristics. Infiltration sites should be properly protected from clay and silt which will reduce infiltration capacities.

Ground Cover: Ground cover is the most important factor in terms of preventing erosion. Existing vegetation that can be saved will prevent erosion better than constructed BMPs. Trees and other vegetation protect the soil structure. If the existing vegetation cannot be saved, consider such practices as phasing construction, temporary seeding, and mulching. Phasing of construction involves stabilizing one part of the site before disturbing another. In this way, the entire site is not disturbed at once.

Critical Areas: Critical areas may include flood hazard areas, mine hazard areas, slide hazard areas, sole source aquifers, wetlands, streambanks, fish-bearing streams, and other water bodies. Any critical areas within or adjacent to the development should exert a strong influence on land development decisions. Critical areas and their buffers shall be delineated on the drawings and clearly flagged in the field. Chain link fencing may be more useful than flagging to assure that equipment operators stay out of critical areas. Only unavoidable work should take place within critical areas and their buffers. Such unavoidable work will require special BMPs, permit restrictions, and mitigation plans.

Adjacent Areas: An analysis of adjacent properties should focus on areas upslope and downslope from the construction project. Water bodies that will receive direct runoff from the site are a major concern. The types, values, and sensitivities of and risks to downstream resources, such as private property, stormwater facilities, public infrastructure, or aquatic systems, should be evaluated. Erosion and sediment controls should be selected accordingly.

Precipitation Records: Refer to Volume III to determine the required rainfall records and the method of analysis for design of BMPs.

Timing of the Project: An important consideration in selecting BMPs is the timing and duration of the project. Projects that will proceed during the wet season and projects that will last through several seasons must take all necessary precautions to remain in compliance with the water quality standards.

3.2.3 Step 3 - CSWPPP Development and Implementation

After collecting and analyzing the data to determine the site limitations, the planner can then develop a CSWPPP. Each of the 12 elements below must be considered and included in the CSWPPP unless site conditions render the element unnecessary and the exemption from that element is clearly justified in the narrative of the CSWPPP.

Element #1: Mark Clearing Limits

- Prior to beginning land disturbing activities, including clearing and grading, clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area. These shall be clearly marked, both in the field and on the plans, to prevent damage and offsite impacts.
- Plastic, metal, or stake wire fence may be used to mark the clearing limits.
- The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum extent practicable. If it is not practicable to retain the duff layer in place, it should be stockpiled on-site, covered to prevent erosion, and replaced immediately upon completion of the ground disturbing activities.
- Suggested BMPs
  BMP C101: Preserving Natural Vegetation
  BMP C102: Buffer Zones
  BMP C103: High Visibility Plastic or Metal Fence
  BMP C104: Stake and Wire Fence

Element #2: Establish Construction Access

- Construction vehicle access and exit shall be limited to one route, if possible, or two for linear projects such as roadways where more than one access is necessary for large equipment maneuvering.
- Access points shall be stabilized with a pad of quarry spalls or crushed rock prior to traffic leaving the construction site to minimize the tracking of sediment onto public roads.
- Wheel wash or tire baths should be located on site, if applicable.
- If sediment is tracked off site, public roads shall be cleaned thoroughly at the end of each day, or more frequently during wet weather, if necessary to prevent sediment from entering waters of the state. Sediment shall be removed from roads by shoveling or pickup

sweeping and shall be transported to a controlled sediment disposal area. Street washing will be allowed only after sediment is removed in this manner.

- Street wash wastewater shall be controlled by pumping back on site or otherwise be prevented from discharging into systems tributary to state surface waters.
- Suggested BMPs
  BMP C105: Stabilized Construction Entrance
  BMP C106: Wheel Wash
  BMP C107: Construction Road/Parking Area Stabilization

Element #3: Control Flow Rates

- Properties and waterways downstream from development sites shall be protected from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site, as required by local plan approval authority.
- Downstream analysis is necessary if changes in offsite flows could impair or alter conveyance systems, streambanks, bed sediment, or aquatic habitat. See Chapter 3 for offsite analysis guidelines.
- Where necessary to comply with Minimum Requirement #7, stormwater retention/detention facilities shall be constructed as one of the first steps in grading. Detention facilities shall be functional prior to construction of site improvements (e.g. impervious surfaces).
- The local permitting agency may require pond designs that provide additional or different stormwater flow control if necessary to address local conditions or to protect properties and waterways downstream from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site.
- If permanent infiltration ponds are used for flow control during construction, these facilities should be protected from siltation during the construction phase.
- Suggested BMPs
  BMP C240: Sediment Trap
  BMP C241: Temporary Sediment Pond
  Refer to Volume 3, Detention Facilities, Infiltration Stormwater Quantity and Flow Control

Element #4: Install Sediment Controls

- Prior to leaving a construction site or prior to discharge to an infiltration facility, stormwater runoff from disturbed areas shall pass through a sediment pond or other appropriate sediment removal BMP. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of Element #3, bullet #1. Full stabilization means concrete or asphalt paving; quarry spalls used as ditch lining; or the use of rolled erosion products, a bonded fiber matrix product, or vegetative cover in

a manner that will fully prevent soil erosion. The Bellevue Clearing and Grading Inspector shall inspect and approve areas fully stabilized by means other than pavement or quarry spalls.

- Sediment ponds, vegetated buffer strips, sediment barriers or filters, dikes, and other BMPs intended to trap sediment on site shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.
- Earthen structures such as dams, dikes, and diversions shall be seeded and mulched according to the timing indicated in Element #5.
- BMPs intended to trap sediment on site must be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages, often during non-storm events, in response to rain event changes in stream elevation or wetted area.
- Suggested BMPs
  BMP C230: Straw Bale Barrier
  BMP C231: Brush Barrier
  BMP C232: Gravel Filter Berm
  BMP C233: Silt Fence
  BMP C234: Vegetated Strip
  BMP C235: Straw Wattles
  BMP C240: Sediment Trap
  BMP C241: Temporary Sediment Pond
  BMP C250: Construction Stormwater Chemical Treatment
  BMP C251: Construction Stormwater Filtration

Element #5: Stabilize Soils

- All exposed and unworked soils shall be stabilized by application of effective BMPs that protect the soil from the erosive forces of raindrop impact, flowing water, and wind.
- From October 1 through April 30, no soils shall remain exposed and unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days. This condition applies to all soils on site, whether at final grade or not. These time limits may be adjusted by the City if it can be shown that the average time between storm events justifies a different standard.
- Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.
- Applicable practices include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylamide (PAM), the early application of gravel base on areas to be paved, and dust control.
- Soil stabilization measures should be appropriate for the time of year, site conditions, estimated duration of use, and potential water quality impacts that stabilization agents may have on downstream waters or ground water.

- Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures, and when possible, be located away from storm drain inlets, waterways and drainage channels.
- Linear construction activities, including right-of-way and easement clearing, roadway development, pipelines, and trenching for utilities, shall be conducted to meet the soil stabilization requirement. Contractors shall install the bedding materials, roadbeds, structures, pipelines, or utilities and re-stabilize the disturbed soils so that:
  - from October 1 through April 30 no soils shall remain exposed and unworked for more than 2 days and
  - from May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days.
- Suggested BMPs
  BMP C120: Temporary and Permanent Seeding
  BMP C121: Mulching
  BMP C122: Nets and Blankets
  BMP C123: Plastic Covering
  BMP C124: Sodding
  BMP C125: Topsoiling
  BMP C126: Polyacrylamide for Soil Erosion Protection
  BMP C130: Surface Roughening
  BMP C131: Gradient Terraces
  BMP C140: Dust Control
  BMP C180: Small Project Construction Stormwater Pollution Prevention

Element #6: Protect Slopes

- Design and construct cut and fill slopes in a manner that will minimize erosion.
- Consider soil type and its potential for erosion.
- Reduce slope runoff velocities by reducing continuous length of slope with terracing and diversions, reduce slope steepness, and roughen slope surface.
- Off-site stormwater (run-on) shall be diverted away from slopes and disturbed areas with interceptor dikes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.
- At the top of slopes, collect drainage in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains shall handle the peak flow from a 10 year, 24 hour event assuming a Type 1A rainfall distribution. Alternatively, the 10-year and 25-year, 1-hour flow rates indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. Consult the local drainage requirements for sizing permanent pipe slope drains.
- Provide drainage to remove ground water intersecting the slope surface of exposed soil areas.

- Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.
- Check dams shall be placed at regular intervals within channels that are cut down a slope.
- Stabilize soils on slopes, as specified in Element #5.
- Suggested BMPs
  BMP C120: Temporary and Permanent Seeding
  BMP C130: Surface Roughening
  BMP C131: Gradient Terraces
  BMP C200: Interceptor Dike and Swale
  BMP C201: Grass-Lined Channels
  BMP C204: Pipe Slope Drains
  BMP C205: Subsurface Drains
  BMP C206: Level Spreader
  BMP C207: Check Dams
  BMP C208: Triangular Silt Dike (Geotextile-Encased Check Dam)

Element #7: Protect Drain Inlets

- All storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being filtered or treated to remove sediment.
- All approach roads shall be kept clean. Sediment and street wash water shall not be allowed to enter storm drains without prior and adequate treatment unless treatment is provided before the storm drain discharges to waters of the state.
- Inlets should be inspected weekly at a minimum and daily during storm events. Inlet protection devices should be cleaned or removed and replaced when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer).
- Suggested BMPs
  BMP C220: Storm Drain Inlet Protection

Element #8: Stabilize Channels and Outlets

- All temporary on-site conveyance channels shall be designed, constructed and stabilized to prevent erosion from the expected peak 10 minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used.
- Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent streambanks, slopes, and downstream reaches shall be provided at the outlets of all conveyance systems.
- Suggested BMPs
  BMP C202: Channel Lining

BMP C209: Outlet Protection

Element #9: Control Pollutants

- All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Woody debris may be chopped and spread on site.
- Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and non-inert wastes present on the site (see Chapter 173-304 WAC for the definition of inert waste). On-site fueling tanks shall include secondary containment.
- Maintenance and repair of heavy equipment and vehicles involving oil changes, hydraulic system drain down, solvent and de-greasing cleaning operations, fuel tank drain down and removal, and other activities which may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident. Emergency repairs may be performed on-site using temporary plastic placed beneath and, if raining, over the vehicle.
- Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer.
- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application rates and procedures shall be followed.
- BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. These sources include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters. Stormwater discharges shall not cause or contribute to a violation of the water quality standard for pH in the receiving water.
- Construction sites with significant concrete work shall adjust the pH of stormwater if necessary to prevent violations of water quality standards.
- Suggested BMPs
  BMP C151: Concrete Handling
  BMP C152: Sawcutting and Surfacing Pollution Prevention
  See Volume IV – Source Control BMPs

Element #10: Control De-Watering

- Foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond. Channels must be stabilized, as specified in Element #8.
- Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to state surface waters, as specified in Element #8, provided the de-watering flow does not cause erosion or flooding of receiving waters. These clean waters should not be routed through stormwater sediment ponds.
- Highly turbid or contaminated dewatering water from construction equipment operation, clamshell digging, concrete tremie pour, or work inside a cofferdam, shall be handled separately from stormwater.
- Other disposal options, depending on site constraints, may include:

  1. infiltration
  2. transport offsite in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute state waters,
  3. Ecology-approved on-site chemical treatment or other suitable treatment technologies,
  4. sanitary sewer discharge with local sewer district approval, if there is no other option, or
  5. use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized dewatering.

Element #11: Maintain BMPs

- All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with BMP specifications.
- All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

Element #12: Manage the Project

- Phasing of Construction.

  Development projects shall be phased where feasible in order to prevent soil erosion and, to the maximum extent practicable, the transport of sediment from the site during construction. Revegetation

of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase.

Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g., subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling. When establishing these permitted clearing and grading areas, consideration should be given to minimizing removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, shall be delineated on the site plans and the development site.

- Seasonal Work Limitations

  From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the City that silt-laden runoff will be prevented from leaving the site through a combination of the following:

  1. Site conditions including existing vegetative coverage, slope, soil type, and proximity to receiving waters; and
  2. Limitations on activities and the extent of disturbed areas; and
  3. Proposed erosion and sediment control measures.

  Based on the information provided and/or local weather conditions, the City may expand or restrict the seasonal limitation on site disturbance. The City shall take enforcement action - such as a notice of violation, administrative order, penalty, or stop-work order under the following circumstances:

  – If, during the course of any construction activity or soil disturbance during the seasonal limitation period, sediment leaves the construction site causing a violation of the surface water quality standard; or

  – If clearing and grading limits or erosion and sediment control measures shown in the approved plan are not maintained.

  The following activities are exempt from the seasonal clearing and grading limitations:

  1. Routine maintenance and necessary repair of erosion and sediment control BMPs;
  2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and
  3. Activities where there is one hundred percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

- Coordination with Utilities and Other Contractors

  The primary project proponent shall evaluate, with input from utilities and other contractors, the stormwater management requirements for the entire project, including the utilities, when preparing the CSWPPP.

- Inspection and Monitoring

  All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted a person who is knowledgeable in the principles and practices of erosion and sediment control. The person must have the skills to 1) assess the site conditions and construction activities that could impact the quality of stormwater, and 2) assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

  For construction sites one acre or larger that discharge stormwater to surface waters of the state, a Certified Erosion and Sediment Control Specialist shall be identified in the CSWPPP and shall be on-site or on-call at all times. Certification may be obtained through an approved training program that meets the erosion and sediment control training standards established by Ecology.

  Whenever inspection and/or monitoring reveals that the BMPs identified in the CSWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible.

- Maintaining an Updated CSWPPP

  The CSWPPP shall be retained on-site or within reasonable access to the site.

  The SWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the state.

  The SWPPP shall be modified if, during inspections or investigations conducted by the owner/operator, or the applicable local or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.

3.3 CSWPPP Requirements

The CSWPPP shall consist of two parts: a narrative and the drawings. The following two sections describe the contents of the narrative and the drawings. A

worksheet is included that can be used to assure that to verify all the major items are included in the CSWPPP.

3.3.1 Narrative

- Twelve (12) Elements – Describe how the CSWPPP addresses each of the 12 required elements. Include the type and location of BMPs used to satisfy the required element. If an element is not applicable to a project, provide a written justification for why it is not necessary.

- Project description - Describe the nature and purpose of the construction project. Include the total size of the area, any increase in existing impervious area; the total area expected to be disturbed by clearing, grading, excavation or other construction activities, including off-site borrow and fill areas; and the volumes of grading cut and fill that are proposed.
- Existing site conditions - Describe the existing topography, vegetation, and drainage. Include a description of any structures or development on the parcel including the area of existing impervious surfaces.
- Adjacent areas - Describe adjacent areas, including streams, lakes, wetlands, residential areas, and roads that might be affected by the construction project. Provide a description of the downstream drainage leading from the site to the receiving body of water.
- Critical areas - Describe areas on or adjacent to the site that are classified as critical areas. Critical areas that receive runoff from the site shall be described up to ¼ mile away. The distance may be increased by the Plan Approval Authority. Describe special requirements for working near or within these areas.
- Soil - Describe the soil on the site, giving such information as soil names, mapping unit, erodibility, settleability, permeability, depth, texture, and soil structure.
- Potential erosion problem areas - Describe areas on the site that have potential erosion problems.
- Construction phasing - Describe the intended sequence and timing of construction activities any proposed construction phasing.
- Construction schedule - Describe the construction schedule. If the schedule extends into the wet season, describe what activities will continue during the wet season and how the transport of sediment from the construction site to receiving waters will be prevented.
- Financial/ownership responsibilities - Describe ownership and obligations for the project. Include bond forms and other evidence of financial responsibility for environmental liabilities associated with construction.
- Engineering calculations – Attach any calculations made for the design of such items as sediment ponds, diversions, and waterways, as well as calculations for runoff and stormwater detention design (if applicable).

Engineering calculations must bear the signature and stamp of an engineer licensed in the state of Washington.

- A responsible, certified erosion control specialist shall be identified. Telephone and/or pager numbers should be included.

3.3.2 Drawings

- Vicinity map - Provide a map with enough detail to identify the location of the construction site; adjacent roads; and receiving waters.

- Site map - Provide a site map(s) showing the following features. The site map requirements may be met using multiple plan sheets for ease of legibility.

    1. A legal description of the property boundaries or an illustration of property lines (including distances) in the drawings.
    2. The direction of north in relation to the site.
    3. Existing structures and roads, if present.
    4. The boundaries of and label the different soil types.
    5. Areas of potential erosion problems.
    6. Any on-site and adjacent surface waters, critical areas, their buffers, FEMA base flood boundaries, and Shoreline Management boundaries.
    7. Existing contours and drainage basins and the direction of flow for the different drainage areas.
    8. Final and interim grade contours as appropriate, drainage basins, and the direction of stormwater flow during and upon completion of construction.
    9. Areas of soil disturbance, including all areas affected by clearing, grading and excavation.
    10. Locations where stormwater discharges to surface waters during and upon completion of construction.
    11. Existing unique or valuable vegetation and the vegetation that is to be preserved.
    12. Cut and fill slopes indicating top and bottom of slope catch lines.
    13. Stockpile, waste storage, and vehicle storage/maintenance areas.
    14. Total cut and fill quantities and the method of disposal for excess material.

- Conveyance systems - Show on the site map the following temporary and permanent conveyance features:

    1. Locations for swales, interceptor trenches, or ditches.
    2. Drainage pipes, ditches, or cut-off trenches associated with erosion and sediment control and stormwater management.
    3. Temporary and permanent pipe inverts and minimum slopes and cover.

4. Grades, dimensions, and direction of flow in all ditches and swales, culverts, and pipes.
5. Details for bypassing off-site runoff around disturbed areas.
6. Locations and outlets of any dewatering systems.

- Location of detention BMPs - Show on the site map the locations of stormwater detention BMPs.
- Erosion and Sediment Control (ESC) BMPs - Show on the site map all major structural and nonstructural ESC BMPs including:
  1. The location of sediment pond(s), pipes and structures.
  2. Dimension pond berm widths and inside and outside pond slopes.
  3. The trap/pond storage required and the depth, length, and width dimensions.
  4. Typical section views through pond and outlet structure.
  5. Typical details of gravel cone and standpipe, and/or other filtering devices.
  6. Stabilization technique details for inlets and outlets.
  7. Control/restrictor device location and details.
  8. Stabilization practices for berms, slopes, and disturbed areas.
  9. Rock specifications and detail for rock check dam, if used.
  10. Spacing for rock check dams as required.
  11. Front and side sections of typical rock check dams.
  12. The location, detail, and specification for silt fence.
  13. The construction entrance location and a detail.
- Detailed drawings - Any structural practices used that are not referenced in this manual or other local manuals should be explained and illustrated with detailed drawings.
- Other pollutant BMPs - Indicate on the site map the location of BMPs to be used for the control of pollutants other than sediment.
- Monitoring locations - Indicate on the site map the water quality sampling locations, if required by the City or the Department of Ecology. Sampling stations shall be located in accordance with applicable permit requirements.

Standard notes are provided in Appendix II-A. Notes addressing construction phasing and scheduling shall be included on the drawings.

Construction Stormwater Pollution Prevention Plan (CSWPPP)
Worksheet for Construction Projects

A Construction Stormwater Pollution Prevention Plan (CSWPPP) is required for all projects that meet the thresholds for permitting in section 23.76.035 of the clearing and grading code. The CSWPPP must be implemented beginning with initial soil disturbance and until final stabilization. The CSWPPP must include a narrative, drawings showing the locations of erosion and sediment control (ESC), and a turbidity and pH monitoring plan.

A log book must be maintained for all on-site construction activities and must include a record of the implementation of the CSWPPP, any updates to the CSWPPP, site inspections, and the results of any stormwater quality monitoring. A Construction Emergency Contact Sheet must also be kept in the log book and updated regularly.

Section One: Written Narrative

This worksheet is meant to provide guidance on City of Bellevue and State of Washington stormwater pollution prevention requirements and a form for the development of a comprehensive written CSWPPP and plan set (ESC). This form identifies stormwater pollution prevention requirements and objectives, provides an extended list of specific Best Management Practices (BMPs) (based upon the State Department of Ecology 2005 Manual) for the Applicant to select to meet the requirements and objectives. The form provides space for the Applicant to describe how these BMPs will be implemented or modified to meet the stormwater control requirements given the unique characteristics of the project and site. Any water quality testing required under project permits or law shall be listed in the written narrative and provided for in the design of the project log book.

Not all BMPs listed in the first section of this form apply to or are appropriate for each project. The expectation is that the Applicant would review the stormwater requirements and objectives listed at the top of each Erosion Control Element and then select the BMPs that are appropriate for the project. The Applicant must explain in the written answer portion of each erosion control element how BMPs will be implemented to protect surface water quality. A drawing shall also be prepared that depicts the location of BMPs to be employed.

Section Two: ESC Plan Set

The BMPs the Applicant selects in Section One, written narrative, to meet the requirements and objectives of the twelve erosion control elements must be shown on the ESC plan. Some BMP's can be added to the ESC as construction notes. The requirements for the ESC plan include the list of items included in the second part of this application form along with the BMPs selected by you to meet the requirements and objects of each of the 12 Erosion Control Elements that the Applicant lists and describes in the first section of this form.

Log book: Each project is required to retain both the written CSWPPP and ESC Plan on site along with the construction drawings. In addition, each project is required to maintain a log book to document required erosion control inspections and water quality tests. The Applicant shall keep the log book on site at all times when construction is occurring and note all changes in the erosion control measures taken to meet conditions experienced in the field. Sample log book pages (site inspection, turbidity monitoring, etc) are included with this form for use by the

Applicant. Modification of the log book page may be needed to fit the requirements of other permits issued for the project.

Background Information

Applicant: _____

Property Owner, if different from Applicant: _____

Contact Person: _____
All questions and correspondence will be directed to the individual listed as Contact Person.

Address of Contact Person: _____

Phone Number: _____

Project Title: _____

Site Address: _____

Parcel Number: _____

Give an accurate, brief description of the proposed project's scope and nature:

1. General description:

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2. Area of site (square feet): _____
3. Proposed area of land disturbance (square feet): _____
4. Proposed quantity of excavation (cubic yards): _____
5. Proposed quantity of fill (cubic yards): _____
6. Total proposed impervious area to be constructed (square feet) _____
7. Existing site conditions including descriptions of existing topography, existing vegetation, and existing drainage: _____

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8. Description of site soils including soil unit, erodibility, settleability, permeability, depth, texture, and soil structure: _____

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9. Description of adjacent areas which may be affected by site disturbance (i.e. streams, lakes, wetlands, residential areas, roads) _____

10. Description of critical areas that are on or adjacent to the site. _____

11. Describe potential erosion problems on site. _____

12. Describe the intended sequence and timing of construction activities and any proposed construction phasing.

13. Describe the construction schedule

14. Describe ownership and financial obligations for the project. Include bond forms and other evidence of financial responsibility for environmental liabilities associated with construction.

15. Engineering calculations for design of sediment ponds, diversion, waterways, etc. Also include calculations for runoff and stormwater detention design, if applicable.

SECTION ONE: CSWPPP NARRATIVE

EROSION CONTROL ELEMENT # 1 - Mark Clearing Limits.

Requirements – Mark Clearing Limits

1. Prior to beginning land disturbing activities, including clearing and grading, the Contractor shall clearly mark all clearing limits, sensitive areas and their buffers, and trees that are to be preserved within the construction area. (These areas shall be clearly marked in the field and on the TESC plans to prevent damage and offsite impacts.)

2. • Plastic, metal, or stake wire fence shall be used to mark the clearing limits.
   • Lath and Flagging shall be used to mark the clearing limits.

3. The duff layer, native top soil, and natural vegetation shall be retained in an undisturbed state to the maximum extent practicable. If it is not practicable to retain the duff layer in place, it should be stockpiled on-site, covered to prevent erosion, and replaced immediately upon completion of the ground disturbing activities.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on the Applicant's site, to meet the erosion control requirements listed above.

- ☐ Preserve existing vegetation – BMP C 101
- ☐ Buffer Zones – BMP C102
- ☐ High Visibility Plastic or Metal Fence – BMP C103
- ☐ Stake and Wire Fence – BMP C104
- ☐ Tree Protection During Construction – BMP T101
- ☐ Lath and Flagging
- ☐ Other _____
- ☐ Not Applicable – See explanation below

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to address the "Mark Clearing Limits" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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Requirements – Establish Construction Access

1. Construction vehicle access and exit shall be limited to one route, if possible, or two for linear projects such as roadways where more than one access is necessary for large equipment maneuvering.

2. Access point(s) shall be stabilized with a pad of quarry spalls or crushed rock prior to traffic leaving the construction site to minimize the tracking of soil onto public roads.

3. Wheel wash or tire baths should be located on site, if applicable.

4. If soil is tracked off site, the Contractor shall clean paved roads if necessary to prevent sediment from entering surface waters. Sediment shall be removed from roads by shoveling or pickup sweeping and shall be transported to a controlled sediment disposal area. Street washing is not allowed.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Stabilized Construction Entrance – BMP C105
- ☐ Wheel Wash – BMP C106
- ☐ Construction Road/Parking Area Stabilization – BMP C107
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Establish Construction Access" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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Requirements – Control Flow Rates

1. Any stormwater retention/detention facilities that are part of providing temporary erosion control for the project shall be constructed as one of the first steps in grading.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Sediment trap – BMP C240
- ☐ Temporary Sediment Pond – C241
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the contractor selects to control the "Control Flow Rates" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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Requirements – Install Sediment Controls

1. Prior to leaving the construction site or prior to discharge to an infiltration facility, stormwater runoff from disturbed areas shall pass through a sediment pond or other appropriate sediment removal BMP. Runoff from fully stabilized areas may be discharged without a sediment removal BMP, but must meet the flow control performance standard of protecting properties and waterways downstream from development sites from erosion due to increases in the volume, velocity, and peak flow rate of stormwater runoff from the project site, as required by the City of Bellevue.

(Full stabilization means concrete or asphalt paving; quarry spalls used as ditch lining; or the use of rolled erosion products, a bonded fiber matrix product, or established vegetative cover in a manner that will fully prevent soil erosion.)

2. Sediment ponds, vegetated buffer strips, sediment barriers or filters, dikes, and other BMPs intended to trap sediment on site shall be constructed as one of the first steps in grading. These BMPs shall be functional before other land disturbing activities take place.

3. Earthen structures such as dams, dikes and diversion, that are part of the erosion control plan, shall be seeded and mulched according to the timing indicated in Element #5.

4. BMPs intended to trap sediment on site must be located in a manner to avoid interference with the movement of juvenile salmonids attempting to enter off-channel areas or drainages, often during non-storm events, in response to rain event changes in stream elevation or wetted area.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Straw Bale Barrier – BMP C230
- ☐ Brush Barrier – BMP C231
- ☐ Gravel Filter Berm – BMP C232
- ☐ Silt Fence – BMP C233
- ☐ Vegetated strip – BMP C234
- ☐ Straw wattles – BMP C235
- ☐ Sediment Trap –BMP C240
- ☐ Temporary Sediment Pond – BMP C241
- ☐ Construction Stormwater Chemical Treatment – BMP C250
- ☐ Construction Stormwater Filtration – BMP C251
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the contractor selects to control the "Install Sediment Controls" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

Requirements – Stabilize Soils

1. From October 1 through April 30, no soils shall remain exposed and unworked for more than 2 days. From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days. This condition applies to all soils on site, whether at final grade or not. These time limits may be adjusted by the city if it can be shown that the average time between storm events justifies a different standard. (Requests to modify these timeframes must be made in writing and approved by the City of Bellevue before any deviation in these erosion control measures is permitted.)

2. Soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

3. Soil stockpiles must be stabilized from erosion, protected with sediment trapping measures and when possible, be located away from storm drain inlets, waterways and drainage channels.

4. Linear construction activities, including right-of-way and easement clearing, roadway development, pipelines, and trenching for utilities, shall be conducted to meet the soil stabilization requirements. Contractors shall install the bedding materials, roadbeds, structures, pipeline, or utilities and re-stabilize the disturbed soils so that:

   From October 1 through April 30 no soils shall remain exposed and unworked for more than 2 days and

   From May 1 to September 30, no soils shall remain exposed and unworked for more than 7 days.

CSWPPP Guidance: Soil stabilization measures should be appropriate for the time of year, site conditions, estimated duration of use, and potential water quality impacts that stabilization agents may have on downstream water or ground water. Applicable practices include, but are not limited to, temporary and permanent seeding, sodding, mulching, plastic covering, erosion control fabrics and matting, soil application of polyacrylimide (PAM), the early application of gravel base on areas to be paved, and dust control.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on the site, to meet the erosion control requirements listed above.

- ☐ Temporary & Permanent Seeding – BMP C120
- ☐ Mulching – BMP C121
- ☐ Nets & blankets – BMP C122
- ☐ Plastic Covering – BMP C123
- ☐ Sodding – BMP C124
- ☐ Topsoiling – BMP C125
- ☐ Polyacrylamide for Soil Erosion Protection – BMP C126
- ☐ Surface Roughening – BMP C130
- ☐ Gradient Terraces – BMP C131
- ☐ Dust Control – BMP C140
- ☐ Small project construction stormwater pollution prevention - BMP C180
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Stabilize Soils" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

Requirements – Protect Slopes

1. Off-site stormwater (run-on) shall be diverted away from slopes and disturbed areas with interceptor dikes and/or swales. Off-site stormwater should be managed separately from stormwater generated on the site.

2. At the top of slopes drainage shall be collected in pipe slope drains or protected channels to prevent erosion. Temporary pipe slope drains shall handle the peak flow from a 10 year, 24 hour event assuming a Type 1A rainfall distribution. Alternatively, the 10-year and 25-year, 1-hour flow rates indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used. Consult the Utilities Engineering Standards for sizing PERMANENT pipe slope drains.

3. Provide drainage to remove ground water intersecting the slope surface of exposed soil areas. Excavated material shall be placed on the uphill side of trenches, consistent with safety and space considerations.

4. Check dams shall be placed at regular intervals within channels that are cut down a slope. (Show a detail on TESC plan if this technique is to be used onsite.) Soils shall be stabilized as specified in Element # 5.

5. Minimize cut slope length and steepness. Slope surfaces shall be roughened.

CSWPPP Guidance: Consider soil type and its potential for erosion. Reduce slope runoff velocities by reducing the continuous length of slope with terracing and diversions, reduce slope steepness, and roughen slope surface.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on the site, to meet the erosion control requirements listed above.

- ☐ Temporary & permanent seeding – BMP C120
- ☐ Nets & blankets – BMP C122
- ☐ Plastic covering – BMP C123
- ☐ Surface Roughening – BMP C130
- ☐ Gradient Terraces – BMP C131

- ☐ Interceptor dike and swale – BMP C200
- ☐ Pipe Slope Drains – BMP C204
- ☐ Subsurface Drains – BMP C205
- ☐ Level Spreader – BMP C206
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Protect Slopes" erosion control element of your project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

Requirements – Protect Drain Inlets

1. All storm drain inlets made operable during construction shall be protected so that stormwater runoff does not enter the conveyance system without first being treated to remove sediment.

2. All approach roads shall be kept clean. Sediment shall not be allowed to enter storm drains without prior and adequate treatment unless on-site treatment is provided before the storm drain discharges to surface waters.

3. Inlets should be inspected weekly at a minimum and daily during storm events. Inlet protection devices should be cleaned or removed and replaced when sediment has filled one-third of the available storage (unless a different standard is specified by the product manufacturer.)

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on the site, to meet the erosion control requirements listed above.

☐ Storm drain inlet protection – BMP C220
☐ Other _____
☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Protect Drain Inlets" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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EROSION CONTROL ELEMENT # 8 - Stabilize Channel and Outlets.

Requirements – Stabilize Channel Outlets

1. All temporary on-site conveyance channels shall be designed, constructed and stabilized to prevent erosion from the expected peak 10 minute velocity of flow from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate indicated by an approved continuous runoff model, increased by a factor of 1.6, may be used.

2. Stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream reaches shall be provided at the outlets of all conveyance systems.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Channel lining – BMP C202
- ☐ Outlet protection – BMP C209
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, is located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Stabilize Channel and Outlets" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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Requirements – Control Pollutants

1. All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Woody debris may be chopped and spread on site.

2. Cover, containment, and protection from vandalism shall be provided for all chemicals, liquid products, petroleum products, and non-inert wastes present on the site (see Chapter 173-304 WAC for the definition of inert waste). On-site fueling tanks shall include secondary containment.

3. Maintenance and repair of heavy equipment and vehicles involving oil changes, hydraulic system drain down, solvent and de-greasing cleaning operations, fuel tank drain down and removal, and other activities which may result in discharge or spillage of pollutants to the ground or into stormwater runoff must be conducted using spill prevention measures, such as drip pans. Contaminated surfaces shall be cleaned immediately following any discharge or spill incident.

4. Emergency repairs may be performed on-site using temporary plastic placed beneath and, if raining, over the vehicle. Wheel wash or tire bath wastewater shall be discharged to a separate on-site treatment system or to the sanitary sewer, when permitted.

5. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application rates and procedures shall be followed.

6. BMPs shall be used to prevent or treat contamination of stormwater runoff by pH modifying sources. These sources include, but are not limited to, bulk cement, cement kiln dust, fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters. Stormwater discharges shall not cause or contribute to a violation of the water quality standard for pH in the receiving water.

7. Construction sites with significant concrete work shall adjust the pH of stormwater if necessary to prevent violations of water quality standards.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Concrete Handling – BMP C151
- ☐ Sawcutting and Surfacing Pollution Prevention – BMP C152
- ☐ Material Delivery, Storage Containment – BMP C153
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Also see Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Control Pollutants" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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EROSION CONTROL ELEMENT # 10 - Control De-Watering.

Requirements – Control De-Watering

1. Foundation, vault, and trench de-watering water, which have similar characteristics to stormwater runoff at the site, shall be discharged into a controlled conveyance system prior to discharge to a sediment trap or sediment pond. Channels must be stabilized, as specified in Element #8.

2. Clean, non-turbid de-watering water, such as well-point ground water, can be discharged to systems tributary to waters, as specified in Element #8, provided the de-watering flow does not cause erosion or flooding. These clean waters should not be routed through stormwater sediment ponds. February 2005 Volume II – Construction Stormwater Pollution Prevention 3-13

3. Highly turbid or contaminated dewatering water from construction equipment operation, clamshell digging, concrete tremie pour, or work inside a cofferdam, shall be treated separately from stormwater.

CSWPPP Guidance: Other disposal options, depending on site constraints, may include:
1. Infiltration
2. Transport offsite in a vehicle, such as a vacuum flush truck, for legal disposal in a manner that does not pollute surface waters,
3. Ecology-approved on-site chemical treatment or other suitable treatment technologies,
4. Sanitary sewer discharge with City and King County Wastewater Treatment Division approval.
5. Use of a sedimentation bag with outfall to a ditch or swale for small volumes of localized dewatering.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

- ☐ Level Spreader – BMP C206
- ☐ Infiltration (Provide details below and on TESC plan below and on the TESC plan.)
- ☐ Discharge to sanitary sewer (KC METRO and Bellevue Utilities permits required) – List permit numbers
- ☐ Other _____
- ☐ Not Applicable – See explanation below.

Best Management Practices: Also see Volume 2, Construction Stormwater Pollution Prevention, of the Ecology Stormwater Management Manual for Western Washington, located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Control De-watering" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

EROSION CONTROL ELEMENT # 11 - Maintain BMPs.

Requirements – Maintain BMPs

1. All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assure continued performance of their intended function. Maintenance and repair shall be conducted in accordance with the BMP specifications.

2. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

3. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

☐ Maintain and repair in accordance with BMP specifications
☐ Other _____
☐ Not Applicable – See explanation below.

Best Management Practices: Also see Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to control the "Maintain BMPs" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

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Requirements - Phasing of Construction: (If applicable)

1. Development projects shall be phased where feasible in order to prevent soil erosion and, to the maximum extent practicable, the transport of soil from the site during construction.

2. Revegetation of exposed areas and maintenance of that vegetation shall be an integral part of the clearing activities for any phase.

3. Clearing and grading activities for developments shall be permitted only if conducted pursuant to an approved site development plan (e.g., subdivision approval) that establishes permitted areas of clearing, grading, cutting, and filling.

CSWPPP Guidance: When establishing these permitted clearing and grading areas, consideration should be given to minimizing removal of existing trees and minimizing disturbance/compaction of native soils except as needed for building purposes. These permitted clearing and grading areas and any other areas required to preserve critical or sensitive areas, buffers, native growth protection easements, or tree retention areas, shall be delineated on the site/TESC plans and the development site.

Requirements – Seasonal Work Limitations

4. Seasonal Work Limitations:

   From October 1 through April 30, clearing, grading, and other soil disturbing activities shall only be permitted if shown to the satisfaction of the local permitting authority that silt-laden runoff will be prevented from leaving the site through a combination of the following:

   1. Site conditions including existing vegetative coverage, slope, soil type, and proximity to surface waters; and
   2. Limitations on activities and the extent of disturbed areas; and
   3. Proposed erosion and sediment control measures.

CSWPPP Guidance: Based on the information provided and/or local weather conditions, the City may expand or restrict the seasonal limitation on site disturbance. The City shall take enforcement action - such as a notice of violation, administrative order, penalty, or stop-work order under the following circumstances: − If, during the course of any construction activity or soil disturbance during the seasonal limitation period, soil leaves the construction site causing a violation of the surface water quality standard; or − If clearing and grading limits or erosion and sediment control measures shown in the approved TESC plan are not maintained.

The following activities are exempt from the seasonal clearing and grading limitations:

1. Routine maintenance and necessary repair of erosion and sediment control BMPs;
2. Routine maintenance of public facilities or existing utility structures that do not expose the soil or result in the removal of the vegetative cover to soil; and
3. Activities where there is one hundred percent infiltration of surface water runoff within the site in approved and installed erosion and sediment control facilities.

Requirements – Coordination with Utilities and Other Contractors

5. Coordination with Utilities and Other Contractors:
   The primary project proponent shall evaluate, with input from utilities and other Contractors, the stormwater management requirements for the entire project, including the utilities, when preparing the CSWPPP.

Requirements – Inspection and Monitoring

6. Inspection and Monitoring:
   All BMPs shall be inspected, maintained, and repaired as needed to assure continued performance of their intended function. Site inspections shall be conducted a person who is knowledgeable in the principles and practices of erosion and sediment control. The person must have the skills to 1) assess the site conditions and construction activities that could impact the quality of stormwater, and 2) assess the effectiveness of erosion and sediment control measures used to control the quality of stormwater discharges.

Requirements – Erosion Control Lead *Engineer selects one of following paragraphs*

7. An Erosion and Sediment Control Lead shall be identified in the Construction SWPPP and shall be on site or on-call at all times. Whenever inspection and/or monitoring reveals that the BMPs identified in the Construction SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible. Maintaining an Updated Construction SWPPP:

OR

7. A Certified Erosion and Sediment Control Specialist shall be identified in the Construction SWPPP and shall be on-site or on-call at all times. Certification may be obtained through an approved training program that meets the erosion and sediment control training standards established by Ecology. Whenever inspection and/or monitoring reveals that the BMPs identified in the Construction SWPPP are inadequate, due to the actual discharge of or potential to discharge a significant amount of any pollutant, appropriate BMPs or design changes shall be implemented as soon as possible. Maintaining an Updated Construction SWPPP:

Requirements – Retain CSWPPP on-site, Modify as necessary.

8. The Construction SWPPP shall be retained on-site with the construction drawings. The CSWPPP shall be modified whenever there is a change in the design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to surface waters. The CSWPPP shall be modified if, during inspections or investigations conducted

   by the owner/operator, or the City or state regulatory authority, it is determined that the SWPPP is ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site. The SWPPP shall be modified as necessary to include additional or modified BMPs designed to correct problems identified. Revisions to the SWPPP shall be completed within seven (7) days following the inspection.

Select from the following Best Management Practices, (BMPs), the ones that the Contractor will implement on your site, to meet the erosion control requirements listed above.

☐ Maintain and repair in accordance with BMP specifications
☐ Other

Best Management Practices: Also see Volume 2, Construction Stormwater Pollution Prevention, of the Department of Ecology Stormwater Management Manual for Western Washington, located at http://www.ecy.wa.gov/pubs/0510030.pdf

Note: The BMPs that the Contractor selects to implement the "Manage the Project" erosion control element of the project need to be shown or added as a note on the TESC plan.

Describe what actions will be taken to accomplish these requirements and objectives, given the unique circumstances of the project and or site. The Applicant must to explain the site conditions or project design features that allow the project to meet the erosion control requirements using some or all of the BMPs listed above.

Phase construction – describe _____

_____

Limit work to the dry season _____

_____

Inspect and monitor all BMPs _____

_____

Pollution prevention contact list – attach a list to be posed at job site _____

_____

Reporting and recordkeeping – Attach inspection forms and other site log forms _____

_____

_____

Other _____

SECTION TWO: TESC PLANS

TESC Plans

1. **Vicinity Map**
   Prepare a vicinity map or general location with enough detail to identify the location of the construction site and receiving waters within one mile of the site.

2. **Site Map**
   The site map must show the entire construction site with the following information:
   a. Legal description
   b. North Arrow
   c. Existing Road and Structures
   d. Boundaries of soil types and areas of potential erosion problems
   e. On-site or adjacent surface waters, and other critical areas
   f. Existing contours and drainage basins and the direction of flow for the different drainage areas
   g. Final and interim grade contours as appropriate, drainage basins, and the direction of stormwater flow during and upon completion of construction
   h. Areas of soil disturbance, including all areas affected by clearing, grading and excavation
   i. Locations were stormwater discharges to surface waters during and upon completion of construction.
   j. Existing unique or valuable vegetation and the vegetation that is to be preserved
   k. Cut and fill slopes indicating top and bottom of slope catch lines
   l. Stockpile, waste storage, and vehicle storage/maintenance areas (Contrator)
   m. Total cut and fill quantities and the method of disposal for excess material (Contractor)

3. **Conveyance Systems**
   Show temporary and permanent conveyance features either on the site map or on a separate map or drawing. Include the following:

   a. Designate locations for swales, interceptor trenches, or ditches.
   b. Show all temporary and permanent drainage pipes, ditches, or cut-off trenches required for erosion and sediment control.
   c. Provide minimum slope and cover for all temporary pipes or call out pipe inverts.
   d. Show grades, dimensions, and direction of flow in all ditches, swales, culverts and pipes.
   e. Provide details for bypassing off-site runoff around disturbed areas.
   f. Indicate locations and outlets of any dewatering systems.

4. **Location of detention BMPs**
   Show on the site map, or other map or drawing, the locations of stormwater detention BMPs

5. **Erosion and Sediment Control (ESC) BMPs**
   Show on the site map, or on a separate map or drawing, all major structural and nonstructural ESC BMPs. Include section views and details as necessary

6. **Detailed drawings**
   Any structural practices used that are not referenced in the DOE manual or other local manuals should be explained and illustrated with detailed drawings

7. **Other pollutant BMPs**
   Indicate on the site map, or on a separate map or drawing, the location of BMPs to be used for the control of pollutants other than sediment.

8. **Monitoring locations**
   Indicate on the site map the water quality sampling locations, if required by the City or the Department of Ecology. Sampling stations shall be located as described in the project permit approvals. (City, State and Federal Permits, if applicable)

9. **Notes**
   Notes addressing construction phasing and scheduling shall be included on the drawings. Standard notes for erosion control plans are provided in Appendix A2 of the Clearing & Grading Development Standards.