

Construction Stormwater General Permit (CSWGP)

Stormwater Pollution Prevention Plan (SWPPP)

for
SR 509 Completion Project – Stage 1b

Prepared for:
Department of Ecology
Northwest Region

Permittee / Owner	Developer	Operator / Contractor
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Latitude 47.39 / Longitude -122.29

I-5 Mileposts 148.9 to 151.1

King County

Certified Erosion and Sediment Control Lead (CESCL)

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SWPPP Prepared By

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Jason Long	HNTB Corporation	425-698-5198

SWPPP Preparation Date

4/8/2020

Project Construction Dates

Activity / Phase	Start Date	End Date
Stage 1b	01/04/2021	12/31/2025

GENERAL INSTRUCTIONS AND CAVEATS

This template presents the recommended structure and content for preparation of a Construction Stormwater General Permit (CSWGP) Stormwater Pollution Prevention Plan (SWPPP).

The Department of Ecology's (Ecology) CSWGP requirements inform the structure and content of this SWPPP template; however, **you must customize this template to reflect the conditions of your site.**

A Construction Stormwater Site Inspection Form can be found on Ecology's website.
<https://www.ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit>

Using the SWPPP Template

Each section will include instructions and space for information specific to your project. Please read the instructions for each section and provide the necessary information when prompted. This Word template can be modified electronically. You may add/delete text, copy and paste, edit tables, etc. Some sections may be completed with brief answers while others may require several pages of explanation.

Follow this link to a copy of the Construction Stormwater General Permit:
<https://www.ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Construction-stormwater-permit>

List of Acronyms and Abbreviations

Acronym/Abbreviation	Explanation
303(d)	Clean Water Act section pertaining to Impaired Waterbodies
BFO	Bellingham Field Office of the Department of Ecology
BMP(s)	best management practice(s)
CESCL	certified erosion and sediment control lead
CO₂	carbon dioxide
CRO	[Washington State Department of Ecology] Central Regional Office
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	discharge monitoring report
DO	dissolved oxygen
Ecology	Washington State Department of Ecology
EPA	[United States] Environmental Protection Agency
ERO	[Washington State Department of Ecology] Eastern Regional Office
ERTS	Environmental Report Tracking System
ESC	erosion and sediment control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	nephelometric turbidity units
NWRO	Northwest Regional Office of the Department of Ecology
pH	potential hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	standard unit(s)
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
SWRO	[Washington State Department of Ecology] Southwest Regional Office
TMDL	total maximum daily load
VFO	[Washington State Department of Ecology] Vancouver Field Office
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

1.0 Project Information

Project/site name: SR 509 Completion Project – Stage 1b

Street/location: Latitude 47.39 / longitude -122.29, I-5 mileposts 148.9 to 151.1, King County

Cities: Kent, SeaTac, Des Moines State: WA Zip code: 98032

Subdivision: N/A

Receiving waterbodies: Des Moines Creek, Green River, Midway Creek

1.1 Existing Conditions

Total acreage: 134.3 acres (including support activities such as off-site equipment staging yards, material storage areas, borrow areas)

Disturbed acreage: 67.15 acres

Existing structures: Typical roadway elements (stormwater drainage structures, bridges, retaining walls, barriers, guardrails, roadway signs, intelligent transportation system facilities, illumination systems, and sign structures)

Landscape topography: Mostly flat along I-5 (up to 3% slope); 8% slope at NW portion of project area (within newly added segment of SR 509). WSDOT Highway Log classifies the terrain as rolling.

Drainage patterns: Surface flows into ditches on either side of the freeway – some infiltrates, some is conveyed into storm drains. The existing drainage includes cross culverts, biofiltration swales, and detention or water quality ponds. Open ponds, underground detention and water quality vaults, and one bioretention cell on South 200th Street are part of the system that drains through WSDOT ROW.

Existing vegetation: Native scrub-shrub communities, native emergent communities, native forested communities, and some areas with noxious/invasive species as monocultures or mixed with native vegetation.

Critical Areas (wetlands, streams, high erosion risk, steep or difficult to stabilize slopes): 15 wetlands (Palustrine emergent, forested, and scrub-shrub).

List of known impairments for 303(d)-listed or total maximum daily load (TMDL) for the receiving waterbody:

- Des Moines Creek: Bacteria/fecal coliform, dissolved oxygen, copper, temperature (Category 5)
- Green River: Dissolved oxygen (Category 5)

Water and soil samples were analyzed for contamination on the Poulsbo RV site, located at 23051 Military Road in Kent, WA. The following elements were analyzed:

- NWTPH-Gx (Gasoline)
- NWTPH-Dx (Diesel/Heavy Oil)
- Volatile Organic Compounds (VOCs)
- Semi-Volatile Organic Compounds (Semi-volatiles)
- RCRA 8 Metals
- PCBs

The HazMat Program evaluated the individual chemical constituents in all soil and groundwater sampling reports against the Models Toxic Control Act (MTCA) Method A and B cleanup levels (CULs) for Unrestricted Land Use, WAC 173-303 Dangerous Waste Regulations, and/or WAC 173-201A Water Quality Standards. All laboratory analytical results were either non-detect, below the MTCA cleanup levels (CULs), and/or well below the natural background levels. Based on the results, and the sampling locations, the investigation provides a reasonable expectation of the types of contaminants present, or not present in the soil & groundwater, but makes no representation of the magnitude or extent of any contamination.

Table 1 lists suspected contaminants on parcels that are within the project limits, but did not have water and soil samples analyzed.

Table 1 – Parcels with Potential Contaminants

Site # / Name	Facility (WSDOT Parcel No.)	Address	Phase I / II	Other Notes	Potential Contaminants of Concern
Fife Motel	WSDOT Parcel: (1-24606)	20440 INTERNATIONAL BLVD, Seatac, WA 98198	N/A	Mobile home park; design team estimates up to 5 feet of excavation will occur within the front area of the parcel (driveway/access area).	Unknown
10	Advantage Rent-A-Car / Alamo Rent-A-Car (1-17499)	20636 Pacific Hwy S	Phase II	Gasoline, diesel, lube oil-range petroleum hydrocarbons, and volatile organic compounds were detected in concentrations greater than MTCA Method A Cleanup Levels. Gas, diesel, and lube oil contamination likely associated with 10,000 gallon UST near SE corner of the site, detected at depths from approximately 4 to 5 feet below ground surface. Volatile organic compounds were detected in soil and groundwater near SE corner of site.	Benzene, Non-Halogenated Solvents, Petroleum-Gasoline. Petroleum-Diesel, Lube Oil-range Petroleum, Volatile Organic Compounds
11	Unocal 3965 (1-17500)	20658 Pacific Hwy S	Phase II	Former gas station. Between 1985 and 1990, 11 underground storage tanks were removed from the site, ranging in capacity	Benzene, Non-Halogenated Solvents,

Site # / Name	Facility (WSDOT Parcel No.)	Address	Phase I / II	Other Notes	Potential Contaminants of Concern
				<p>from 250 to 12,000 gallons. Tanks contained waste oil, heating oil, gasoline, and septic waste. Contamination reported in groundwater and soil. Contamination detected in concentrations less than Model Toxic Control Act Method A Cleanup Levels for unrestricted land use. City of SeaTac documented petroleum-impacted soils 9 feet below ground surface in location adjacent to the west side of site.</p> <p>DOE site file review confirmed that the tanks are not where we are acquiring property.</p>	Petroleum Products, Petroleum-Diesel, Petroleum-Gasoline, septic waste
17	Crown Castle Midway 846425 / Church Of God Holiness	22809 Military Rd S	Phase I	Hazardous Waste Report from 2000 said Church of God Holiness did not reply to several requested for information on the property and building. There may be an underground storage tank (and contaminated soil), and the buildings on site may contain lead-based paint and asbestos. Building demo TBD. If building is demolished, we will need asbestos and lead-based paint good faith survey. The building is an active WSDOT signal shop and Karen McKenzie is the Signals point of contact. Poulsbo RV will purchase this property from WSDOT.	Lead-based paint, asbestos
18	Poulsbo RV / Valley I-5 (1-17372)	23005 Military Rd	Phase I	Steel underground storage tank was documented on property.	
19	Valley I-5 (1-17374)	23051 Military Rd S	Phase I	Two single wall underground storage tanks (1,101 to 2,000 gallon capacity range) removed in 1998. One single wall underground storage tank (111 to 1,100 gallon capacity) removed in 1998. One single wall steel underground storage tank (111 to 1,100 gallon capacity) is listed as status "exempt" (still on site?). A 50-gallon gasoline spill was reported in 2004. A 10-gallon spill (unspecified) was reported in 2004.	Petroleum – gasoline, ignitable waste, cadmium, lead, benzene, 1,4-dichloroenezene, tetrachloroethylene , trichloroethylene
20	Franz Bakery (1-17373)	23009 Military Rd S	Phase I	A 1-gallon spill of transformer oil was reported in 2003.	Transformer oil

1.2 Proposed Construction Activities

Site development

Constructing a new 4-lane highway segment on SR 509 and approximately 1.7 miles of freeway improvements along I-5.

Construction activities

Installing TESC BMPs, clearing, grubbing, demolishing, excavating, constructing embankments (placing and compacting borrow material), constructing bridges (drilling shafts, setting/removing concrete forms, setting reinforcing steel, pouring concrete, installing pre-cast concrete elements), placing and compacting aggregate base materials, paving and compacting (HMA), installing landscapes, installing associated infrastructure (stormwater conveyance and treatment, roadside and overhead signage, illumination, toll system, intelligent transportation system [ITS], etc.)

Site drainage including flow from and onto adjacent properties (must be consistent with Site Map in Appendix A)

Surface water flows into roadside storm drains and/or drainage ditches that convey to storm drains; some infiltration (media filter drains, bioswales, natural percolation). All storm drainage collection remains within WSDOT right of way. New proposed stormwater flow control and water quality BMPs will include compost-amended biofiltration swales, media filter drains, bioretention swales, detention ponds, new culverts and extension of existing culverts, modification of existing and construction of new enclosed storm sewers, and energy dissipating erosion control rock pads.

Final stabilization

Pavement, revegetation with mulch, quarry spalls/riprap in potentially erosive areas.

1.3 Contaminated Site Information

Proposed activities regarding contaminated soils or groundwater (example: on-site treatment system, authorized sanitary sewer discharge): Hauling off site to an approved disposal facility if levels exceed standard MTCA levels.

2.0 Construction Stormwater Best Management Practices

The SWPPP is a living document reflecting current conditions and changes throughout the life of the project. These changes may be informal (i.e., hand-written notes and deletions). Update the SWPPP when the CESCL has noted a deficiency in BMPs or deviation from original design.

2.1 The 12 Elements

2.1.1 Element 1: Preserve Vegetation / Mark Clearing Limits

List and describe BMPs: Silt fences (BMP C233), high-visibility fencing (BMP C103)

- The design-build contractor will be required to limit clearing to areas of active construction only
- Within the Project limits (including staging areas, borrow sources, and other sites developed or used to support the construction of the Project), all environmentally sensitive areas and the buffers of environmentally sensitive areas will be fenced with high visibility construction fence (HVF) prior to commencing construction activities, including equipment staging, materials storage, and parking of workers' vehicles.
 - The HVF will be applied, as stated above, prior to commencing construction activities for each stage of the Project.
 - All field staff will be trained to recognize HVF and understand its purpose.
 - HVF will be maintained until all work is completed for each stage of the Project.
 - All clearing limits, stockpile sites, staging areas, and trees to be preserved will be clearly marked prior to commencing construction activities.
 - All clearing limits, stockpile sites, staging areas, and tree preservation markings will be maintained until all work is completed for each stage of the Project.
 - No equipment will enter, operate, be stored, or be parked within any sensitive area except as specifically provided for in permits issued for the Project.
 - Where HVF is not appropriate (such as over water), the environmentally sensitive areas will be clearly marked by other means to ensure that these areas are protected.
- Silt fences constructed of geotextile fabric (which meets standards within BMP C233) will be used downslope of all disturbed areas and will:
 - Maintain a maximum slope steepness of 1H:1V and maximum overland flow path length of 100 ft
 - Not allow flows greater than 0.5 cfs
 - Maintained for duration of project
- Temporarily disturbed areas will be restored and replanted with native vegetation. To the extent feasible, trees will be replanted when consistent with highway safety standards. Removing trees greater than 10 inches diameter breast height in riparian areas (within 200 feet of waterbodies) will not be permitted without prior approval from WSDOT.
- Impacts to vegetation will be minimized during construction through the use of temporary erosion and sediment control BMPs. The Design-Build Contractor will be required to prepare and implement a Temporary Erosion and Sediment Control Plan and a Spill Prevention, Control, and Countermeasures Plan in accordance with the WSDOT Highway Runoff Manual (WSDOT 2019; when construction begins, the design-build contractor will comply with the most recent Highway Runoff Manual), environmental commitments, contract requirements, and permit requirements.

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor. At a minimum, inspection is required every 7 days or within 24 hours of any discharge from the site.

Responsible staff: to be determined by contractor

2.1.2 Element 2: Establish Construction Access

List and describe BMPs: Riprap at ingress/egress points and wheel (BMP C106) and vehicle washing stations (S431)

If riprap at access and egress points are not preventing sediment from being tracked onto pavement, then alternative measures to keep the streets free of sediment shall be used. This may include replacement/cleaning of the existing quarry spalls, street sweeping, an increase in the dimensions of the access, or the installation of BMP C106: Wheel Wash.

Additional BMPs that may be employed to stabilize construction access are as follows:

- Any sediment that is tracked onto pavement shall be removed by shoveling or street sweeping. The sediment collected by sweeping shall be removed or stabilized on site. The pavement shall not be cleaned by washing down the street, except when high efficiency sweeping is ineffective and there is a threat to public safety. If it is necessary to wash the streets, the construction of a small sump to contain the wash water shall be considered. The sediment would then be washed into the sump where it can be controlled.
- Street sweeping will be performed by hand or with a high efficiency sweeper. Do not use a non-high efficiency mechanical sweeper because this creates dust and throws soils into storm systems or conveyance ditches.
- Any quarry spalls that are loosened from the pad, which end up on the roadway shall be removed immediately.
- If vehicles are entering or exiting the site at points other than the construction access(es), BMP C103: High-Visibility Fence shall be installed to control traffic.
- Upon project completion and site stabilization, all construction accesses intended as permanent access for maintenance shall be permanently stabilized.

If implemented, wheel washes will be established at an ingress/egress point within the project area. The wheel wash station will be paved with a minimum of 6 inches of asphalt treated base (ATB) over crushed base material or 8 inches over a good subgrade. A low clearance truck will be used to test the wheel wash before paving. Wash details are as follows:

- Midpoint spray nozzles will only be used in extremely muddy conditions

- Shall be designed with a small grade change, 6- to 12-inches for a 10-foot-wide pond, to allow sediment to flow to the low side of pond to help prevent re-suspension of sediment. A drainpipe with a 2- to 3-foot riser will be installed on the low side of the pond to allow for easy cleaning and refilling. Polymers may be used to promote coagulation and flocculation in a closed-loop system. If Polyacrylamide is being used for dust or erosion control and is being applied by a water truck, the same truck will be used to change the wash water
- The wheel wash will start out each working day with fresh water.
- The wheel wash water will be replaced with clean water daily unless the wheel wash is not used. Disposal shall be conveyed into a nearby sanitary sewer system or an appropriate wastewater treatment system (i.e., Baker tanks, sediment ponds, etc.).

Vehicle washing will occur outside according to the following BMPs:

- In a paved area, a spill containment pad will be constructed to prevent the run-on of stormwater from adjacent areas. It will be sloped to collect washwater in a containment pad drain system with perimeter drains, trench drains or catchment drains and sized to extend out a minimum of four feet on all sides of the washed vehicles and/or equipment.
- Washwater will be conveyed to a sump (like a grit separator) and then to a sanitary sewer (if allowed by the local Sewer Authority), or other appropriate wastewater treatment or recycle system. The containment sump will have a positive control outlet valve for spill control with live containment volume, and oil/water separation. The minimum live storage volume will be sized to contain the maximum expected daily washwater flow plus the sludge storage volume below the outlet pipe. The outlet valve will be shut during the washing cycle to collect the washwater in the sump. The valve should remain shut for at least two hours following the washing operation to allow the oil and solids to separate before discharge to a sanitary sewer.
- A two-way valve will be used for discharges from the containment pad. This valve will be normally switched to direct water to treatment but may be switched to the drainage system after that pad is clean to handle stormwater runoff. Signs will be posted to inform people of the operation and purpose of the valve. The concrete pad will be cleaned thoroughly until there is no foam or visible sheen in the washwater prior to closing the inlet valve and allowing uncontaminated stormwater to overflow and drain.
- Washwater will be collected from built systems and conveyed to appropriate treatment such as a sanitary sewer system if it contains oils, soaps, or detergents. If the washwater does not contain oils, soaps, or detergents (in this case only a low pressure, clean, cold water rinse is allowed) then it will drain to soils that have sufficient natural attenuation capacity for dust and sediment
- Surfaces will be swept prior to cleaning/washing to remove excess sediment and other pollutants

- All mobile cleaning equipment will be labeled as follows: "Properly dispose of all washwater. Do not discharge to an inlet/catch basin, ditch, stream, or on the ground"

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.3 Element 3: Control Flow Rates

Will you construct stormwater retention and/or detention facilities?

☒ Yes ☐ No

Will you use permanent infiltration ponds or other low-impact development (example: rain gardens, bio-retention, porous pavement) to control flow during construction?

☒ Yes ☐ No

List and describe BMPs: Temporary sediment ponds (BMP C241), temporary pipe diversions/pumps

- Temporary sediment ponds will be installed following the 2019 SMMWW BMP C241. To avoid structural failure of sediment ponds, design-builder will ensure:
 - Tight connections between the riser and outlet pipe, and other pipe connections.
 - Adequate anchoring of the riser.
 - Proper soil compaction of the embankment and riser footing.
 - Proper construction of anti-seep devices.
- Temporary pipe diversions/pumps may be utilized to collect runoff from pavement and convey it away from side slopes to avoid erosion. Pipes will be sized to convey the projected flow, using worst-case land cover conditions for analysis. If slopes where pipes are to be installed are vegetated, cleared area will be minimized and cover will be immediately re-established on all disturbed areas. The following BMPs will also be applied to pipe diversions:
 - Temporary drains will be used on new cut or fill slopes.
 - BMP C200: Interceptor Dike and Swale will be used to collect water at the top of the slope.
 - Design-builder will ensure that the entrance area is stable and large enough to direct flow into the pipe
 - The entrance will consist of a standard flared end section for culverts 12 inches and larger with a minimum 6-inch metal toe plate to prevent runoff from undercutting the

pipe inlet. The slope of the entrance will be at least 3 percent. Sand bags may also be used at pipe entrances as a temporary measure

- The soil around and under the pipe and entrance section will be thoroughly compacted to prevent undercutting
- The flared inlet section will be securely connected to the slope drain and have watertight connecting bands
- Slope drain sections will be securely fastened together, fused or have gasketed watertight fittings, and shall be securely anchored into the soil.
- Thrust blocks will be installed anytime 90-degree bends are utilized. Depending on size of pipe and flow, these will be constructed with sand bags, “t” posts and wire, or ecology blocks
- Pipe will be secured along its full length to prevent movement. This can be done with steel “t” posts and wire. Install a post on each side of the pipe and wire the pipe to them. This should be done every 10-20 feet of pipe length or so, depending on the size of the pipe and quantity of water to divert
- Interceptor Dike and Swale will be used to direct runoff into a pipe slope drain. The height of the dike shall be at least 1 foot higher at all points than the top of the inlet pipe
- The area below the outlet will be stabilized
- If the pipe slope drain is conveying sediment-laden water, all flows will be directed into a sediment trapping facility
- Materials specifications for any permanent piped system shall be set by the City government standards.

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.4 Element 4: Install Sediment Controls

List and describe BMPs:

- Media filter drains will be installed following SMMWW BMP T8.40 and kept in place until vegetation is established. The media filter drain will be marked with HVF to ensure no vehicles or traffic will travel over it. Additionally, herbicides will not be applied directly over the media filter drain. If noxious weeds require control, the Design-Builder will check with the local water purveyor, health department, and Ecology to determine whether specific pesticides or herbicides may be applied.

- Channels intended to be used as bioswales will be installed before starting major earthwork and will be hydroseeded with a Bonded Fiber Matrix. If the channel will have high flows, erosion control blankets will be installed over the top of hydroseed. Water will not be introduced to the channels until all vegetation and other design elements are properly installed and approved by the WSDOT Engineer. Additionally, the following BMPs will be applied:
 - Installation of all required surface water control measures will be confirmed to prevent seed from washing away
 - Hydroseed applications will include a minimum of 1,500 pounds per acre of mulch with 3 percent tackifier
 - Areas that will have seeding only and not landscaping may need compost or meal-based mulch included in the hydroseed to establish vegetation. Native topsoil will be re-applied on the disturbed soil surface before application
 - Seed quantities may be increased by up to 50 percent
 - Vegetation establishment will be enhanced by dividing the hydromulch operation into two phases
 - Mixes, except for the wet area seed mix, will be applied at a rate of 120 pounds per acre. This rate can be reduced if soil amendments or slow-release fertilizers are used. Wet area seed mix will be applied at a rate of 60 pounds per acre
 - Local suppliers or the local conservation district will be consulted for their recommendations. Alternative seed mixes approved by the local authority may be used, depending on the soil type and hydrology of the area

- Check dams will be constructed from appropriately sized rock and placed by hand or by mechanical means to achieve complete coverage of the ditch or swale (BMP C207). Additionally, the following BMPs will be applied:
 - Check dams will not be placed in streams unless approved by the State Department of Fish and Wildlife
 - Check dams will not be placed in wetlands without approval from a permitting agency
 - Check dams will not be placed below the expected backwater from any salmonid bearing water between October 1 and May 31 to ensure that there is no loss of high flow refuge habitat for overwintering juvenile salmonids and emergent salmonid fry
 - Check dams may be constructed of either rock or pea-gravel filled bags
 - Check dams will be placed perpendicular to the flow of water

- Check dams will form a triangle when viewed from the side
 - Before installing check dams, upstream water flow will be impounded to bypass upstream water flow away from the work area
 - Check dams may be combined with sumps upstream of the dam
 - The maximum spacing between check dams will be such that the downstream toe of the upstream dam is at the same elevation as the top of the downstream dam
 - The maximum height will be 2 feet at the center of the check dam.
 - The center of the check dam will be at least 12 inches lower than the outer edges at natural ground elevation
 - The side slopes of the check dam will be 2H:1V or flatter
 - Stone will be keyed into the ditch banks and extended beyond the abutments a minimum of 18 inches to avoid washouts from overflow around the dam
 - Filter fabric foundation will be used under a rock or sand bag check dam
 - In the case of grass-lined ditches and swales, all check dams and accumulated sediment will be removed when the grass has matured sufficiently to protect the ditch or swale - unless the slope of the swale is greater than 4 percent. The area beneath the check dams will be seeded and mulched immediately after dam removal.
 - Channel appurtenances, such as culvert entrances below check dams, will not be subject to damage or blockage from displaced stones
- Coir wattles and log on slopes and surrounding drain inlets will be used in disturbed areas that require immediate erosion protection, on exposed soils during periods of short construction delays (or over winter months), and/or on slopes requiring stabilization until permanent vegetation can be established. Wattles will be:
 - 8-10 inches in diameter and 35-30 feet in length
 - Installed perpendicular to the flow direction and parallel to the slope contour
 - Placed in shallow trenches, staked along the contour of disturbed or newly constructed slopes
 - Installed from the base of the slope
 - Installed snugly into trenches and overlap the ends of adjacent wattles 12 inches behind one another
 - Staked at end of each wattle and at 4-ft centers along entire length of wattle, with 2-3 inches of stake protruding above the wattle.

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.5 Element 5: Stabilize Soils

West of the Cascade Mountains Crest

Season	Dates	Number of Days Soils Can be Left Exposed
During the dry season	May 1 – September 30	7
During the wet season	October 1 – April 30	2

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

Anticipated project dates: Start: 01/04/2021 End: 12/31/2025

Will you construct during the wet season?

☒ Yes ☐ No

List and describe BMPs: Temporary and permanent seeding, coir matting, temporary plastic sheeting, mulch

- Erodible soil exposure, including stockpiles, will be limited to the minimum time necessary and covered using temporary and permanent seeding, coir matting, temporary plastic sheeting, and mulch.
- Areas of exposed soil shall be phased to minimize the amount of exposed soil at any given time.
- Seeding will be used on disturbed areas that have reached final grade or that will remain unworked for more than 30 days. Seeding will:
 - Occur between April 1-June 30 and September 1-October 1, any seeding that occurs between July 1- August 30 will be irrigated until 75% grass cover is established. If seeding occurs between October 1 and March 30, an erosion blanked will be utilized until 75% grass cover is established.
 - Utilize mulch at all times
 - Be placed on all disturbed areas not otherwise vegetated at final site stabilization
 - Follow design and installation specifications set forth in SWMMWW BMP C120
- Coir matting will be installed on slopes after final grade and track walk up and down the slope is completed. Hydromulch with seed and fertilizer will be installed on top of matting. Matting will maintain good contract with the ground and any areas of the mat that become damaged will be repaired immediately.

- If discovered during construction, contaminated soil shall be kept separate from other soil or hauled directly to an off-site disposal facility. General requirements for contaminated soil is as follows:
 - Specify contaminated stormwater and dewatering containment systems.
 - Specify pre-treatment and treatment system design information prior to work (flow-through treatment systems are optional, but if used design information and an engineering report will be required prior to installation).
 - Provide a Request for Chemical Treatment Form prior to use of chemical treatment.
 - Specify Indicator Levels (numeric effluent limits) that must be met prior to a discharge.
 - List sampling and reporting requirements for monthly Discharge Monitoring Reports (DMRs).
 - Specify use of registered or accredited laboratory to test samples.
 - Specify contingency plans if Indicator Levels cannot be met (e.g., sanitary sewer or off-site disposal).
 - Provide specifics on contaminated soil and sediment segregation or direct haul to off-site disposal facility.

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.6 Element 6: Protect Slopes

Will steep slopes be present at the site during construction?

☒ Yes ☐ No

List and describe BMPs: Slopes will be protected with hydroseed, mulch, vegetation, coir matting (if slopes exceed 3:1; employing aforementioned BMPs), and/or angular rock (for areas susceptible to erosivity).

Slopes will be designed and constructed to protect and minimize erosion per WSDOT TESC Manual.

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.7 Element 7: Protect Drain Inlets

List and describe BMPs: Coir logs/wattles (BMPs described above), silt dikes (BMP208), sand bags, catch basin inserts.

- Silt dikes will be made of urethane foam sewn into a woven geosynthetic fabric and be 10 inches to 14 inches high in the center, with a 20-inch to 28-inch base. A 2-foot apron will extend beyond both sides of the dike along its standard section of 7 feet. Additionally, silt dikes will:
 - Be installed with ends curved up to prevent water from flowing around the ends
 - The fabric flaps and check dam units are attached to the ground with wire staples. Wire staples will be No. 11 gauge wire and should be 200 mm to 300 mm in length
 - When multiple units are installed, the sleeve of fabric at the end of the unit will overlap the abutting unit and be stapled
 - When used as check dams:
 - Silt dikes will be located and installed as soon as construction will allow
 - Silt dikes will be placed perpendicular to the flow of water
 - The leading edge of the silt dike will be secured with rocks, sandbags, or a small key slot and staples
 - In the case of grass-lined ditches and swales, check dams and accumulated sediment will be removed when the grass has matured sufficiently to protect the ditch or swale unless the slope of the swale is greater than 4 percent. The area beneath the check dams will be seeded and mulched immediately after dam removal

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.8 Element 8: Stabilize Channels and Outlets

Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches, that will be installed at the outlets of all conveyance systems.

List and describe BMPs: Hydroseeding (BMP C120), coir matting (BMP C122), rock check dams, angular rock, silt dikes, temporary drop structures. All channel stabilization methods will follow previously discussed BMPs (Sections 2.1.4-2.1.7).

Installation schedules: to be developed by the contractor prior to start of field work

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.9 Element 9: Control Pollutants

The pollutants listed in Table 2 are anticipated to be present on the site.

Table 2 – Pollutants

Pollutant
Petroleum hydrocarbons
Benzene
Xylenes
Ethylbenzene
Diesel-range hydrocarbons
Gasoline
Volatile-range hydrocarbons
Toluene
Diesel
Lube Oil
Lead
Naphthalenes
PAHs

List and describe BMPs:

- A Spill Prevention, Control, and Countermeasure plan (SPCC) will be established based on known contaminants on the site and on S455 in the SWMMWW. A pollution prevention team with members from WSDOT, Ecology, and the design-builder will be formed in accordance with S453 in the SWMMWW SPCC.
- Contaminated soil shall be kept separate from other soil or hauled directly to an off-site disposal facility. General requirements for contaminated soil is as follows:
 - Specify contaminated stormwater and dewatering containment systems.
 - Specify pre-treatment and treatment system design information prior to work (flow-through treatment systems are optional, but if used design information and an engineering report will be required prior to installation).
 - Provide a Request for Chemical Treatment Form prior to use of chemical treatment.
 - Specify Indicator Levels (numeric effluent limits) that must be met prior to a discharge.
 - List sampling and reporting requirements for monthly Discharge Monitoring Reports (DMRs).
 - Specify use of registered or accredited laboratory to test samples.
 - Specify contingency plans if Indicator Levels cannot be met (e.g., sanitary sewer or off-site disposal).
 - Provide specifics on contaminated soil and sediment segregation or direct haul to off-site disposal facility.

- Preventative maintenance and good housekeeping measures will be implemented (S454)
- Employees will be trained on how to identify Pollution Prevention Team Members, pollutant sources, pollutant control measures, spill prevention and response, emergency response procedures, and handling practices that are environmentally acceptable
- Inspections will be carried out by qualified personnel monthly following S457 and inspectors will complete inspection reports following S458

Installation schedules: duration of project

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?

☒ Yes ☐ No

List and describe BMPs: Creating a designated area for fueling and maintenance of all equipment and vehicles that contain petroleum and other hazardous liquids. On-site fueling tanks must include secondary containment that is capable of containing 110% of the volume of the largest tank. The area would be lined with an impervious sheeting and sand that could be hauled off-site. The designated area would be graded such that runoff could not migrate into adjacent areas.

Installation schedules: duration of project

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

Will wheel wash or tire bath system BMPs be used during construction?

☒ Yes ☐ No

List and describe BMPs: Vehicle and wheel wash protocols will follow the BMPs discussed in Section 2.1.2. Wheel/vehicle wash byproduct will be disposed into sanitary sewer system or hauled offsite to a permitted and approved disposal facility.

Installation schedules: to be developed by the contractor prior to start of field work
Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

Will pH-modifying sources be present on the site?

☒ Yes ☐ No

Table 3 lists sources present on the site that could modify the pH.

Table 3 – pH-Modifying Sources

	None
x	Bulk cement
x	Cement kiln dust
	Fly ash
x	Other cementitious materials
x	New concrete washing or curing waters
x	Waste streams generated from concrete grinding and sawing
	Exposed aggregate processes
	Dewatering concrete vaults
x	Concrete pumping and mixer washout waters
x	Recycled concrete
	Other (e.g., calcium lignosulfate) [please describe]

List and describe BMPs: Dry ice and chitosan will be used to adjust pH of stormwater if outside the range of 6.5 to 8.5 su.

Obtain written approval from Ecology before using chemical treatment with the exception of CO₂ or dry ice to modify pH. The following procedural BMPs will be employed:

- Potential high pH water will be isolated in order to treat it separately from other stormwater on-site
- Water will be stored in an acceptable storage facility, detention pond, or containment cell prior to pH treatment
- pH treatment structure size will be sufficient to hold the amount of water that is to be treated, with at least 2 feet of freeboard
- The results of operator-collected samples and water clarity observations will be recorded
- CO₂ (dry ice) will be added until the pH falls into the range of 6.9-7.1
- Water will be slowly discharged to ensure water does not get stirred up in the process
- Treated water will be discharged through a designated pond or hauled off-site to a permitted and approved disposal facility.
- Excess sludge will be disposed of properly as concrete waste
- Disposal will comply with applicable local, state, and federal regulations

Installation schedules: duration of project

Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

2.1.10 Element 10: Control Dewatering

Table 4 indicates BMPs to be used for dewatering.

Table 4 – Dewatering BMPs

x	Infiltration
x	Transport off site in a vehicle (vacuum truck for legal disposal)
x	Ecology-approved on-site chemical treatment or other suitable treatment technologies
	Sanitary or combined sewer discharge with local sewer district approval (last resort)
x	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)

List and describe BMPs: Baker tanks, infiltration, sanitary sewer (upon approval)

- Infiltration systems will be evaluated for feasibility based on soil reports compiled by either a professional soil scientist or licensed on-site sewer designer and comply with local setbacks, as determined by county and city ordinances. Infiltration systems will be designed in accordance with the following BMPs:
 - Access for vehicles will be allowed to easily maintain the forebay (presettling basin) area and not disturb vegetation, or resuspend sediment any more than absolutely necessary
 - The slope of the infiltration basin bottom will not exceed 3% in any direction
 - The infiltration basin will be sized for a maximum ponding depth of between 2 and 6 feet
 - A minimum of one foot of freeboard is recommended when establishing the design ponded water depth. Freeboard is measured from the rim of the infiltration basin to the maximum ponding level or from the rim down to the overflow point if overflow or a spillway is included
 - Infiltration basins will have sufficient vegetation established on the basin floor and side slopes to prevent erosion and sloughing and to provide additional pollutant removal
 - Infiltration basins will be open or covered with a 6 to 12-inch layer of filter material such as coarse sand, or a suitable filter fabric to help prevent the buildup of impervious deposits on the soil surface
 - Embankments, emergency spillways, spoil and borrow areas, and other disturbed areas will be stabilized and planted with grass.

- Baker tanks will be properly sized based on consultation with Ecology

Installation schedules: to be developed by the contractor prior to start of field work
 Inspection and maintenance plan: to be developed by contractor

Responsible staff: to be determined by contractor

2.1.11 Element 11: Maintain BMPs

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (see Volume II of the SWMMWW or Chapter 7 of the SWMMEW) and in compliance with NPDES and other permits obtained for the project.

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site. If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC 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 stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

2.1.12 Element 12: Manage the Project

Phasing, inspection, and monitoring will be as follows:

- The Project will be phased to the maximum extent practicable and seasonal work limitations will be considered.
- Inspection and monitoring:
 - All BMPs will be inspected, maintained, and repaired so they function as intended.
 - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. Sampling locations are indicated on the site map (Appendix A). Sampling station(s) are located in accordance with applicable CSWGP requirements.
 - The SWPPP will be updated, maintained, and implemented in accordance with CSWGP Special Conditions S3, S4, and S9.

As site work progresses, the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to update content. Table 5 indicates

management BMPs that will be implemented, while Table 6 indicates when each BMP will be implemented.

Table 5 – Management

x	Design the project to fit the existing topography, soils, and drainage patterns
x	Emphasize erosion control rather than sediment control
x	Minimize the extent of the area exposed and duration of exposure
x	Keep runoff velocities low
x	Retain sediment on the site
x	Thoroughly monitor site and maintain all erosion and sediment control measures
x	Schedule major earthwork during the dry season
x	Use strategic sequencing to minimize unnecessary disturbance

Table 6 – BMP Implementation Schedule

Phase of Construction Project	Stormwater BMPs	Date	Wet/Dry Season
[Insert construction activity]	[Insert BMP]	[MM/DD/YYYY]	[Insert Season]

2.1.13 Element 13: Protect Low Impact Development (LID) BMPs

LID facilities will be inspected monthly to determine if the facilities are functioning properly. If sedimentation and/or compaction is affecting the function of the facilities, the sediment shall be removed and/or the soils shall be decompacted. If compaction is anticipated during construction, a protective geotextile matting shall be installed to prevent compaction. Permeable pavements (if used) shall be cleaned with a vacuum truck at a minimum of four times a year.

Table 7 provides names and contact information for pollution prevention team members.

3.0 Pollution Prevention Team

Table 7 – Team Information

Title	Name(s)	Phone Number
Certified erosion and sediment control lead (CESCL)	TBD	
Resident engineer	TBD	
Emergency ecology contact	TBD	
Emergency permittee/ owner contact	TBD	
Non-emergency owner contact	TBD	
Monitoring personnel	TBD	
Ecology regional office	Northwest Regional Office	425-649-7000

4.0 Monitoring and Sampling Requirements

Monitoring includes visual inspection, water quality sampling and analysis for parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- A record of site inspections
- Stormwater sampling data

The site log book must be maintained on site or within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

Numeric effluent limits may be required for certain discharges to 303(d) listed waterbodies. See CSWGP Special Condition S8 and Section 5 of this template.

Complete the following paragraph for sites that discharge to impaired waterbodies for fine sediment, turbidity, phosphorus, or pH:
--

4.1 Site Inspection

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

4.2 Stormwater Quality Sampling

4.2.1 Turbidity Sampling

Requirements include calibrated turbidity meter or transparency tube to sample site discharges for compliance with the CSWGP. Sampling will be conducted at all discharge points at least once per calendar week.

Table 8 indicates the method for sampling turbidity that will be used.

Table 8 – Turbidity Sampling Method

x	Turbidity meter/turbidimeter (required for disturbances 5 acres or greater in size)
	Transparency tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 NTU and a transparency of less than 33 centimeters.

If the discharge's turbidity is 26 to 249 NTU or the transparency is less than 33 cm but equal to or greater than 6 cm, the following steps will be followed:

1. Review the SWPPP for compliance with Special Condition S9. Revise appropriately within 7 days of the date the discharge exceeded the benchmark.
2. Begin to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problem(s) within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU or the transparency is 6 cm or less at any time, the following steps will be conducted:

1. Telephone Ecology's Northwest regional office by telephone (425-649-7000) or submit an electronic report to the applicable Ecology region's Environmental Report Tracking System (ERTS) within 24 hours at <https://www.ecology.wa.gov/About-us/Get-involved/Report-an-environmental-issue>.
2. Begin to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problem(s) within 10 days of the date the discharge

exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.

3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
 - Turbidity is 25 NTU (or lower)
 - Transparency is 33 cm (or greater)
 - Compliance with the water quality limit for turbidity is achieved:
 - 1 – 5 NTU over background turbidity, if background is less than 50 NTU
 - 1% – 10% over background turbidity, if background is 50 NTU or greater
 - The discharge stops or is eliminated.

4.2.2 pH Sampling

pH monitoring is required for “significant concrete work” (greater than 1,000 cubic yards poured concrete or recycled concrete over the life of the project). The use of engineered soils also requires pH monitoring. Engineered soils are those with soil amendments including but not limited to Portland cement-treated base (CTB), cement kiln dust (CKD), or fly ash.

For significant concrete work, pH sampling will start the first day concrete is poured and continue until it is cured, typically 3 weeks after the last pour.

For engineered soils and recycled concrete, pH sampling will begin when engineered soils or recycled concrete are first exposed to precipitation and will continue until the area is fully stabilized.

If the measured pH is 8.5 or greater, the following steps will be taken:

1. Prevent high-pH water from entering storm sewer systems or surface water.
2. Adjust or neutralize the high-pH water to the range of 6.5 to 8.5 su using appropriate technology such as carbon dioxide (CO₂) sparging (liquid or dry ice).
3. Obtain written approval from Ecology before using chemical treatment other than CO₂ sparging or dry ice.

The pH sampling method to be used is indicated in Table 8.

Table 8 – pH Sampling Method

x	pH meter
	pH test kit
	Wide range pH indicator paper

5.0 Discharges to 303(d) or Total Maximum Daily Load Waterbodies

5.1 303(d) Listed Waterbodies

Is the receiving water 303(d) (Category 5) listed for turbidity, fine sediment, phosphorus, or pH?

Yes

No

List the impairment(s): Not applicable.

5.2 TMDL Waterbodies

Waste load allocation for CSWGP discharges: N/A

List and describe BMPs: N/A

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge.

If needed, the Construction Stormwater General Permit Proposed New Discharge to an Impaired Water Body form is included in Appendix F.

6.0 Reporting and Record Keeping

6.1 Record Keeping

6.1.1 Site Log Book

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

6.1.2 Records Retention

Records will be retained during the life of the project and for a minimum of 3 years after permit coverage is terminated, in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit coverage letter
- SWPPP
- Site log book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

6.1.3 Updating the SWPPP

The SWPPP will be modified if:

- It is found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site
- There is a change in 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 will be modified within 7 days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

6.2 Reporting

6.2.1 Discharge Monitoring Reports

Cumulative soil disturbance is one (1) acre or larger; therefore, discharge monitoring reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period, the DMR will be submitted as required, reporting “No discharge.” The DMR due date is 15 days after the end of each calendar month.

DMRs will be reported online through Ecology’s WQWebDMR System.

<https://www.ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Water-quality-permits-guidance/WQWebPortal-guidance>

6.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit are not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24 hours of the failure to comply by calling the applicable regional office ERTS phone number (regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge or pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within 5 days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within 5 days, unless Ecology requests earlier.

Anytime turbidity sampling indicates turbidity is 250 NTUs or greater, or water transparency is 6 cm or less, the Ecology regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- Northwest Region at (425) 649-7000

The following information will be included:

1. Reporter's name and phone number
2. Permit number
3. City or county of project
4. Sample results
5. Date and time of call
6. Date and time of sampling
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO₂ sparging is planned for adjustment of high-pH water.

Appendices

A. Site Map

B. BMP Detail

C. Correspondence

D. Site Inspection Form

E. Construction Stormwater General Permit (CSWGP)

F. 303(d) List Waterbodies / TMDL Waterbodies Information

G. Contaminated Site Information

H. Engineering Calculations