

**CONSTRUCTION PRACTICES PLAN CHECKLIST
COWLITZ RIVER HYDROELECTRIC PROJECT, 2016**

All construction projects required by the license that are in or near waterways (within 200-feet of the ordinary high water mark and / or greater than one (1) acre) shall follow the applicable construction practices listed below to control sediment, disturbances, and other potentially detrimental effects to listed salmonids of the Cowlitz River.

This Plan documents how the requirements listed in the Cowlitz River Hydroelectric Project's License, Article 416, Appendix E will be satisfied.

Project Title / Activity: Gravel Augmentation – Settlement Agreement License Article 10

Location: Cowlitz Salmon Hatchery

Specification Number: None

Project Lead: Steve Fischer

Title: Sr. Principal Engineer

Mailing Address: 3628 South 35th Street, Tacoma, Washington 98409

Instructions:

This Plan and the corresponding appendixes will be submitted to the Federal Energy Regulatory Commission (FERC) for approval 90-days prior to the planned activity and will be included in the project file.

The Project Lead will include a brief description of how the specific construction practices listed below will be satisfied for the identified project.

Specific Best Management Practices (BMPs) that do not apply to this project will be identified with the initials "NA".

Within this document the terms Best Management Practices (BMPs) and Reasonable and Prudent Measures (RPMs) are considered equivalent.

ITEM

a. Minimize Construction Area: Construction impacts will be confined to the minimum area necessary to complete the project. The contractor shall respect the limits of the project and not operate any equipment outside of the established area or conduct any activities that will disturb the surrounding area.

Description: *The proposed access road along the river is limited to an area needed for dredging during the next few years. Later extension of the road down the river to access further portions of the gravel bar can be accomplished later. The permanent nature of the road will facilitate annual dredging without further disturbance to vegetation.*

b. Limit Impacts to Stream Bank: Alterations or disturbance of the stream banks and existing riparian vegetation will be minimized to the greatest extent possible.

Description: *As stated above we have limited the initial dredging site disturbance. At the placement site, each year we will only disturb the same site which is a relatively short length of shoreline.*

c. Herbicide Application: No herbicide application should occur as part of this project except over areas that will immediately be covered with asphalt pavement with strict adherence to the product label requirements. Mechanical removal of undesirable vegetation and root nodes will be permitted.

Description: *No herbicides will be used on this project, including under the geotextile fabric for the road.*

d. Limit Impacts to Vegetation: All existing vegetation within 150-feet of the edge of the bank will be retained to the greatest extent possible.

Description: *Only the road area for the dredging site should be disturbed and only a narrow access width for placement will be disturbed.*

e. Timing of Inwater Work: Work below the bankfull elevation will be completed during the State of Washington's or the Corps' preferred inwater work period as appropriate for the project area, unless otherwise approved in writing by National Oceanic and Atmospheric Administration (NOAA) Fisheries. The State of Washington's preferred inwater work periods are listed in Chapter 220-110 of the Washington Administrative Code (WAC).

For this project the preferred inwater work period is:

August 1 through August 31 (Fill in dates)

f. Cessation of Work: Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage. All materials, equipment, and fuel must be removed if flooding in the area is expected to occur within 24-hours.

Description: *Stipulated in the PECP.*

g. Fish Screens: All water intakes used for this project, including pumps used to isolate an inwater work area, will have a fish screen installed. The specific criteria for fish screens are addressed in the Pollution and Erosion Control Plan (PECP) attached as Appendix A.

Description: *N/A.*

h. Fish Passage: Provide passage for any adult or juvenile salmonids species present in the project area during construction, unless otherwise approved in writing by NOAA Fisheries, and maintain passage after construction for the life of the project. Passage will be designed in accordance with NOAA Fisheries' "Anadromous Salmonids Passage Facility Guidelines and Criteria" (2003). Upstream passage is required during construction if it previously existed.

Description: N/A.

i. General Construction Activities: Construction activities associated with habitat enhancement and their erosion control measures will follow Best Management Practices (BMP) and other performance standards contained in the applicable county, state and federal permits. Anticipated permits required for this project include:

	Date Submitted
Hydraulic Project Approval (HPA), Dept. of Fish and Wildlife	<i>Will be submitted concurrently with this plan.</i>
Shoreline, Local County Government	<i>Will be submitted concurrently with this plan.</i>
Section 401, Water Quality Certification, Dept. of Ecology	<i>Will be submitted concurrently with this plan.</i>
Section 404 / Section 10, Corps of Engineers	<i>Will be submitted concurrently with this plan.</i>
Notice of Intent, (NOI) for coverage under the National Pollutant Discharge Elimination System, (NPDES) submitted to Dept of Ecology if earth disturbing activity is one acre or greater.	N/A

j. Pollution and Erosion Control Plan: The Pollution and Erosion Control Plan (PECP) will be completed by the Project Lead and attached as Appendix A to this overall Construction Practices Plan (CPP) and will also be included in the contract documents. Once completed, this PECP will also serves as the Storm Water Pollution Prevention Plan (SWPPP) under the Washington State Department of Ecology NPDES Permit.

k. Construction Discharge Water: All construction water discharged during this project (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) will be treated through standard BMPs.

Description: *Protection of shorelines from water discharging from dredged material is covered in the attached PECP*

l. Habitat Enhancement Activities: During completion of habitat enhancement activities, no pollutants of any kind (sewage, waste spoils, petroleum products, etc.) will come in contact with the water body or wetlands nor their substrate below the "mean high-high water" elevation or 10-year flood plain elevation, whichever is greater.

Description: *Covered in PECP.*

m. Treated Wood: The use or disposal of Treated Wood is described in the attached PECP.

Description: N/A.

n. Pre-construction Activity: Pre-construction activities for this project are included in the PECP.

Description: *Erosion protection measures to install first are covered in the PECP.*

o. Temporary Access Roads: Temporary roads are addressed in the PECP.

Description: *N/A.*

p. Vehicles and Heavy Equipment: Vehicles and heavy equipment used during this project shall have the least adverse impacts on the environment as possible. Additional criteria are included in the PECP.

Description: *Covered in PECP.*

q. Site Preparation: Site preparation and the Conservation of Native Materials for site rehabilitation are addressed in the PECP.

Description: *Native vegetation is to be protected except where necessary to disturb as covered in the PECP.*

r. Isolation of Inwater Work Area: If adult or juvenile fish are reasonably certain to be present, or if the work area is less than 300-feet upstream of spawning habitats, the work area shall be completely isolated from the active flowing stream unless otherwise approved in writing by NOAA Fisheries. Specific details concerning this activity are included in the PECP.

Description: *Reasonable implementation of this plan requires in-water work. Measures to reduce impact to fish which may be present are contained in PECP. Permission from NOAA to dredge and place gravel in the water is hereby requested. The approval of this plan by NOAA will be evidence of such.*

s. Capture and Release: Standardized procedures for this activity are included in the PECP.

Description: *N/A.*

t. Earthwork: Earthwork (including drilling, excavation, dredging, filling and compacting) is included in the PECP.

Description: *Covered in PECP.*

u. Implementation Monitoring: Tacoma Power will submit a monitoring report to FERC and NOAA Fisheries within 120-days of the project completion describing the success in meeting the Reasonable and Prudent Measures (RPMs) and the associated terms and conditions of the Biological Opinion and the attached PECP. The format for this report is included in Appendix B.

Description: *A report will be submitted following year one. Since no construction activities are required in subsequent years until expansion of the dredging access road, no annual reports will be submitted. This plan essentially describes processes already in place including vehicle inspection checklists that were already implemented when the City of Tacoma became a signatory to the NOAA approved Regional Road Maintenance ESA Program. That program, while written for road maintenance, provides guidelines and processes for routine and ongoing earth disturbing activities. Rather than create new processes and reports for ongoing work at the Cowlitz project we propose that they maintain their files of inspection checklists and perform the work as outlined in this PECP. NOAA, FERC or any other agency is welcome to inspect the project files at any time.*

Date Prepared: _____

Signature: _____

**POLLUTION AND EROSION CONTROL PLAN
COWLITZ RIVER HYDROELECTRIC PROJECT, FERC NO. 2016**

TITLE

This PECP has been developed for the following project and addresses the specific issues listed in the table of contents.

Project Title / Activity:	Gravel Augmentation – Settlement Agreement License Article 10
Location:	Cowlitz Salmon Hatchery.
Specification No:	None
Project Lead:	Steve Fischer
Title:	Sr. Principal Engineer
Mailing Address:	3628 South 35 th Street, Tacoma, WA 98409
Date Prepared:	
Signature:	

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SECTION 1: ESTABLISH PROJECT BOUNDARY AND CLEARING LIMITS

The following actions shall be completed prior to any significant alterations to project area:

- A. Tacoma Power, Cowlitz River Project, personnel will be performing the initial construction and 1st years dredging. It is possible in future years that dredging contractors with longer reach equipment will be utilized. Should contractors be used, they shall be furnished copies of these plans and work shall be monitored by the Cowlitz Project Manager.
- B. Tacoma Power will clearly flag all boundary and clearing limits associated with the site access and overall construction to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond project's boundary
- C. Construction activity or movement of equipment into existing vegetated areas shall not occur until the limits are clearly marked.
- D. The Cowlitz Project Manager shall ensure all construction personnel understand the boundary limits and they shall not operate any equipment outside of the established area or conduct any activities that will disturb the surrounding area.

SECTION 2: CONSTRUCTION SITE STABILIZATION AND PROTECTION

Prior to major earth disturbing activities, one or more of the following Best Management Practices (BMPs) shall be established by Tacoma Power at all locations where water runoff may be expected to leave the site:

A. Silt Fences:

Silt fences shall be used in year one of the program along the river to protect the vegetative buffer from excess siltation due to road construction. The silt accommodations and fences shall be removed at the end of year one activities.

- (i.) Install down slope of all exposed areas where stormwater and dredging runoff may occur as shown on the plans.
- (ii.) Silt fencing shall be purchased in continuous rolls and cut to avoid the use of joints. When joints are necessary, the filter cloth shall be spliced together only at a support post, with a minimum 6-inch overlap and securely fastened at both ends to overlapping posts.
- (iii.) Posts shall be spaced a maximum of 6-feet apart and driven securely into the ground.
- (iv.) A trench shall be excavated approximately 8-inches wide and 12-inches deep along the line of posts and upslope from the barrier. The bottom flap of filter fabric shall be placed into trench and the trench backfilled with washed gravel.
- (v.) If standard strength filter fabric is used, a wire mesh support fence shall be included between the fabric and the posts.
- (vi.) Filter fabric shall not be stapled to existing trees.
- (vii.) The filter fabric shall be attached to the posts with heavy-duty staples that are at least 1-inch long, tie wires or hog rings.
- (viii.) Silt fencing shall not be removed until the upslope area has been permanently stabilized.
- (ix.) All silt fencing shall be inspected immediately after each rainfall and at least daily during prolonged rainfall events with all required repairs immediately completed.
- (x.) Silt fencing shall be installed parallel to any slope contours.
- (xi.) The contributing length of exposed soil to a fence line shall not be greater than 100-feet.
- (xii.)
- (xiii.) Do not install below an outlet pipe or weir.
- (xiv.) Do not drive over or fill up against the silt fencing.

B. Straw/Hay Bales:

In subsequent years straw bales shall be used along the road at the dredging site to protect the vegetative buffer. Cleanup at the end of the annual work will consist of removal of excess silt as required and spreading of the bales as mulch.

- (i.) Bales shall be placed in a single row, lengthwise, on the contour, with ends of adjacent bales tightly abutting one another.
- (ii.) All bales shall be either wire-bound or string tied with bindings oriented around the sides rather than the top and bottoms of the bales to prevent rapid deterioration of the bindings.
- (iii.) Each bale shall be anchored by at least two (2) stakes driven through the bale. The first stake in each bail shall be driven towards the previously laid bale in order to force the bales together.

C. Emergency Erosion Control Supplies:

As a minimum, the contractor shall maintain the following materials on-site for emergency erosion control needs.

- (i.) 10-percent of the total quantity of erosion control material initially used to establish the site.
- (ii.) Silt fence and/or straw bales.
- (iii.) Oil-Absorbing pads.
- (iv.) Floating Oil-Absorbing boom.
- (v.) These items are in addition to Tacoma's standard Spill Prevention and Control Plan.

D. Construction Entrance:

A construction entrance identified on the plans shall be constructed prior to all other work to reduce erosion and prevent sediment from being tracked onto existing roadways.

- (i.) The new construction access shall consist of approximately 10-inches of 4-inch to 8-inch quarry spalls topped with 2-inch to 3-inch of crushed rock for a total pad thickness of 12-inches.
- (ii.) The construction access shall be the full width of the vehicle ingress and egress area and 50-feet long.
- (iii.) The construction access shall be placed on firm, compacted subgrade.
- (iv.) Additional crushed rock shall be added as necessary to maintain the proper function of the construction access.
- (v.) The overall site condition shall be monitored throughout the project and crushed rock added as necessary to ensure that it does not become overly muddy or dusty depending on the weather conditions.

E. Vehicle and Equipment Staging:

- (i.) All vehicle staging, cleaning, maintenance, refueling and fuel storage except that needed by service boats shall be performed in a "Vehicle Staging Area" located at least 150-feet from any stream, water body or wetland unless specially requested and approved in writing by NOAA Fisheries.
- (ii.) All vehicles operating within 150-feet of a stream, water body or wetland shall be inspected daily for fluid leaks and all necessary repairs performed within the staging area.
- (iii.) Tacoma shall document these Daily Vehicle Inspections on the attached "Daily Gravel Dredging and Placement Inspection Log" included as Appendix A-1 and file these inspection sheets at the Cowlitz Project Office.
- (iv.) If while operating the equipment, repairs become necessary, the machinery will be returned to the staging area for the required maintenance unless doing so will result in the release of additional pollutants or hazardous materials.
- (v.) Before operations begin and as often as necessary during the project, any equipment that shall be operating below the high-water mark shall be steam cleaned until all visible external oil, grease, mud or other visible contaminants are removed. The vehicle washing shall occur in a location that will not contribute untreated wastewater to any flowing stream or drainage area.
- (vi.) At the end of the day all vehicles shall be removed from within or above the waterway and parked in the established staging area.

SECTION 3: CONSTRUCTION PHASE

The following activities shall be followed throughout the construction phase:

A. Vehicles and Heavy Equipment:

Vehicles and heavy equipment selected shall have the least adverse impacts on the environment as possible. Specific criteria include but are not limited to minimum size and lowest ground pressure.

B. Conservation of Native Materials:

- (i.) If possible, native materials shall be left where they were found.
- (ii.) If materials are moved, damaged or destroyed, they shall be replaced with a functional equivalent during site rehabilitation.
- (iii.) Attempts will be made to leave the root nodes in place from all trees or bushes that are cut down during the clearing operation.

C. Regulated or Hazardous Products:

- (i.) A list of known regulated or hazardous products and materials that are used at the Cowlitz Project are available at the City's MSDS-PRO intranet site.
- (ii.) The City updates this list whenever additional regulated or hazardous materials are delivered to the project site.
- (iii.) This list also contains the specific procedures for inventory, storage, handling and monitoring.
- (iv.) The corresponding Material Safety Data Sheets (MSDS) for these products is available on the intranet site.
- (v.) If at any time during work the City finds buried chemical containers, such as drums, or any unusual conditions indicating disposal of chemicals, the contractor shall immediately notify the Department of Ecology's Southwest Regional Spill Response Office at (360) 407-6300.

D. Spill Containment and Control Plan:

- (i.) Four site specific, spill prevention control and countermeasure plans for Mossyrock, Mayfield, Cowlitz Salmon Hatchery and Cowlitz Trout Hatchery per 40 CFR 112 are on file at the Cowlitz River Project. These plans provide guidance for routine projects and ongoing activity such as this.
- (ii.) In the event of a discharge of oil, fuel, or chemicals into a stream, water body or wetland or onto land with a potential for entry into these state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials
- (iii.) The following is a list of agencies that shall be notified by Tacoma Power in the event of a hazardous product or material spill:

<u>Spill Circumstance</u>	<u>Agency</u>
Release of hazardous product or material into the soil or water.	Washington State Department of Ecology, SWRO Spill Response Team, 360-407-6300.
Petroleum products released into the water.	National Response Center, 800-424-8802.

- (iv.) In the event that Tacoma Power is unable to contain and clean-up the spill or release, they shall immediately contact: Cowlitz Clean Sweep, 888-423-6319 or another preapproved response contractor.

E. Protection of Fish for Inwater Work Areas:

- (i.) The time of work shall be limited to August 1 to August 31 of each year.
- (ii.) The below water area to receive gravel shall first be inspected by a Tacoma Fisheries Biologist.
- (iii.) Gravel shall not be dropped into the water, but shall slowly be pushed into the water such that fish may move away from the gravel being advanced.
- (iv.) Gravel shall only be placed during daylight hours.

F. Water Discharge from Dredged Materials:

All water discharging from dredged material shall be filtered before reentering the river. A vegetative buffer shall be maintained between the access road and rivers edge and the work site shall also be protected with a silt fence. Trucks shall remain at the dredging site during loading until substantially all water running from the load has ceased. Silt fences, vegetative buffer and/or straw bales shall be inspected and maintained and work ceased for repairs if turbid water is caused in the river.

G. Distressed, Dying or Fish Kill:

- (i.) In the event of finding distressed or dying fish, Tacoma Power shall collect fish specimens and water samples in the affected area and within the first hour of such conditions, make every effort to have the water samples analyzed for dissolved oxygen and total sulfides.
- (ii.) In the event of a fish kill, immediately notify Ecology's Southwest Regional Spill Response Office at (360) 407-6300, the SWRO Federal Permit Coordinator, Washington Department of Fish and Wildlife, and NOAA Fisheries Law Enforcement Office at 800-853-1964. Also notify Michelle Day of NOAA Fisheries at 503-736-4734. If Ms. Day cannot be reached, leave a message for her, then call Keith Kirkendall at 503-230-5431. Notification shall include a description of the nature and extent of the problem, any actions taken to correct the problem and any proposed changes in operations to prevent further problems.

H. Cessation of Work:

Project operations will cease under high flow conditions that may result in inundation of the project area, except for efforts to avoid or minimize resource damage. All materials, equipment, and fuel must be removed if flooding in the area is expected to occur within 24-hours.

SECTION 4: INSPECTION OF EROSION CONTROLS

During construction, Tacoma Power shall inspect all erosion control facilities and monitor in-stream turbidity daily during the rainy season and weekly during the dry season or after any major storm event that produces runoff to ensure the controls are working adequately. (Mandatory Activity)

A. Erosion Control Log Sheet:

Tacoma Power shall record these inspections on the Daily Gravel Dredging and Placement Inspection Log attached as Appendix A-1 and place copies of these in the project file.

B. Replacement of Ineffective Controls:

If monitoring or inspections show that the erosion controls are ineffective Tacoma Power shall immediately mobilize work crews to make the necessary repairs, install replacement structures and/or install additional controls as necessary. Ineffective controls and replacements or improvements will be noted on the Erosion Control Inspection Log Sheet.

C. Sediment Removal:

Sediment from the erosion control facilities shall be removed once it has reached one-third of the exposed height of the control structure.

SECTION 5: PERMANENT STABILIZATION MEASURES

A. Removal of Temporary Measures:

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

APPENDIX A-1

DAILY GRAVEL DREDGING AND PLACEMENT INSPECTION LOG

	OPERATOR INITIALS						
	DATE						
CLEAN / INSPECT BOOM							
INSPECT ENGINE FOR OIL LEAKS							
ENGINE OIL LEVEL							
INSPECT HYDRAULIC SYSTEM FOR OIL LEAKS							
HYDRAULIC OIL LEVEL							
WIPE EXCESS GREASE							
RETENTION BARRIERS INTACT							
PRESSURE WASH BOOM ON 1st DAY							

Note: All fueling must be done in staging area away from lake

COMMENTS

APPENDIX A-2

Approved Seed Mixes For Various Locations

Temporary Erosion Control Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Chewings or Blue Grass	40	98	90
Perennial Rye	50	98	90
Redtop or Colonial Bentgrass	5	92	85
White Dutch Clover	5	98	90

Landscaping Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Perennial Rye Blend	70	98	90
Chewings and Red Fescue Blend	30	98	90

Low-Growing Turf Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Dwarf Tall Fescue	45	98	90
Dwarf Perennial Rye (Barclay)	30	98	90
Red Fescue	20	98	90
Colonial Bentgrass	5	98	90

Bioswale Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Tall or Meadow Fescue	75-80	98	90
Seaside/Creeping Bentgrass	10-15	92	85
Redtop Bentgrass	5-10	90	80

Wet Area Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Tall or Meadow Fescue	60-70	98	90
Seaside/Creeping Bentgrass	10-15	92	85
Meadow Foxtail	10-15	90	80
Alsike clover	1-6	98	90
Redtop Bentgrass	1-6	92	85

Meadow Seed Mix

	Percent Weight	Percent Purity	Percent Germination
Redtop or Oregon Bentgrass	20	92	85
Red Fescue	70	98	90
White Dutch Clover	10	98	90