
Construction Environmental Sediment Management Plan

for

Little Qualicum River Bridge Upgrades

Prepared For:
The Regional District of Nanaimo
Recreation & Parks
Parksville, B.C. V9P 2X4

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Introduction:

This report is a Construction Environmental Sediment Management Plan to address environmental protection during the maintenance to the existing trail bridge crossing the Little Qualicum River.

The plan was developed by David Clough, RP Bio and Brad Remillard, RP Bio with additional information (topographic survey and design) supplied by Steve Scott, P. Eng of Herold Engineering. Specific environmental concerns surrounding this project include:

1. Containment of silts and sediments from the river.
2. Containment of fuels and oils from construction activities.
3. Prevention of cement and wood debris from the wetted environment.

Project environmental description and location:

This project is situated within Little Qualicum River Regional Park (Figure 1) in Qualicum, BC. The bridge site is locally known as the Glory Hole Bridge and it connects between Meadowood Way on the northwest to Melrose Road to the South east.

The Little Qualicum River originates on the steep hillsides of Mount Arrowsmith and runs through Cameron Lake, through Parksville and into the Strait of Georgia. The watershed is approximately 251km² in size and is situated. The river has perennial flows and year round fish populations. It is a regionally significant sport fish river primarily for Steelhead, Cutthroat and introduced Brown trout, as well as having a commercial fishery production of Chum, Coho and Chinook. It also supports populations of Sockeye Salmon, Pink Salmon and Dolly Varden Char.

Schedule and Description of Work

The work is scheduled for July to October 15th 2017. The instream portion will be completed prior to September 15th. The contractors must understand the environmental limitations and risks associated with this project. Work must follow all of available best management practices (BMP's), workers must assume rain events will occur and be within their capabilities to protect the wetted environment. They must plan in advance for protection of the environmental areas and have all equipment ready. Sediment/debris management and flow diversion will be key to the success of this project. Specific steps include but are not limited too.

1. Marking of work perimeter (riparian vegetation protection).
2. Sediment/Debris control installations in river, bridge and roads.
3. Site Isolation- install water flow diversion and removal of fish
4. Remove deck structure and timber ballast walls in contained area
5. Complete instream works including pier footing/rip rap in contained area
 - a. Note- any concrete works must be isolated while curing from water flow for a minimum of 48hours.
6. Reconstruct bridge deck and rails in contained area
7. Apply erosion control measures on completed erodible surfaces (i.e. seed, rock, straw).

Schedule of Work

Permits/planning:

Engineering plan by Herold Engineering (Steve Scott P. Eng.)

Geotechnical report from Lewkowich Engineering Associates Ltd. (John Hessels, ASct.)

Section 11 Water Act Notification was submitted on behalf of the Region District of Nanaimo.

Fry salvage Fish Collection permit submitted by D.R. Clough Consulting.

The following section contains;

- Construction Environmental Management Plan Checklist
- Equipment and Fuel Handling Specifications
- Spill and Sediment Emergency Response Plan.
- BCTS EFP Roads, Bridges and Major Culverts.

Figure 1: Overview Map



Construction Environmental Management Plan (CEMP) - Check List

1. Pre-Work – A job safety and pre-work meeting will be done to ensure that all workers understand the objectives and have clear written plans on their roles and responsibilities. Everyone must be aware of the site environmental areas and protocols as there must be no disturbance or deleterious substance entry into fish habitat.
2. Monitoring – The environmental monitoring will be conducted by D.R. Clough Consulting. Monitoring will be conducted to ensure measures are always in place to protect the environment. The contractors will be responsible for installing and maintaining their environmental protection systems. The monitors' role will be to identify sensitive areas, record procedures and report any concerns. There will be a review of reporting and procedures routinely with managers and contractors.
3. Spill Kits/ Erosion Control – All environmental safety material must be readily available. Spill kits will be on site. Erosion control coverings such as plastic, pumps, tarps, floating sediment curtains and straw bales are to be on the job site (specifications below).
4. Weather –In any circumstance (whether raining or not) where a potential exists for release of sediment, the activity must be stopped. Rainfall shutdowns may be necessary and preparedness for cloudburst events is necessary.
5. Fording – No fording is identified as required in this project. It is not in the Section 11 Work in Stream notification.
6. Concrete Works – Footing/foundations must be isolated from fish habitat for a minimum of 48 hours.
7. Ditches and Drainage – drainage and ditches at the site may require maintenance or installation of turnouts, sumps and swales to reduce water entry directly to fish habitat.
8. Erosion/Storm Water Management– Installation of appropriate sediment management measures must be applied. The contractor must have the following items; (scaled to scope of work and re-supplied as used);
 1. 50 m of 20 cm diameter oil containment boom
 2. 200 x 2litre absorbent pads
 3. 4 Straw bales
 4. Tarps or rolls of poly sheeting
 5. One industrial spill kit on each piece of heavy equipment

Equipment and Fuel Handling Specifications:

1. Heavy equipment will be inspected daily as a preventative measure to avoid unnecessary spills or leaks due to poor equipment maintenance.
2. Fueling of heavy equipment will be conducted in designated areas outside (>30m from channel) the environmentally sensitive area
3. Spill response kits will be required for each piece of heavy equipment (i.e. Excavators, Loaders, Trucks) which will be at least 21 liter drum size each with spill pads, sorbent, small boom, plastic garbage bag and gloves. A commercial sized spill kit (80l) with larger/longer booms and spill pads/sorbent flakes is required for a central location of work. The spill boom material length should be equivalent to double the width of the creek.
4. The designated monitor will inspect all of the equipment before it is moved onto the construction site. Any equipment that is not approved will not be allowed on the worksite until it has been repaired to the satisfaction of the monitor.
5. Fuel will be stored in designated sites away from the environmental areas. TDG tank users must follow the recommended practices outlined in the "Field Guide to Fuel Handling, Transportation and Storage, 2002."

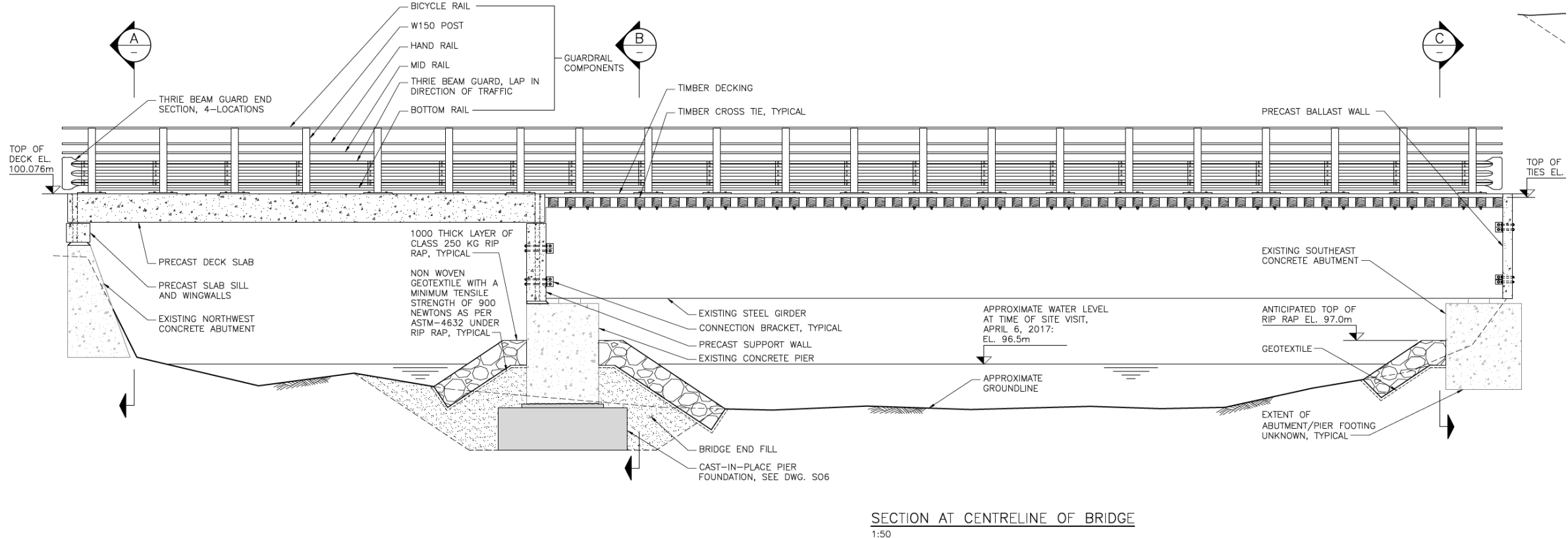
Spill and Sediment Emergency Response Plan:

Containment materials and equipment will be stored in a readily available area for immediate use and be of sufficient quantity to receive contaminants for later disposal at an acceptable location. Immediate scene personnel such as equipment operators and laborers must be trained and equipped to respond to containment and clean up in the event of a spill. Report all spills to supervisors and the Environmental Monitor. The following spill response measures must be followed in the event of an accident:

1. Ensure worker and public safety
2. Control the spill source
3. Secure the spill site and eliminate potential ignition sources
4. Contain the spill and prevent contaminant entry into water
5. Report the incident
6. Clean-up, store and dispose of contaminants
7. Monitor downstream impacts to aquatic resources

All deleterious spills in the working area; are to be remediated. Spill fluids that are deleterious to the environment include oils, greases, fuels and solid fill materials that could contain leachates. Depending upon the severity of the spill (i.e. > 100 L of flammable liquids or oils), the Environmental Monitor, or supervisor is obligated to report the details of the incident (location, substance, time and duration of spill, estimated volume, containment action) to the Provincial Emergency Program of MOE (1-800-663-3456). All contaminants and contaminated materials will be disposed of in a manner consistent with MOE policy. Spill response measures, as well as all construction measures must also comply with any environmental management system developed on behalf of the construction contractor.

Figure 2: Site Plan – Proposed Instream Works



Appendix 1 – Site Photos



1.) Looking upstream at river right abutment



2.) Looking downstream at river right abutment



3.) Looking downstream at center pier



4.) Existing wood stringers to be removed