



October 22, 2021

File: A3006651

Job: 113881

Ministry of Transportation and Infrastructure
447 Columbia Street
Kamloops, BC
V2C 2T3

Attn: Donna Olsen, Regional Environmental Services Coordinator

Re: Water Sustainability Act Change Approval (Section 11) – Culvert Replacement on White Creek, Clear Span Bridge Construction on Tappen Creek and Wetland Infilling associated with Highway Widening, near Tappen, BC

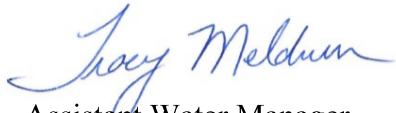
Your application for a Change Approval has been granted, and the approval document is attached. This Change Approval, or copy of it, must be kept on the work site so that it may be shown to a Ministry official upon request.

Archaeological sites are protected by the *Heritage Conservation Act*. These sites are protected for their historical, cultural, scientific, and educational value to the general public, local communities, and First Nations. When a proposed development location overlaps with an archaeological site, it is these values that are addressed in managing the development impacts to the site. If any archaeological material is encountered during construction, all activities must cease and the Archaeological Branch must be contacted at (250) 953-3334 for direction.

It is the responsibility of the holder of this Change Approval to ensure that their activities, works or construction are in compliance with all legislation, including the *Fisheries Act* (Canada), as well as with any applicable federal, provincial or local government bylaws, regulations or enactments.

If you have any other questions or concerns regarding this Change Approval, please contact Tracy Meldrum at Tracy.Meldrum@gov.bc.ca or (250) 312-7417 in Kamloops.

Yours truly,



Assistant Water Manager
under the *Water Sustainability Act*
Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Attachments

cc: Ecosystems Section, Kamloops



CHANGE APPROVAL

Changes in and about a stream

WATER SUSTAINABILITY ACT - SECTION 11

Ministry of Transportation and Infrastructure (MOTI) located at 447 Columbia Street, Kamloops, BC, is hereby authorized to make changes in and about a stream as follows:

- A. The streams are White Creek, Tappen Creek and an unnamed wetland.
- B. The changes to be made in and about the stream are wholly within the legally described Ministry of Transportation Statutory Right of Way and appropriate consent has granted.
- C. The changes to be made in and about **White Creek** are as follows:
 - 1. Removal of riparian vegetation;
 - 2. Temporary and permanent channel realignment and diversion associated with culvert removal and replacement;
 - 3. Installation of 96 m long, round closed bottom 4.3 m diameter structural plate corrugated steel pipe (SPCSP) culvert buried 40% into substrate;
 - 4. Installation of cast in place concrete headwalls at the culvert inlet and outlet;
 - 5. Placement of erosion protection works within the stream channel;
 - 6. Placement of fill to decommission a portion of the former stream channel; and,
 - 7. Replanting of riparian vegetation.
- D. All works on White Creek shall comply to the following technical drawings and reports:

Project/Drawing	Title	Revision	Date
24913-0001-8513-1	White Creek No. 2 Culvert Site Plan	100% Detailed Design	May 15, 2020
24913-0001-8513-2	White Creek No. 2 Culvert General Arrangement	100% Detailed Design	May 15, 2020
24913-0001-8513-3	White Creek No. 2 Culvert Headwalls	100% Detailed Design	May 15, 2020

Project/Drawing	Title	Revision	Date
24913-0001-8513-4	White Creek No. 2 Culvert White Creek Realignment Plan	100% Detailed Design	May 15, 2020
24913-0001-8513-5	White Creek No. 2 Culvert White Creek Profile and Details	100% Detailed Design	May 15, 2020

- Environmental Assessment to Support Regulatory Applications. Highway 1; Four Laning from Ford Road to Tappen Valley Road. Prepared for Ministry of Transportation and Infrastructure. Prepared by McElhanney. Dated December 2019.

E. The changes to be made in and about **Tappen Creek** are as follows:

1. Removal of riparian vegetation;
2. Temporary and permanent channel realignment and diversion associated with box culvert extension and removal;
3. Construction of temporary retaining walls and box culvert extension;
4. Partial removal of existing box culvert from Tappen Creek;
5. Construction of clear span bridge and associated abutments, fill and erosion protection works;
6. Construction of wildlife pathway under the bridge;
7. Creation of pool and riffles structures upstream and downstream of the bridge;
8. Creation of a backwater pool on the east side of Tappen Creek; and,
9. Replanting of riparian vegetation.

F. All works on Tappen Creek shall comply to the following technical drawings and reports:

Project/Drawing	Title	Revision	Date
24913-0001-10254-1	Site Plan	100% Detailed Design	May 15, 2020
24913-0001-10254-2	General Arrangement	100% Detailed Design	May 15, 2020
24913-0001-10254-3	Foundation Plan and Pile Details	100% Detailed Design	May 15, 2020
24913-0001-10254-4	North Abutment	100% Detailed Design	May 15, 2020
24913-0001-10254-5	South Abutment	100% Detailed Design	May 15, 2020
24913-0001-10254-11	Tappen Creek Realignment Plan – Sheet 1	100% Detailed Design	May 15, 2020

Project/Drawing	Title	Revision	Date
24913-0001-10254-12	Tappen Creek Realignment Plan – Sheet 2	100% Detailed Design	May 15, 2020
24913-0001-10254-13	Tappen Creek Realignment Plan – Profile	100% Detailed Design	May 15, 2020
24913-0001-10254-14	Tappen Creek Realignment Plan – Cross Sections	100% Detailed Design	May 15, 2020

- Environmental Assessment to Support Regulatory Applications. Highway 1; Four Laning from Ford Road to Tappen Valley Road. Prepared for Ministry of Transportation and Infrastructure. Prepared by McElhanney. Dated December 2019.

G. The changes to be made to the **unnamed wetland** near the existing intersection of Bolton Road are as follows:

1. Removal of riparian vegetation;
2. Excavation of wetland organic soil and overburden;
3. Installation of embankment fill to build road prism; and,
4. Construction of new wetland and associated riparian plantings;

H. All works in and around the unnamed wetland shall comply to the following technical drawings and reports:

Project/Drawing	Title	Revision	Date
24913-0001-R2-735-801	Offsetting Plan	90% Detailed Design. Rev A	Nov 1, 2019
24913-0001-R2-735-802	Plan	90% Detailed Design. Rev A	Nov 1, 2019
24913-0001-R2-735-803	Plan	90% Detailed Design. Rev A	Nov 1, 2019
24913-0001-R2-735-804	Profile	90% Detailed Design. Rev A	Nov 1, 2019
24913-0001-R2-735-805	Cross Section	90% Detailed Design. Rev A	Nov 1, 2019

In the event of disagreement amongst conditions specified in these documents, the requirements specified in the most recent document shall be followed.

In the event of disagreement between conditions specified in these documents and those of this approval, the requirements specified in the approval shall be followed.

The following Clauses I through QQ apply to all project and stream locations referenced in this Change Approval.

Timing and Authority:

- I. This Change Approval or copy of it must be kept on the work site so that it may be shown to a Ministry official upon request.
- J. Construction of the authorized works shall be completed on or before **December 31, 2025**.
- K. This Change Approval is based on the project scope specified by Clauses C through H. Any significant departures from the approved plans and specifications will be submitted to the Assistant Water Manager for review and acceptance at least 10 working days prior to any changes being made in the field. If the holder of this Change Approval proposes any schedule alterations or project modifications required to complete the work, a written notification must be submitted to the Assistant Water Manager, Thompson Okanagan Region prior to the above completion date. Upon review of the written request, the Assistant Water Manager **may**, at his or her discretion, grant a time extension or initiate a further review of the project that may result in amendment to conditions in this Change Approval or require a new application submission.
- L. Prior to carrying out any maintenance of the works under this Change Approval, the holder is to obtain the consent of the Assistant Water Manager, Thompson Okanagan Region.
- M. This Change Approval does not constitute authority of any other agency. The holder of this approval shall have the necessary permits from other agencies concerned prior to the commencement of the works authorized herein.
- N. This Change Approval does not authorize entry onto privately held land. The holder of this approval shall take reasonable care to avoid damaging any land, works, trees or other property, and shall make full compensation to the owners for any damage or loss resulting from the exercise of the rights granted with this approval.

Ecosystem Conditions:

- O. A Construction Environmental Management Plan (CEMP) prepared and signed by an Appropriately Qualified Professional shall be submitted for review and acceptance by the Assistant Water Manager at least 15 workdays in advance of commencement of those changes.
- P. Pre-construction field assessment to inventory local vegetation, wildlife, fish habitat resource and overall habitat value will be completed. Mitigation strategies must be in place to address concerns for nesting birds, snakes, amphibians, and burrowing and/or den species. A nesting bird survey and additional wildlife surveys conducted by an Appropriately Qualified Professional within the disturbed footprint of proposed works will be required. The survey results shall be included in the CEMP.
- Q. The project is in close proximity to known occurrence of Mexican mosquito fern and mapped as Critical Habitat. Mexican mosquito fern is a tiny floating aquatic fern. The area

- shall be surveyed for this fern prior to instream work. If identified the fern should be salvaged and moved outside of the construction footprint.
- R. The least risk fish timing window for Tappen Creek and White Creek is July 22 - Oct 21. If the instream work is proposed outside of the timing window the Change Approval Holder must retain an Appropriately Qualified Professional to assess the risks of working outside the window. Proposed site-specific mitigation measures and a plan for onsite monitoring of their implementation must be submitted to the Assistant Water Manager for review and acceptance before instream work can proceed outside of the least risk window.
- S. All instream works will be constructed under on-site supervision of an appropriately qualified Environmental Monitor (EM). The holder of this Change Approval will grant the EM the authority to modify, or halt any construction activity that is causing, or has the potential to cause damage to fish and or wildlife populations or their habitats. If in the opinion of the EM, the implementation of mitigation measures fails or is unlikely to protect ecological values, all work shall cease until a remedy is found.
- T. All in stream works shall meet or exceed the provincial guidance for instream works: "Standards and Best Practices for Instream Works" (MWLAP 2004).
- U. In the event the instream work has the potential to isolate fish, a fish collection permit must be obtained and a qualified professional must conduct a fish salvage prior to commencement of instream works.
- V. Provision shall be made for fish passage through the culvert in the temporary channel and the existing channel downstream of the culvert.
- W. To prevent the spread of invasive plants all equipment, including machinery, clothing, boots, etc., should be inspected for plant material before entering the site. Any material found should be removed, bagged, and disposed of properly.

Site Conditions:

- X. All work shall be conducted from top of bank, or under dry conditions, or dewatered conditions, or in the isolated portion of the stream channel. No equipment should be operated in the water.
- Y. Flows downstream of the project site must be maintained at all times.
- Z. Care shall be exercised during all phases of construction to minimize siltation to all streams within the construction footprint. The holder of this approval must not cause significant adverse impact on the ambient water quality of the stream and adhere to the guidelines set out in the CEMP. Silt and other fine soil textures, or other deleterious substances, shall be prevented from entering the stream. This must be ensured through the use of silt fencing,

- sediment ponds, hydrocarbon separators, and appropriate silt curtain or cofferdam materials.
- AA. Measures shall be taken to ensure that no harmful material (e.g., fuel and other hydrocarbons, soil, silt) that could adversely affect water quality, aquatic life, species at risk, and/or habitat (including riparian vegetation) can enter the creek as a result of the project. This must be ensured through the use of isolation measures including silt fencing, sediment ponds, hydrocarbon separators, and appropriate silt curtain and/or cofferdam materials. If employed, a cofferdam must be designed by a professional engineer.
- BB. Equipment used in close proximity to the stream must be in good repair and be free of free of exposed deleterious substances such as hydraulic leaks, excess surface oil and grease.
- CC. Fuelling and servicing of vehicles and equipment must occur away from all streams, lakes and water bodies and any spills must be properly cleaned up and reported as required by the Spill Reporting Regulation (B.C. Reg. 187/2017).
- DD. Appropriate design methods and construction techniques for the site conditions shall be utilized.
- EE. All excavated material and debris shall be disposed of off-site or placed in a stable area above the high water mark and protected from erosion by planting grass and/or vegetation.
- FF. Upon completion of this project, the streambed shall be left in as smooth a condition as possible with no depressions that could trap fish or initiate erosion.
- GG. The cleared channel must have a cross-sectional area equal to or greater than the present cross-sectional area and with the same gradient as the present stream.
- HH. Rock used as riprap shall be clean, durable, and angular; and, suitably graded and sized to resist movement by ice and freshet flows.
- II. Rock used as erosion protection must be certified as non-acid generating and evaluated for potential acid rock drainage (ARD) and metal leaching (ML) as per MOTI Technical Circular T-04/13. Only rock with a low potential for ARD/ML shall be used.
- JJ. Erosion protection works must be designed and constructed using appropriate design methods and construction techniques applicable to site conditions. It is the Change Approval Holder's responsibility to ensure structural stability of the new bank erosion protection.
- KK. All disturbed areas of the stream channel shall be protected from erosion.
- LL. Adequate riprap or wing walls shall be placed at the upstream and downstream of each road crossing (culvert or bridge) and incorporated into the road embankment to protect the stream channel from erosion.

- MM. Holder(s) of water licences within one kilometer downstream are to be advised prior to the commencement of construction.
- NN. Holder(s) of water licences within one kilometer downstream are to be provided with an alternate supply of fresh water during periods when water quality may be adversely affected.

Compensation and Post-Construction Monitoring Requirements:

- OO. The Compensation and Planting plans in Appendix F of the following document shall be followed:
- Environmental Assessment to Support Regulatory Applications. Highway 1; Four Laning from Ford Road to Tappen Valley Road. Prepared for Ministry of Transportation and Infrastructure. Prepared by McElhanney. Dated December 2019.
- PP. Mitigation riparian plantings will be expected to be monitored for two years beginning December 31, 2025. Eighty percent of the original plantings must have survived after two years. Where this has not occurred, the proponent must replant back to 100% of the original planting densities. Records of the survivability monitoring shall be retained for five years and made available upon request to the Assistant Water Manager.

Reporting:

- QQ. Within 60 days following completion of construction and prior to expiry of the Change Approval, submit record drawings to the Water Manager and provide assurance by a qualified professional that the constructed work substantially complies in all material respects with the design plans and supporting documents referenced in Clause D (White Creek) and Clause F (Tappen Creek) and Clause H (unnamed wetland) of this Change Approval.



Tracy Meldrum, M.Sc., P.Ge.
Assistant Water Manager
under the *Water Sustainability Act*
Thompson Okanagan Region