



## Paragraphs 34.4(2)(b) and 35(2)(b) *Fisheries Act* Authorization

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### Authorization issued to

Ministry of Transportation and Infrastructure (*hereafter referred to as the "Proponent"*)

Attention to:

Donna Olsen  
Environmental Services Coordinator  
231-447 Columbia Street  
Kamloops, BC  
V2C 2T3

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### Location of Proposed Project

Nearest community (city, town, village): Tappen  
Municipality, district, township, county: Columbia-Shuswap Regional District  
Province: BC  
Name of watercourse, waterbody: Tappen Creek and White Creek  
Longitude and latitude, UTM Coordinates: 11 U 334978 E 5627334 N and 11 U 335795 E 5628735 N

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### Valid Authorization Period

This Authorization remains in force from the **Date of Issuance** until Fisheries and Oceans Canada (DFO) confirms to you in writing that all of the requirements of this Authorization have been met, in particular those requirements relating to monitoring, offsetting measures and contingency measures.

Please note that this Authorization may contain more specific timing requirements and limitations. These are set out in the Conditions of Authorization section.

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### Description of Proposed Project

The proposed project of which the work, undertaking or activity authorized is a part of involves:

Widening Highway 1 and upgrading related frontage roads between Ford Road and Tappen Valley Road (the project) in Tappen, BC.

The project is described in the following documents, hereafter referred to collectively as the "Project Plan":

- Environmental Assessment to Support Regulatory Applications – Highway 1: Four Laning from Ford Road to Tappen Valley Road (Rev. 0), prepared by McElhanney Consulting Services Ltd., dated December 2019;
- Tappen Creek Bridge Tappen Creek Realignment Plan, Drawing No’s. 10254-11 and 10254-12, prepared by McElhanney Consulting Services Ltd., dated June 26, 2020;
- Tappen Creek Structure Tappen Creek Realignment Cross-Sections, Drawing No. 10254-14, prepared by McElhanney Consulting Services Ltd., dated June 26, 2020; and
- White Creek No. 2 Culvert White Creek Realignment Plan and Profile and Details, Drawing No’s 8513-4 and 8513-5, prepared by McElhanney Consulting Services Ltd., dated June 26, 2020.
- Technical Memo – Highway 1 Four Laning – Ford Road to Tappen Valley Road, prepared by McElhanney Consulting Services Ltd., dated March 26, 2021.

**Description of Authorized work(s), undertaking(s) or activity(ies) likely to result in the harmful alteration, disruption or destruction of fish habitat:**

The work(s), undertaking(s), or activity(ies) associated with the proposed project described above, that are likely to result in the harmful alteration, disruption or destruction of fish habitat, are:

- Removal of riparian vegetation along Tappen and White creeks for riprap placement, site preparation, highway widening and frontage roads;
- Riprap armouring and infilling within the wetted channel of Tappen and White creeks; and
- Temporary and permanent channel realignment associated with culvert removal (Tappen Creek) and culvert upgrades (White Creek).

**The authorized work(s), undertaking(s), or activity(ies) are likely to result in the following impacts to fish and fish habitat:**

- Destruction of 467 m<sup>2</sup> of aquatic habitat within Tappen Creek from channel realignment and infilling;
- Destruction of 2,200 m<sup>2</sup> of riparian habitat along Tappen Creek from highway widening and equipment access;
- Destruction of 826 m<sup>2</sup> of aquatic habitat within White Creek from channel realignment and infilling; and
- Destruction of 6,071 m<sup>2</sup> of riparian and floodplain habitat along White Creek from channel realignment, infilling, highway widening and frontage roads.

**Conditions of Authorization**

The above described work, undertaking or activity must be carried on in accordance with the following conditions.

**1. Conditions that relate to the period during which the work, undertaking or activity can be carried on.**

The work, undertaking or activity that is/are authorized to be carried on during the following period:

From: **Date of Issuance**

To: **Dec 31, 2026**

If the Proponent cannot complete the work, undertaking or activity during this period, Fisheries and Oceans Canada (DFO) must be notified in advance of the expiration of the above time period. An

application for amendment, suspension or cancellation of the authorization should be submitted to DFO.

The periods during which other conditions of this authorization must be complied with are provided in their respective sections below.

**2. Conditions that relate to measures and standards to avoid and mitigate impacts to fish and fish habitat.**

- 2.1 Environmental Monitoring must be conducted by a Qualified Environmental Professional (QEP) according to criteria listed in the Project Plan - Appendix E: Best Management Practices to be Implemented and conditions outlined herein.
- 2.2 The Proponent (or contractor) will develop and implement a Construction Environmental Management Plan (CEMP) consistent with the Project Plan for DFO review and approval prior to initiation of construction.
- 2.3 Sediment and erosion control: Sediment and erosion control measures must be in place and shall be upgraded and maintained such that release of sediment is avoided at the location of the authorized work, undertaking, or activity.
- 2.4 In accordance with the Project Plan, conduct turbidity and pH monitoring throughout the duration of the project for any works that could increase the turbidity or alter the pH of either watercourse. The need for additional measures will be determined by the on-site QEP to avoid and/or mitigate the increase in turbidity or changes to pH downstream of the work area.
- 2.5 List of additional measures and standards to avoid and mitigate impacts to fish and fish habitat:
  - 2.5.1 Works shall be conducted in a manner that avoids fish mortality.
  - 2.5.2 The CEMP is a living document and is subject to the incorporation of additional measures, as requested by the on-site QEP. In the event of any discrepancies in the content of the CEMP, the most recent version of the document approved in writing by DFO shall prevail. DFO will be immediately notified and provided a copy of any changes to the CEMP, should they occur. In the event of any conflict between the measures in the application documents and the conditions of this authorization, the conditions of this authorization shall prevail.
  - 2.5.3 A QEP must be on-site for all high risk activities (e.g., fish salvage, isolation, diversions, dewatering, and in-water construction) to:
    - Conduct full time observations for schooling and/or migrating fish for any works taking place beyond the regional least risk timing window for each watercourse.
    - Oversee/direct avoidance and mitigation measures to minimize impacts on fish and fish habitat and avoid the unauthorized harmful alteration, disruption or destruction of fish habitat and/or the death of fish.
  - 2.5.4 Ensure pumps are screened to prevent the entrainment or impingement of fish according to DFO's [Interim Code of Practice for End-of-Pipe Fish Protection Screens for Small Water Intakes](#).
  - 2.5.5 Incorporate applicable measures and standards from DFO's [Interim Code of Practice for Temporary Cofferdams and Diversion Channels](#).
  - 2.5.6 Instream works, undertakings and/or activities will only be carried out within previously isolated and salvaged areas.
  - 2.5.7 The Authorization Holder is responsible for ensuring fish movement is not impeded or delayed and 100% of flows are maintained around the work area at all times.
  - 2.5.8 Clearing of riparian vegetation shall be minimized and boundaries clearly marked to avoid unnecessary or accidental encroachment into vegetation retention areas.
- 2.6 Contingency measures: If monitoring required in Section 3 below indicates that the measures and standards to avoid and mitigate impacts to fish and fish habitat are not successful, construction activities shall cease and a QEP shall inform on and oversee the implementation of appropriate

contingency measures prior to the continuation of any activity that may result in unauthorized impacts to fish and fish habitat.

- 2.7 Dates by which these measures and standards shall be implemented: Measures and standards to avoid and mitigate impacts to fish and fish habitat shall be implemented prior to the initiation of works, undertakings or activities.

**3. Conditions that relate to monitoring and reporting of measures and standards to avoid and mitigate impacts to fish and fish habitat.**

- 3.1 Monitoring of avoidance and mitigation measures: The Proponent shall monitor the implementation of avoidance and mitigation measures referred to in section 2 of this authorization and report to DFO, by **December 31** of each year until **December 31, 2026**, indicating whether the measures and standards to avoid and mitigate impacts to fish and fish habitat were conducted according to the conditions of this authorization. This shall be done by:

- 3.1.1 Providing details of how each condition in section 2 was met;
- 3.1.2 Demonstration of effective implementation and function: Provide dated photographs and inspection reports to demonstrate effective implementation and function of mitigation measures and standards described above to limit the impacts to fish and fish habitat to what is covered by this authorization.
- 3.1.3 Contingency measures: Provide details of any contingency measures that were followed, to prevent impacts greater than those covered by this authorization in the event that mitigation measures did not function as described.

- 3.2 Other monitoring and reporting conditions:

- 3.2.1 Provide a summary of the fish salvaged. The information summarized shall include the number of individuals salvaged, species, size, date, location of capture and release, and the nature of any incidental effects to fish during salvage (capture, death, sub-lethal harm, etc.). Representative photographs of fish captured shall also be taken and provided as part of the fish salvage results. The fish salvage results can be incorporated into the final post-construction monitoring report referenced in Condition 5.1.1 or as a separate report;
- 3.2.2 Provide surveyed as-built drawings, annotating the spatial extent of all constructed works and disturbed habitat within instream and riparian areas. The spatial extent of any impacts of the works, undertakings or activities had on the surrounding habitat will also be included.

**4. Conditions that relate to offsetting.**

- 4.1 Scale and description of offsetting measures: Offsetting measures will follow the details outlined in the Project Plan, including the Proponent's offsetting plan dated **March 26, 2021**, approved by DFO and attached to this authorization.
- 4.2 Offsetting criteria to assess the implementation and effectiveness of the offsetting measures: All fish habitat offsetting measures shall be completed and functioning according to the criteria below:
- 4.2.1 Constructed instream habitat features (boulder clusters, rock weirs, large woody debris, and off-channel habitat) are physically stable and functioning as intended.
- 4.2.2 Large woody debris structures are located within the low-flow, wetted perimeter of the channel in at least half (50%) of the monitoring years. Other aquatic complexes, namely boulders, boulder clusters, rock weirs, off-channel habitat and spawning gravels, will be deemed functional if observed to be creating pool, bar, spawning, scour, cover and refuge habitat etc.
- 4.2.3 Fish use effectiveness monitoring will demonstrate, on a repeatable basis, the use of the aquatic complexes. Sampling methods, timing, and effort shall be consistent between years for constructed and reference sites. Success of the features will be determined based on observed

fish densities and composition at constructed aquatic complex sites compared to reference sites.

- 4.2.4 Planted vegetation will demonstrate at least 80% survival in each of the identified planting areas at the end of the 10-year monitoring program unless monitoring indicates planted vegetation is functional prior to the completion of the monitoring schedule. DFO may confirm in writing that additional monitoring years are not required.
- 4.3 Contingency measures: If the results of monitoring as required in section 5 indicate that the offsetting measures are not completed by the date specified and/or are not functioning according to the above criteria in 4.2, the Proponent shall provide written notice to DFO and shall implement contingency measures and associated monitoring measures to ensure offsetting measures are completed and/or functioning as required by this authorization.
  - 4.3.1 Scale and description of contingency measures: Contingency measures will be implemented if additional offsetting is required to compensate for the authorized harmful alteration, disruption or destruction of fish habitat, as determined by DFO. This may include additional offsets in other areas within or contiguous to Tappen Creek and White Creek.
  - 4.3.2 Monitoring measures to ensure offsetting contingency is completed and/or functioning as required: Should contingency measures be implemented, additional monitoring measures to verify completion and whether or not the habitat is functioning as intended must be agreed upon by DFO in writing.
- 4.4 The Proponent shall not carry out any work, undertaking or activity that will adversely impact the offsetting measures.
- 4.5 The Proponent shall obtain written permission for the Proponent, DFO, and anyone authorized to act on behalf of DFO, to access lands, water sources, or water bodies that are not owned by or under the care, control, or administration of the Proponent that must be accessed to implement the offsetting measures in this section and the monitoring of said measures.
- 4.6 The Proponent shall provide the written permission to DFO prior to the commencement of the authorized work(s), undertakings(s) or activity(ies) that are likely to result in impacts to fish and fish habitat, described herein, and prior to the commencement of the implementation of the Proponent's offsetting plan referred to in Condition 4.1 that is to take place on lands or in water sources or water bodies not owned by or under the care, control, or administration of the Proponent.

**5. Conditions that relate to monitoring and reporting of implementation of offsetting measures (described in section 4):**

- 5.1 Schedule(s) and criteria: The Proponent shall conduct monitoring of the implementation of offsetting measures according to the timeline and criteria below:
  - 5.1.1 List of timeline(s) and monitoring and reporting criteria: Monitoring shall commence after the first spring freshet following completion of offsetting measures. The monitoring and reporting schedule is further detailed in the following table unless otherwise confirmed in writing by DFO:

Monitoring Report Year	Aquatic offsetting Monitoring Period	Riparian Offsetting Monitoring Period	Monitoring Report Due Date
Year 1	Post- 2027 Freshet	Fall 2027	December 31 <sup>st</sup> , 2027
Year 2	Post- 2028 Freshet	Late Summer / Fall 2028	December 31 <sup>st</sup> , 2028
Year 3	Post- 2029 Freshet	Late Summer / Fall 2029	December 31 <sup>st</sup> , 2029
Year 5	Post- 2032 Freshet	Late Summer / Fall 2032	December 31 <sup>st</sup> , 2032
Year 10	Post- 2037 Freshet	Late Summer / Fall 2037	December 31 <sup>st</sup> , 2037

5.2 List of reports to be provided to DFO: The Proponent shall report to DFO on whether the offsetting measures were conducted according to the conditions of this authorization by providing the following:

5.2.1 A post-construction offsetting report submitted to DFO within 60 days of the completion of all offsetting measures that includes:

- Details of the construction of offsetting habitat, including implementation and efficacy of avoidance and mitigation measures.
- Dated representative photographs showing construction and the implementation and efficacy of avoidance and mitigation measures.
- Dated representative photographs of each of the completed aquatic habitat complexes described in Conditions 4.2.1 and 4.2.2.
- Dated representative photographs of each of the riparian offsetting areas described in Condition 4.2.4 taken from a static location.
- As-built drawings that confirm the footprints of offsetting measures and construction as per Condition 4.1.

5.2.2 Offsetting monitoring reports as per schedule in Condition 5.1.1 that evaluate the performance of the offsetting measures, including:

- Those identified in Condition 4.2.
- An assessment of riparian survival and canopy cover for each planting area.
- Identification of any functional concerns with offsetting measures and a description of any contingency measures taken.
- An assessment of whether the offsetting fully compensates for the authorized impacts to fish and fish habitat in the final monitoring report.

### **Authorization Limitations and Application Conditions**

The Proponent is solely responsible for plans and specifications relating to this authorization and for all design, safety and workmanship aspects of all the works associated with this authorization.

The holder of this authorization is hereby authorized under the authority of Paragraphs 34.4(2)(b) and 35(2)(b) of the *Fisheries Act*, R.S.C., 1985, c.F-14, to carry on the work(s), undertaking(s) and/or activity(ies) that are likely to result in impacts to fish and fish habitat as described herein.

This authorization does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

This authorization does not permit the deposit of a deleterious substance in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish unless authorized by regulations made by Governor in Council.

At the date of issuance of this authorization, no individuals of aquatic species listed under the *Species at Risk Act* (SARA) were identified in the vicinity of the authorized works, undertakings or activities.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, the unauthorized death of fish by means other than fishing and/or the harmful alteration, disruption or destruction of fish habitat. Such notifications should be directed to (<http://www.dfo-mpo.gc.ca/pnw-ppe/CONTACT-eng.html>) or to the DFO-Pacific Observe, Record and Report phone line at 1-800-456-4336.

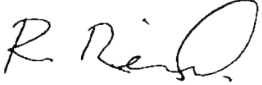
The failure to comply with any condition of this authorization constitutes an offence under Paragraph 40(3)(a) of the *Fisheries Act* and may result in charges being laid under said Acts.

A copy of this authorization should be kept on site while the work is in progress and upon request be provided to relevant federal or provincial officials. The authorization holder is responsible for ensuring work crews are familiar with, and able to adhere to, the conditions.

This authorization cannot be transferred or assigned to another party. If the work(s), undertaking(s) or activity(ies) authorized to be conducted pursuant to this authorization are expected to be sold or transferred, or other circumstances arise that are expected to result in a new Proponent taking over the work(s), undertaking(s) or activity(ies), the Proponent named in this authorization shall advise DFO in advance.

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**Date of Issuance:** 19 April 2021

**Approved by:**   
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Rebecca Reid  
Regional Director General  
Pacific Region  
Fisheries and Oceans Canada