



Fisheries
and Oceans

Pêches
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Amended Authorization: March 10, 2009
(see changes to "Valid Authorization Period")

FISHERIES ACT S. 35(2) and S. 32 AUTHORIZATION

PATH File #: 08-HPAC-PA1-00009
CEAR Ref #: 08-01-44483

AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT

Authorization issued to:

Name: Emergency Management British Columbia ("the Proponent")
Contact: Ann Griffin, Project Manager
Address: 2nd Floor, 525 Fort Street, Victoria, BC, V8W 9J1
Telephone: 250-953-4098
Facsimile: 250-953-4081

Location of Project:

The project is located in the Fraser River at Tranmer Bar, 4 km upstream of the Agassiz-Rosedale bridge.
Tranmer Bar

Latitude/Longitude: 49°13'42" / 121°42'56"

UTM Zone 10U: N 5453645, E 593508

Valid Authorization Period:

The valid authorization period for the harmful alteration, disruption or destruction of fish habitat and the destruction of fish associated with the works or undertakings described below is from February 1, 2009 to March ~~15~~ **31**, 2009. All works associated with the project including the decommissioning and scarifying of the access route must be completed by March ~~15~~ **31**, 2009.

Description of Works or Undertakings:

The works hereby authorized are the excavation of up to a maximum of 186,000 cubic metres of riverbed sediment from the riverbed of the Fraser River at Tranmer Bar. The construction of a temporary access bridge to the Tranmer Bar site will require construction of a causeway in a portion of the wetted Tranmer side channel, and pile-driving in the same channel. The work areas for Tranmer Bar are more specifically shown in the detailed project plan prepared by Emergency Management BC, Scott Resource Services Inc. and northwest hydraulic consultants (**Appendix A**), and bridge design drawings prepared by Associated Engineering (**Appendix B**).

The harmful alteration, disruption or destruction of fish habitat hereby authorized (S. 35(2)) is fourfold: a) harmful alteration of high bar fish habitat within the perimeter of the Fraser River; b) destruction of fish habitat in the Fraser River by construction and removal of the bridge and ramp crossings, and gravel approaches to these crossings; c) operation of excavation equipment and gravel transport trucks at the excavation sites and along the transportation routes; and d) the removal of riparian vegetation from within the high water wetted perimeter of the Fraser River at the access locations and within the excavation boundary on Tranmer Bar.

The destruction of fish hereby authorized (S. 32) is the loss of chum and chinook salmon eggs and alevins, and fry, through the construction, demolition, and removal of the site access facility in the Tranmer side channel. An assessment of this potential impact in the area of the bridge is included in Section 28 of the DFO CEAA screening report.

Conditions of Authorization:

1. EMBC ("the Proponent") confirms that all plans, specifications and operating regimes relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the Proponent. The Proponent acknowledges that they are solely responsible for all design, safety and workmanship aspects of all of the works and operations associated with this Authorization.
2. The conditions of this Authorization notwithstanding, should the above works or undertakings, based on interim monitoring data or other information, appear, in the opinion of Fisheries and Oceans Canada ("DFO"), likely to cause greater impacts to fish and fish habitat than previously contemplated, DFO may direct the Proponent, and their agents and contractors, to modify, suspend or alter works and activities associated with the Project to avoid or mitigate adverse impacts to fisheries resources. DFO may also direct the Proponent and its agents, and contractors, to carry out at the Proponent's expense any works or activities deemed necessary by DFO to avoid or mitigate further adverse impacts to fisheries resources. In circumstances where DFO is of the view that greater impacts may occur than were previously contemplated, DFO may also modify or rescind this Authorization. If the authorization is to be changed, the Proponent will be given an opportunity to discuss any proposed modifications or rescission.
3. The Proponent shall ensure that all works associated with the project and the project site are carried out in full compliance with the *Fisheries Act* and all other applicable legislation, guidelines, and best management practices.
4. The Proponent shall ensure that all work is carried out in such a manner as to prevent any harmful alteration, disruption or destruction of fish habitat beyond those authorized herein. Section 35 of the *Fisheries Act* prohibits harmful alteration, disruption or destruction of fish habitat unless specifically authorized by the Minister of Fisheries and Oceans.
5. The Proponent shall ensure that all work is carried out in such a manner as to minimize the destruction of fish through access construction, demolition and removal. The destruction of fish by any other means is not authorized. Section 32 of the *Fisheries Act* prohibits the destruction of fish unless specifically authorized by the Minister of Fisheries and Oceans Canada.

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6. This Authorization does not permit the deposit of a deleterious substance of any type, including sediment, in water frequented by fish. Subsection 36(3) of the *Fisheries Act* prohibits the deposit of any deleterious substances into waters frequented by fish.
 7. This Authorization does not permit the blockage of fish migration or passage. Access for fish must be maintained between areas upstream and downstream of the works authorized herein.
 8. Adam Silverstein, Fisheries and Oceans Canada at 604-666-2855, shall be notified prior to commencement of the project and again two days before its completion. DFO Fishery Officers and Habitat personnel shall be allowed access to the work site for the purpose of inspecting riparian areas along the haul road, the temporary bridge across the Tranmer side channel, haul roads to both excavation locations, and the extraction sites during the work period of this Authorization, and the monitoring period related to this Authorization.
 9. The access and haul roads are to be maintained along routes that minimize the area of environmental disruption to fish or fish habitat within the unvegetated areas of the Fraser River bed and floodplain. The causeway constructed across a portion of the wetted Tranmer side channel must utilize clean uncontaminated material, and such material must not be excavated from any areas not authorized for gravel removal.
 10. Culverts must be installed in the access causeway across the wetted portion of the Tranmer side channel to ensure conveyance of sufficient flow to downstream habitats that may support salmonid redds. The final number of culverts to be installed will be determined by suitably qualified on-site personnel based on existing and potential flow conditions, and the need to protect downstream fish habitat from dewatering. Flow within the side channel will be continuously monitored to ensure that there is no dewatering of downstream habitat that would not naturally occur.
 11. The outer limits of the area to be excavated, as shown on the detailed plans in **Appendix A** must be clearly identified by staking on the gravel bar prior to commencement of work. These boundary limits must remain clearly marked until all work has been completed. A qualified surveyor shall be required to re-survey the excavation site, on completion of the project, in order to establish the post-excavation profile of the gravel bar and determine the exact volume of riverbed sediment excavated.
 12. Gravel removal shall be limited to the extent and elevations shown on the detailed plans in **Appendix A** unless reviewed and approved by DFO staff. The extraction will tie into the existing bar elevation at the upstream and downstream ends to ensure flow conveyance during freshet and prevent fish stranding.
 13. The excavation designs at Tranmer Bar include features to provide additional habitat complexity to benefit rearing juvenile fish during elevated summer flow levels. At Tranmer Bar, these include constructed nooks along the north and south edges of the excavation, and a stepped invert within the upper extraction area. Subsequent freshets are expected to recruit new sediment to stabilize the site, and restore high-elevation rearing habitat for juvenile fish.
 14. Grading of the upper extraction area on Tranmer Bar will provide positive drainage to the existing stand pools, thus reducing the likelihood of fish stranding on the receding limb of the hydrograph in

summer. Similarly, the lower extraction area on Tranmer Bar will be graded to direct the over-bar flow back towards the main channel and provide connectivity with bay habitat present under low flows. The excavation will thus extend the period when fish have access to bar habitat within the channel.

15. The volume of riverbed sediment extracted from Tranmer Bar shall be limited to 186,000 cubic metres.
16. All excavation shall be completed in the dry at water levels that ensure the work area is isolated from flowing water. Excavation and pile installation machinery must not be operated within wet areas of the Fraser River. Should the water level rise during the valid Authorization period and risk flooding the work area, all equipment must be moved to higher ground until water levels recede.
17. Best management practices to contain sediment shall be applied and maintained during all project activities. It is the Proponent's responsibility to ensure that turbidity and suspended sediment levels are kept within limits set forth in the BC Approved Water Quality Guidelines for the Protection of Aquatic Life.
18. There must not be any removal or destruction of riparian vegetation within the high water wetted perimeter of the Fraser River, except for that which occurs either within the gravel extraction boundary for Tranmer Bar, denoted in Appendix A, or within the access right-of-ways denoted on the design plans in Appendix A.
19. All access and haul roads are to be maintained in such a way that minimizes riparian disturbance and disruption to fish and fish habitat.
20. On completion of the excavation, all roads that have become compacted as a result of the works must be scarified and contoured to match the surrounding natural bar topography. All material and debris excavated by the operation must be removed from the site within the valid Authorization period. On completion of the work, the entire area comprising the excavation site and access road must be returned to as natural a condition as possible.
21. Best management practices for handling, storage and use of deleterious substances shall be applied in accordance with appropriate legislation and guidelines. It is the Proponent's responsibility to prevent deleterious substances from entering any waters frequented by fish.
22. An appropriate spill prevention, containment, and cleanup contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, lubricants), and other deleterious substances (i.e., substances harmful to fish) that may be used in association with the project, shall be in place prior to works and activities commencing at the project site. Appropriate containment and clean up materials shall be available onsite throughout the course of works and activities on the project. At least one person onsite during any excavation works must have specific training in spill containment. Any spill of a deleterious substance within the high water wetted perimeter of the

Fraser River must be reported to the Provincial Emergency Program (24 hour telephone) at 1-800-663-3456.

Monitoring:

23. All works and activities associated with the project that have the potential for adverse impacts to fish, fish habitat and water quality shall be monitored by an appropriately qualified individual(s), deemed satisfactory by DFO (the "environmental monitor"). The environmental monitor shall, in consultation with, and at the discretion of DFO, monitor compliance of the work with the *Fisheries Act*, and other applicable environmental legislation, guidelines, and best management practices; and compliance with the terms and conditions of this Authorization. The foregoing notwithstanding, the authority of the environmental monitor is subject always to the discretion of DFO. DFO does not delegate any authority under the *Fisheries Act* to the environmental monitor. The environmental monitor does not have the authority to change, modify, or revise, either the project or the terms and conditions of this Authorization.
24. The environmental monitor should have written authority to modify or halt any project activity as required to achieve compliance with this Authorization. The Proponent shall provide the environmental monitor and any contractors working at the project site with a copy of this Authorization and a copy of this Authorization shall be retained onsite at all times. The Proponent shall provide DFO with the name of the monitor and contact phone number.
25. The environmental monitor shall, within 60 days of project completion, provide to DFO a report detailing, but not be limited to, the following information:
 - a. A summary of the works and activities carried out, including photographs of the project area before, during, and after completion of the works.
 - b. Commentary on the works and activities conducted at the project site from an environmental perspective (e.g., whether or not fish were observed in proximity to the site, changes in water level).
 - c. Identification of any environmental issues or impacts that arose or occurred (e.g., fuel spill) and details of specific mitigatory measures put in place to address environmental issues and impacts.
 - d. Sound pressure levels recorded during pile-driving operations, occurrence of any fish kills, and details of specific mitigation measures adopted to reduce impacts from pile-driving.
26. The Proponent shall conduct a monitoring program (the "Monitoring Program") at the extraction site and appropriately selected reference sites, as detailed in the 2004 Letter of Agreement between the Province of BC and DFO (**Appendix C**). The Monitoring Program shall be conducted or overseen by an appropriately qualified biologist who is acceptable to DFO. The Monitoring Program includes pre-extraction monitoring that was required for the environmental assessment prior to issuing of this Authorization.
27. The Monitoring Program shall consist of the following:

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- a. Topographic and/or bathymetric surveys shall be conducted after peak river discharge in 2008 but prior to sediment removal; immediately following sediment removal; and following the earlier of either a freshet with a peak daily flow of over 8,766 cubic metres per second (major freshet) or the freshet of 2011. Surveys are intended to assess the volume of gravel removed and the morphological impacts of the removal; therefore, the survey area shall be chosen in consultation with DFO to extend beyond the removal area to cover the area of potential morphological impact. Survey points within the survey area shall be chosen, at the discretion of the surveyor(s), to provide a sufficiently dense set of points to produce a detailed drawing of the area with 1 metre contours. The accuracy of the topographic survey points shall be ± 0.04 metres horizontally and vertically. The surveyor(s) shall tie the survey into hubs that will remain in place for the duration of the monitoring period. All elevations shall be local geodetic elevations. The surveyor(s) shall provide DFO with an appropriately scaled contour drawing of the survey area, including survey point locations, and an electronic copy of the survey data within 60 days of completing each survey.
 - b. Surface sediment sampling using the Wolman or photographic method shall be conducted within the extraction area and one reference area. Sampling shall occur before commencement of the project, after the first freshet following gravel extraction, and after the first of either a major freshet ($> 8,766$ cubic metres per second) or the freshet of 2011.
 - c. Benthic invertebrate sampling shall be conducted five times over the duration of the Monitoring Program. Sampling is to occur at four locations each time: within, or as proximal as possible to the extraction area, and at three appropriately chosen reference areas. Two sampling episodes shall occur prior to project activities and at least one month apart. Following gravel extraction, three sampling episodes shall occur: 1) post-freshet in June/July 2009, 2) at least one month later in August/September 2009, and 3) after the earlier of either a major freshet in 2010 or the freshet of 2011. At least one post-project sampling episode shall be conducted during the same month as one of the pre-project sampling episodes.
 - d. Fish sampling shall be conducted four times over the duration of the Monitoring Program. For each episode, sampling will consist of up to 5 beach seines in each available habitat type in the project area. Two sampling episodes shall occur prior to project activities and at least one month apart. Post-project sampling shall occur in the same months of 2009.
 - e. Habitat mapping of Tranmer Bar shall be carried out two times after completion of project activities: 1) during freshet in 2009 when discharge is approximately 5,000 cubic metres per second and, 2) after freshet in 2009 when discharge is approximately 2,500 cubic metres per second.
28. Annual results of the Monitoring Program shall be submitted in report format to DFO by the 31 of December of each year of the Monitoring Program. The report shall include, but not be limited to, observations, photographs, raw data, data analyses, and recommendations. A final report of the Monitoring Program shall be submitted to DFO prior to 31 December 2011.

Authorization:

The holder of this Authorization is hereby authorized under the authority of Section 35(2) and Section 32 of the *Fisheries Act*, R.S.C., 1985, c.F.14, to carry out the work or undertaking described herein.

This Authorization is valid only with respect to the *Fisheries Act* and for no other purposes. It 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.

Failure to comply with any condition of this Authorization may result in charges under the *Fisheries Act*.

This Authorization form should be held on site and work crews should be made familiar with the conditions attached.

Date of issuance: Feb 13/09

Approved by: [Signature]
Mr. Adam Silverstein

Title: Regional Manager
Environmental Assessment and Major Projects
Pacific Region
Fisheries and Oceans Canada



Emergency Management British Columbia acknowledges that Fisheries and Oceans Canada has consulted with them regarding the terms of this Authorization, and confirms that they have reviewed and understand the terms of this Authorization, and agree to the terms contained therein.

Executed by an authorized signatory of Emergency Management British Columbia on the 13 day of FEB., 2009, in the presence of:

[Signature]
Witness (signature)

Ann Gaudin
Name (print)

Manager
Title

Per:

[Signature]
Authorized signatory

Chen Thompson
Name (print)

DIRECTOR
Title