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Ministry of Environment

Terms and Conditions for Changes In and About a Stream Specified by Ministry of Environment (MoE) Habitat Officers, Kootenay Region (Region 4)

Section 42 (1) of the *Water Regulation (B.C. Reg. 204/88)* gives authority to a Habitat Officer to add specific conditions to ensure the protection of habitat in addition to the conditions of general application. An unofficial electronic version of the *Water Regulation* can be found on the internet at: (http://www.qp.gov.bc.ca/statreg/reg/W/Water/204_88.htm). Under this authority, Ministry of Environment (MoE) Habitat Officers, Kootenay Region, specify the following terms and conditions:

42 (1) To protect habitat, a person making a change in and about a stream under this regulation, other than under section 44(1)(o) to (s) or (2), must make that change in accordance with terms and conditions specified by the habitat officer with respect to

(a) the timing window or the period or periods of time in the year during which the change can proceed without causing harm to fish, wildlife or habitat,

The timing windows of least risk to fish and fish habitat must be applied during all instream activities creating disturbance below the high water mark in fish bearing streams. The Kootenay Region (Region 4) Periods of Least Risk for Instream Works by Fish Species, which are based on the fish species present as well as the geographic location of the worksite within MoE's Kootenay Region, can be found on the internet at: (http://www.env.gov.bc.ca/wsd/regions/kor/wateract/terms_conditions.html).

Windows of least risk are designed to protect fish species during the most sensitive life stages from spawning and egg deposition through to fry emergence. You have 2 options to apply the appropriate timing window:

1. Assume that the stream in which the works are to occur is a fish bearing stream that contains both spring and fall spawning species. In this case the instream works must be implemented between July 15th – August 31st or between August 20th – August 31st depending on the geographic location of the worksite as specified in the "Kootenay Region (Region 4) Periods of Least Risk for Instream Works by Fish Species" as found at the above noted website;

2. Determine the actual fish bearing status of the stream in which the works are to occur. One way fish presence can possibly be determined is through a fish inventory database. Such a database can be found at MoE's Fish Inventory Website at: (http://www.env.gov.bc.ca/fish). Please note if this database lacks fish presence records for a particular area it is most likely due to a lack of inventory and one cannot infer fish absence. If the above noted fish inventory database does not confirm fish presence a Qualified Professional must be retained to conduct an inventory of the stream using accepted methods.

If changes in and about a stream that supports fish must occur outside of the specified instream work window, the proponent must retain the services of a Qualified Professional to develop an impact mitigation plan that completely mitigates any harmful alteration, disruption or destruction of fish habitat. The proponent must implement the impact mitigation measures specified by the Qualified Professional. For information purposes a copy of the impact mitigation plan must be submitted to MoE prior to the commencement of works and a copy shall also be kept on site during implementation of the works. Note: It might not be possible to fully mitigate harmful alteration, disruption or destruction of fish habitat in all cases and the Qualified Professional will advise the proponent accordingly. In these instances, if the proponent wishes to continue to propose instream works outside of the work window, they must submit the proposal to Fisheries and Oceans Canada (DFO) Habitat Management staff for consideration and await their decision prior to commencing any instream works (refer to Section [h] below for more information). More information on DFO's Fish Habitat Management – Pacific Region can be found at: (http://www.dfo-mpo.gc.ca/habitat/habitat-eng.htm).

Note: Streams that are greater than 30% in gradient are assumed to be non-fish bearing and instream work windows do not apply. However, any instream sediment generated must be restricted to the immediate worksite and prevented from migrating downstream. Stream gradient must be determined using accepted methods which can be found at the Integrated Land Management Bureau's (ILMB) Resources Information Standards Committee (RISC) Website at: (http://ilmbwww.gov.bc.ca/risc/about.htm).

(b) the minimum instream flow or the minimum flow of water that must remain in the stream while the change is being made,

- The natural rate of water flow must be maintained upstream and downstream of the worksite during all phases of instream activity.

(c) the removal of material from the stream or stream channel in connection with the change,

- The permanent removal of stable, naturally occurring material from the stream or stream channel must be minimized and completed only as necessary to make the change in accordance with Part 7 of the *Water Regulation*.
- All activities in and about streams must be conducted in a manner that does not cause harm to fish or fish habitat and species at risk or their habitat. Limited information on species at risk can be found on the internet at MoE's Endangered Species and Ecosystems Website at: (http://www.env.gov.bc.ca/atrisk). The services of a Qualified Professional are to be engaged if the works could impact species at risk or their habitat.
- The removal of material must not lead to stream channel instability or increase the risk of sedimentation into the watercourse immediately downstream of the worksite.
- Any spoil materials must be deposited in a stable area and in such a way that the excavated material will not contribute sediment or debris to the stream or adversely impact riparian habitats or species at risk and their habitats.

(d) the addition of substance, sediment, debris or material to the stream or stream channel in connection with the change,

- Instream activities must be conducted in the dry with the worksite isolated from water flowing in that portion of the stream channel.
- Any materials placed within the stream channel (e.g. rip-rap) that are required in connection with the change, must not result in a constriction of the natural stream channel width.
- Machinery must be located and operated from outside of the wetted perimeter of the stream (e.g. from the top of the bank or from within a naturally dry stream channel).
- Measures must be taken to ensure that no deleterious substances (e.g. fuel and other hydrocarbons, soil, road fill, or sediment), which could adversely impact water quality, fish and fish habitat and other aquatic life, can enter the stream channel. Equipment used in close proximity to the stream must be free of exposed deleterious substances.
- Care shall be taken during all phases of the work to prevent downstream delivery of sediment or debris from the immediate worksite. Sediment control structures such as silt fences, straw bale dikes, settling basins, ditch blocks, or filter cloth must be placed and remain functioning in all instances where there is any risk of sediment delivery into streams from work activities, road surfaces and ditches. Sediment control structures must be maintained and cleaned out on a regular basis to remain functional and cleaned out prior to removal.
- Work is to be suspended if the sediment control measures are ineffective. In the event of uncontrolled sediment release, proponents are directed to stabilize and correct the uncontrolled sediment release into streams as soon as possible and to notify the Ecosystem Section of the Ministry of Environment and Fisheries and Oceans Canada.
- During periods of heavy or persistent precipitation, work must stop if continuing the work will result in sediment delivery downstream of the immediate worksite. Measures must be taken to minimize the risk of on-going sediment delivery to the stream during the shutdown period.
- Fueling and servicing of vehicles and equipment must occur away from the streams and any spills must be properly cleaned up and reported as required by the *Spill Reporting Regulation (B.C. Reg. 263/90)*. An unofficial electronic version of the regulation can be found on the internet at: (http://www.qp.gov.bc.ca/statreg/reg/E/EnvMgmt/263_90.htm). Every effort must be made to contain the spill and prevent adverse impacts to the environment.
- For the purposes of implementing works where machinery access is required from both sides of the stream and where there are no other practicable alternatives, 1 crossing (over and back) of the stream is allowed, provided the selected location serves to avoid significant disturbance to stream banks, riparian vegetation and instream fish habitat such as large organic debris. If a suitable crossing location which serves to avoid the above-described damage cannot be found, a temporary crossing structure must be installed to facilitate the works from both sides of the stream. Use of machinery to install the temporary structure is restricted to one side of the stream. If the above-stated conditions cannot be met, the proponent must retain the services of a Qualified

Professional to develop an impact mitigation plan. This mitigation plan must be submitted to MoE for information purposes prior to the commencement of works. If the stream is not fish bearing, the proponent can proceed with the proposed works and must implement the impact mitigation measures specified by the Qualified Professional. If the stream is fish bearing, the proponent must also submit the Qualified Professional's impact mitigation plan to Fisheries and Oceans Canada (DFO) Habitat Management staff for consideration and await their decision prior to commencing any instream works.

- Any concrete work must be undertaken with caution. As wet cement/concrete is highly toxic to aquatic organisms, there must be no deposition into the stream or any watercourse through spillage, hosing off surfaces [for example, exposed aggregate wash off and wet curing], rain, cleaning of tools, etc. All cast-in-place concrete and grouting must be completely separated from any stream or watercourse for a minimum of 48 hours if ambient air temperature is greater than 0 degrees C or for 72 hours if ambient air temperature is less than 0 degrees C.
- The instream placement of materials treated with wood preservatives is discouraged. If wood preservative treatment is necessary, the chemical to be used is chromated copper arsenate (CCA); the use of creosote is not permitted. Application must be upland, well away from any stream or watercourse. Application of treatment solutions must never be carried out to installed materials on or over water unless appropriate measures are taken to prevent the introduction of the solution into the stream. Treated dry wood must be rinsed off after application and drying, then weathered for a minimum of 45 days prior to use in or about the stream. Wash waters must be contained and removed off-site for proper disposal. In addition, pressure treated lumber containing CCA should be allowed to fully react and be weathered for a minimum of 45 days prior to installation. Purchased pressure treated wood may not have had the opportunity to fully react and weather for 45 days, and proponents are responsible to ensure this has occurred. Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region can be found on the internet at: (http://www.wwpinstitute.org).

(e) the salvage or protection of fish or wildlife while the change is being made or after the change has been made,

- If diversion of water is required to isolate the worksite, proponents must salvage all fish within the area where water will be removed. A "Scientific Collection Permit" is required to salvage fish. Please contact the Permit and Authorization Service Bureau (PASB) at 1-866-433-7272 (1-866-433-PASB) for information on obtaining a permit. Information can also be found on the internet at the Permit and Authorization Service Bureau Website at: (http://www.env.gov.bc.ca/pasb/applications/process/scientific_fish_collect.html).
- Measures must be taken to ensure that equipment such as water pumps do not harm fish, reptiles or amphibians.

(f) the protection of natural materials and vegetation that contribute to habitat or stream channel stability,

- Damage above the high water mark to values such as banks and stream side (riparian) vegetation in the vicinity of the work area must be minimized. Unavoidable damage that occurs must be remedied as per section [g] below.
- Any trees at the work site or within the clearing width area adjacent to streams that must be removed must be felled away from the stream to the fullest extent possible. Where this is not possible, the tree(s) and all resultant debris must be removed from the stream channel as soon as possible after felling, or at most, within the same workday by means that avoid machinery being placed within the stream channel.
- Minimize disturbance to natural materials, including but not necessarily limited to embedded logs and boulders, as well as vegetation that contribute to fish and wildlife habitat or stream channel stability.

(g) the restoration of the work site after the change has been made, and

- Complete required restoration works on disturbed areas including erosion control measures that will function as close as possible to natural pre-disturbance conditions.
- Soils exposed as a result of work activities that have the potential for sediment delivery to the stream must be promptly re-vegetated. All disturbed soils adjacent to the stream shall be re-vegetated with a suitable mix of grass and some shrubs and/or trees as soon as works are completed or as soon as site conditions are conducive to growth. Unpalatable species are to be used where livestock grazing occurs.

(h) the requirement to obtain an approval from the federal Department of Fisheries and Oceans in connection with the change.

- Proponents are responsible for complying with the federal *Fisheries Act*. No harmful alteration, disruption or destruction (HADD) of fish habitat is authorized by this document.
- Fisheries and Oceans Canada (DFO) Habitat Management staff may authorize a net loss of fish habitat, or HADD, where a compensation package can be negotiated between DFO and the proponent.
- Proponents are responsible for determining whether the federal Fisheries and Oceans Canada (DFO) Habitat Management staff must be consulted with and whether an authorization from DFO is required prior to making the change. DFO Habitat Management staff in the MoE Kootenay Region can be reached in Nelson at: 250-352-0891.

(i) Additional terms and conditions applicable to stream crossing installations (e.g. bridges and/or culverts.),

In addition to all of the terms and conditions stated above, the following terms and conditions must be met when the works involve the installation and/or replacement of stream crossing structures.

- Open bottom structures such as clear span bridges or open bottom culverts are preferred on all fish bearing streams. If proponents wish to install a closed bottom culvert (e.g. round or elliptical) on a fish bearing stream, they must ensure that upstream fish passage is maintained beyond the crossing location throughout the culverts life. In addition, closed bottom culverts must be embedded in order to provide a natural substrate such that there is no net loss of fish habitat. To achieve this, proponents must comply with the requirements detailed in Section 3.2 of the "Fish-Stream Crossing Guidebook" (FSCG) dated March 2002, which can be found on the internet at: http://www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/Guidetoc.htm
- If proponents are not confident that they can provide a natural substrate as well as fish passage, it is recommended that they retain the services of a Qualified Professional. **Important Note**: Some other aspects of the FSCG are not current and therefore do not apply to instream works in the Kootenay Region. For example, the timing windows referred to in Section 2.3.1 and Appendix 2 are no longer current and therefore do not apply. In addition, culvert capacity after embedment must be equivalent to the hydraulic capacity of the stream channel or it must be capable of passing the 1 in 200 year maximum daily flow as specified by Section 44(a) (vii) of the *Water Regulation*, and not the 100-year return period peak flow as specified in Section 3.2 of the FSCG.
- Bridge abutments or other structures and materials must not be placed within the stream channel width. Rip-rap must be keyed into the stream bank and must not constrict the natural stream channel width.
- Road material and gravel on a bridge deck or culvert fill must be prevented from entering the stream.
- Water in roadside ditches must not flow directly into the stream channel but rather be directed into the adjacent riparian forest to permit filtering prior to entering the stream. Flow within ditches on the upslope side of the road should be directed through a drainage culvert and permitted to filter through the riparian vegetation prior to entering the stream.

This document does not supersede the requirements of the *Water Act* and *Regulations*, BC *Wildlife Act, Wildlife Amendment Act, Fish Protection Act, Riparian Areas Regulation,* federal *Fisheries Act, Species at Risk Act, Local Government Act* or any other related legislation. The proponent is obligated to comply with all applicable federal, provincial or municipal enactments.

In addition to achieving all of the above requirements, it is recommended that copies of the following documents be kept or posted at the work site during implementation of the works so they may be shown to a Ministry of Environment official upon request:

- A copy of this document.
- A copy of any impact mitigation plan(s) that may have been developed by a Qualified Professional as described above.
- A copy of any other documentation pertinent to the works.