

Chapter 4.8 Completing Changes in and About a Stream Activity Details

4.8 Changes in and About a Stream

Applicants applying for an oil and gas activity causing changes in and about a stream as defined in the Water Sustainability Act must complete the changes in and about a stream application tab in the Application Management System (AMS). The changes in and about a stream tab is made up of two components: stream details and exemptions. This section includes an overview of changes in and about a stream activity permitting, guidance regarding changes in and about a stream planning and design, details related to changes in and about a stream specific application requirements and detailed instructions for completing the data fields within the changes in and about a stream activity tab.

Please Note:

This manual is written as a whole and available to industry in sections to allow permit holders to access activity chapters. It is prudent of the permit holder to review the manual in its entirety and be aware of the content in other sections of the manual.

4.8.1 Changes in and About a Stream Defined

Common changes in and about a stream activities include the construction, maintenance and removal of watercourse crossings and crossing structures. Other types of works that comprise changes in and about a stream include stream diversion, stream bank erosion protection and/or stabilization, debris removal and beaver dam management.

Changes in and about a stream (instream works) are defined in the [Water Sustainability Act \(WSA\)](#) as:

- Any modification to the nature of a stream including the land, vegetation, natural environment or flow of water within a stream.
- Any activity or construction within the stream channel that has or may have an impact on a stream.

The Commission considers any works within the high water mark of any stream as “changes in and about a stream.”

Doing any instream works without a written authorization is a violation of the WSA. This includes the construction of dugouts across streams, or the diversion of streams into dugouts, to enhance water capture and storage.

Instream works are authorized in one of two ways. For oil and gas activities (wells, pipelines, geophysical, facilities or roads) permitted under OGAA, instream works can be authorized by the oil and gas activity permit, and the provisions of OGAA and the EPMR apply. For instream works associated with related activities, including NEB related approvals, instream works must be authorized in accordance with Section 11 of the WSA. There are some distinct differences between these application streams with respect to instream works.

Despite the differences in the definition of a “stream” between the WSA and EPMR, operational assessments and field surveys usually integrate the two criteria. As noted further in this document, all applications for changes in and about a stream must indicate the riparian classification of the stream per Section 22-24 of the EPMR, as this detail is required for the Commission’s review. This is further detailed in the Environmental Protection and Management Guideline (EPMG).

Instream Works for Oil and Gas Activities

The legal mechanism by which instream works associated with oil and gas activities is authorized is OGAA.

Section 39(5) of the Water Sustainability Regulation defines instream works authorized by a permit issued under the OGAA and in accordance with the EPMR and any applicable permit conditions as authorized changes; additional

authorization under Section 11 of the WSA is not required for OGAA activities. Thus, for instream works associated with oil and gas activity applications, the definition and classification of streams as defined in the EPMR will be used to evaluate and authorize works.

The EPMR defines a stream as a watercourse scoured by water or containing observable deposits of mineral alluvium, a continuous channel bed greater than 100 metres in length, connected to a fish-bearing stream or lake or waterworks (all as defined in the regulation).

Small ephemeral or intermittent streams that do not meet the EPMR definition and classifications of a stream (S1-S6) are classified as “Non-Classified Drainages (NCD)”. An NCD is an ephemeral or intermittent watercourse having a continuous defined channel that is less than 100 metres in length and at some points may spread over a level area without defined banks, before flowing again as a defined channel.

Please Note:

An NCD is not considered a stream under the EPMR, therefore it is not required to be identified or evaluated in an oil and gas activity application. It should not be included in the spatial data for the application. However, if the existence of the watercourse is suggested in the TRIM data, the construction plan should show it as NCD.

Instream Works for Related Oil and Gas Activities

The legal mechanism by which instream works associated with a related activity are authorized is Section 11 of the WSA.

The requirement for authorizations for instream works under Section 11 of the WSA pertains to streams as defined in that Act, which has a broader meaning than in the EPMR. A “stream,” as defined in the WSA, includes any natural watercourse or source of water supply, whether usually containing water or not, and a lake, river, creek, spring, ravine, wetland, swamp or gulch”. Streams do not have to contain water in all times of the year, and can be ephemeral or intermittent.

The term “natural watercourse” is not defined in the WSA; however, common usage indicates that a natural watercourse is a natural channel where water flows over a bed between defined banks. The flow of water does not need to be constant, but the channel must be a permanent and distinct feature on the landscape. The watercourse may also, at some point, spread over a level area without defined banks, before flowing again as a defined channel.

Please Note:

A NCD is usually a stream under the WSA and must be identified and included in the spatial submission, as relevant, in any application for a related activity. Authorization under Section 11 of the WSA must be acquired before commencing any works in or about an NCD.

Applying for Authorization to Carry Out Instream Works

Activities comprising of or including instream works, as defined above, require authorization in writing. Commission staff may need to make a determination during application or project review as to whether the works will be authorized under OGAA or the WSA. Guidance on operational assessment is as follows:

- Streams, as mapped in the provincial Freshwater Atlas coverage (TRIM maps, at 1:20,000 scale), are assumed to be streams under the WSA and OGAA, unless demonstrated otherwise.
- Activities crossing or intersecting a “mapped” stream, but where there is believed to be no stream, require the submission of field-based evidence collected by a qualified individual to demonstrate that there is no stream.
- Small streams, which can have subtle field expression, are difficult for field surveys done in the winter season, when snow covers the ground. It should not be assumed that because a stream cannot be seen under snow cover that a stream does not exist.
- Any streams meeting the S1-S6 classification of streams as defined in the EPMR are required to further identify the riparian management areas associated with the streams as part of the application deliverables. Currently, there is no ability to select NCD as a classification in the Application Management System (AMS). Until this is remedied, applicants should select the S6 classification and complete the following:

- Under the “Exemption” banner, select “No” as the answer to the question: *Do Stream Crossing Methods Meet Best Management Practice?* Indicate in the rationale text box that the stream was field verified to be an NCD.

There are instances where a stream exists in the field but is not depicted on the provincial map base. Authorization for any works in or about the stream is still required.

If a feature depicted as a stream on the Freshwater Atlas coverage is not evident during the field survey, the construction plan submitted in conjunction with the application should note “No Watercourse Evident” or “No Watercourse Visible” (or something similar) and instream works for that watercourse do not need to be included in the application itself (i.e. in the spatial data submitted with the application). The features must not be listed as NCD in the application.

Man-made ditches and ditch lines are generally not streams under the WSA, and applicable authorization may not be required for a person to do “works” associated with ditches. That said, where manmade structures have sufficiently naturalized, they may become streams to which the provisions of WSA or OGAA apply. Where there is a question of whether or not a watercourse or waterbody is a stream, please contact the appropriate Commission’s Authorizations Manager to discuss the specific situation and how works in or in proximity to that feature may be considered in an application.

In addition, in some cases, where ditches are being used as fish habitat (this can occur commonly on floodplain areas) the requirements of the federal *Fisheries Act* may apply.

4.8.1 Creating a Changes in and About a Stream Activity

Authorization to carry out changes in and about a stream can be applied for as a stand-alone project, in combination with a related activity or with an oil and gas activity. Stand-alone applications for instream works must provide a cross

reference number to a primary oil and gas activity in accordance with Section 24(3) of OGAA.

Regardless of what regulatory provision the instream works will be authorized under, the location of any proposed works must be included in the spatial data and “Changes in and About a Stream” must be selected as an activity type in the application. For information on completing this tab in the AMS, refer to section 4.8.4, below.

Applications can include multiple stream impacts (e.g. multiple stream crossings for a road, pipeline or geophysical program). For pipeline crossings where access is also required, the access and the pipeline crossings must be applied for as two separate crossings: one crossing for the access and one crossing for the pipeline.

Changes in and About a Stream Authorization Amendments

Permit holders must submit an amendment application to add, or modify any portion of an authorization for instream works. For any instream works authorized through an OGAA permit, any modifications to the authorization will require an amendment to the OGAA permit. Amendments to authorizations associated with related activities can be applied for as a stand-alone amendment to the changes in and about a stream authorization. An amendment can include requests for multiple changes to a single permit but multiple amendment applications cannot be submitted for the same permit at once.

Term of Approval

Changes in and About a Stream authorizations are only valid for the initial construction of the works, unless otherwise indicated in the permit or authorization. Specific permit provisions authorizing instream works for general maintenance and operations activities associated with OGAA road and pipeline permits authorize instream works for the life of the activity. Refer to the terms of the specific permit when considering whether additional authorization is required for instream works for maintenance or operations purposes.

4.8.2 Changes in and About a Stream Planning & Design

This section provides planning requirements, guidelines and considerations when planning an application for instream works. The Commission reviews the application relative to technical information provided in AMS; therefore, applicants should review this section for an indication of any application requirements or attachments required.

Regulatory Requirements

Changes in and about a stream must meet the applicable design and operational requirements outlined in the [Oil and Gas Activities Act](#) (OGAA), the [Water Sustainability Act](#) (WSA), the [Water Sustainability Regulation](#) (WSR), the [Ground Water Protection Regulation](#) (GWPR), the [Dam Safety Regulation](#) (DSR), and the [Water District Regulation](#) (WDR). The Commission does not grant exemptions under the WSA.

Guidance Requirements

In addition to this Manual, applications for instream works should follow guidance provided in the EPMG for minimizing and/or avoiding impacts on the surrounding landscape. Additional guidance is available from the following:

- [Fish-stream Crossing Guidebook](#) (published by the Ministry of Forests, Lands and Natural Resource Operations, the Ministry of Environment, Fisheries and Oceans Canada) for more information on planning stream crossings on fish bearing streams.
- For many types of proposed works, relevant standards and best practices are found at the following Ministry of Environment link: [Standards and Best Practices for Instream Works](#).
- The Canadian Association of Petroleum Producers provides guidance on pipeline-associated watercourse crossings: [Pipeline-Associated Watercourse Crossings](#).

If the oil and gas activities cannot adhere to these guidance recommendations, a rationale must be included in the permit application. This rationale must include

site specific information regarding the guidelines not followed, an explanation of why they cannot be followed, and the proposed plan and mitigation strategies the company will implement in lieu of the guidance recommendations not followed.

Riparian Classification

All watercourses impacted by the application must be assigned a riparian classification as defined in Section 22, 23 and 24 of the EPMR. Guidelines and requirements for riparian classification of streams, wetlands, and lakes are provided in Chapter 5 of the Commission's EPMG. The riparian classification must be entered in the Application Management System. Please see note above regarding non-classifiable streams (NCDs).

Crossing-type Selection

For watercourse crossings, the crossing type must be indicated on the application. Crossing types include: bridge, culvert, ice bridge, snow fill, clear span bridge, bore, directional drill, open or closed bottom structure, ford, flow isolation and open cut. Applications can include multiple stream impacts and/or crossings. For pipeline crossings where access is also required, the access and the pipeline crossings must be applied for as two separate crossings: one crossing for the access and one crossing for the pipeline.

Where primary and contingency crossing methods are being proposed for either a pipeline or access crossing, when completing the application in AMS indicate "Multi-types" as the crossing type and attach a rationale as an application deliverable explaining the multiple options proposed. The rationale must specify the preferred and the alternate crossing methods that may be installed, and the circumstances in which all methods would be employed.

4.8.3 Changes in and About a Stream Activity Requirements

This section outlines application requirements for changes in and about a stream application. Requirements are dependent on the characteristics of instream works and are outlined in full details below. In most cases, the details are input into the

changes in and about a stream application tab in AMS, but may require the upload of supporting attachments, including:

- Sketch plan (if applicable).
- Fisheries habitat assessment.
- Mitigation strategy.

Attachments must meet specific size and file formatting restrictions as defined in Chapter 7 of this manual.

Fish Habitat Assessment

Where instream operations are required on a fish bearing stream or where there may be an impact to fish and/or fish habitat, a fish habitat assessment is required to be submitted with the application. Applicants are responsible for determining fish presence or absence and assessing fish streams for fish habitat values prior to application for instream works.

Plans, Designs and Drawings Signed by a Qualified Professional

Some changes in and about a stream applications require the submission of designs, plans and drawings signed and sealed by a Professional Engineer (P.Eng) licensed or registered under the Engineers and Geoscientists Act, and/or a Qualified Professional (QP). Applications that require these deliverables include:

- Bank erosion protection – P.Eng.
- Bridge construction, maintenance or removal (other than clear span) – P.Eng.
- Major culvert construction, maintenance or removal – P.Eng (a Major Culvert is a pipe that has a diameter of 2,000 mm or greater, a pipe arch having a span of 2,130 mm or greater, an open bottom arch having a span of 2,130 mm or greater; or any stream culvert with a maximum design discharge of 6 cubic metres per second or greater.
- Stream diversion – QP.
- Large debris removal – QP.

- Gravel removal – QP.

For these purposes, a QP is someone who through suitable education, experience, accreditation and knowledge may be reasonably relied on to provide advice within their area of expertise. They will usually be a professional registered and in good standing with a British Columbia professional association:

- A Professional Engineer or Professional Geoscientist licensed or registered under the Engineers and Geoscientists Act.
- A Forest Technologist or Professional Forester registered with The Association of British Columbia Forest Professionals.
- A Biology Technologist or Professional Biologist registered with The Association of Professional Biology.
- A Professional Agrologist registered with the British Columbia Institute of Agrologists.
- Has the education, knowledge, experience and expertise to classify streams under the WSA and EPMR, and to sign and seal plans and designs to make changes in and about a stream.

Works plan

For applications involving works other than watercourse crossings, a Works Plan must accompany the application. The Works Plan for projects involving gravel or debris removal, bank erosion protection, or stream diversion, must be completed by a qualified professional. Works Plans should include the following:

- A detailed description of the works proposed including a rationale for why the works are required.
- Site-specific stream and aquatic habitat information.
- A description of the operational activities that the company will utilize to avoid or mitigate impacts to the stream values.
- A project monitoring plan.
- Any other relevant information that may assist the decision maker in rendering a decision on the application. Photos are recommended.

4.8.4 Changes in and About a Stream Activity Submission: Data Field Completion

Table 4.M below provides detailed instructions for each data field requiring input within the AMS.

Please Note:

For stand-alone Water Sustainability Act authorizations, AMS does not populate a Rights Holder Engagement tab. However, rights holder engagement is required and the line list must be uploaded under the attachments tab in AMS.

Table 4-M: Application Instruction Table for the Changes in and About a Stream Tab

Label	Instructions
Proposed Start Date	Select the proposed start date for the project.
Proposed Completion Date	Select the proposed completion date for the project.
Activity Description	A description of the proposed works is to be included here. Provide proposed project timing including start time and finish time. Additional information is encouraged if relevant to the application.
Sketch Plan Attached	Indicate yes, if attaching a sketch plan that illustrates in detail the location and extent of the planned activities.
Stream Impact Specification	
File XREF Number (where it is displayed)	Select the XREF number to which the application relates.
No File XREF Rationale (where it is displayed)	Provide a rationale indicating why an application is being made for changes in and about a stream where no file cross reference number is available.
Stream/Watercourse Name	Enter the name of the proposed crossing.

Label	Instructions
Duration	Select the duration the crossing will impact the stream.
Riparian Class	Select the riparian classification of the watercourse to be crossed. If the impacted watercourse is a fish stream, a Fish Habitat Assessment must be attached as an application deliverable to the application package.
Bank Full Stream Width (m)	Enter the bank full width (metres) of the stream at the location of the proposed works.
Stream Gradient (%)	Enter the gradient of the stream (percent) at the location of the proposed works.
Crossing Type Meets Peak Flow	For watercourse crossings associated with roads only. Indicate if the crossing has been designed to pass the highest peak flow of the stream that can be reasonably expected, as per Section 6 of the Oil and Gas Road Regulation. If no, provide rationale.
Peak Flow Rationale	If the crossing type does not meet the peak flow requirements, provide rationale.
Fisheries Habitat Assessment Indicator	Attach a Fisheries Habitat Assessment for works in and about a stream on all fish streams (as defined in the EPMR).
Exemptions	
Do Stream Crossings Meet Best Management Practice:	Indicate yes, if the activity has been planned and will be undertaken in accordance with the Environmental Protection Management Regulation and in accordance with the Water Sustainability Act.
Stream Crossings Meet Best Management Practice Rationale	If crossing method will not be undertaken in accordance with the EPMR and in accordance with the Water Sustainability Act, provide rationale and a mitigation strategy for the alternate proposed crossing method.