

**ENVIRONMENTAL
GUIDE FOR
FISHERIES –
BEST
MANAGEMENT
PRACTICES**

Ministry of Transportation

2025

MINISTRY OF TRANSPORTATION

**Environmental Guide for Fisheries:
Best Management Practices**

ISSUED BY:

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This document was developed to support the MTO's Environmental Guide for Fisheries, and the MTO Fisheries Protocol outlined within the guide. It was designed in consultation with various groups within MTO, including MTO Regional Fisheries Working Group. Historical contributions to the document also included Fisheries and Oceans Canada and the Ministry of Natural Resources. It is intended to be a living document that will be reviewed and revised as necessary.

Comments and Suggestions

The Ministry of Transportation welcomes comments and suggestions on ways to improve the document with the objective of providing a practical and pragmatic approach to environmental management in the Province of Ontario. MTO anticipates that changes will be warranted to clarify, improve, and incorporate new information.

The format of the document is designed to accommodate such changes. Such revisions and amendments will be incorporated in later editions of this document. MTO will not formally respond to unsolicited comments submitted in response to the document.

VERSION HISTORY

Version #	Date	Description of Major Change
1.0	April 2015	MTO Best Management Practices Manual for Fisheries
2.0	Jan 2016	MTO Best Management Practices Manual for Fisheries
2.1	June 2016	MTO Best Management Practices Manual for Fisheries
2.2	Mar 2017	MTO Best Management Practices Manual for Fisheries
2.3	May 2018	Removal of the Culvert Extension/Replacement BMP
3.0	April 2020	<p>Changed to Environmental Guide for Fisheries – Best Management Practices Manual.</p> <p>Updated to reflect current policies, procedures, and legislative requirements, including alignment with the updated Environmental Guide for Fisheries and 2019 <i>Fisheries Act</i> amendments.</p> <p>“Check box” indicating when the BMP can be used has been removed; information has been included within the scope section.</p> <p>Like for Like Culvert Replacement BMP added into the manual.</p>
4.0	January 2025	<p>Changed to Environmental Guide for Fisheries – Best Management Practices</p> <p>Amended to reflect the non-renewal of the MTO/DFO/MNR Fisheries Protocol and agreement with Fisheries and Oceans Canada and the Ontario Ministry of Natural Resources.</p> <p>Updated Glossary to be consistent with the other MTO Environmental Guides for Fisheries.</p> <p>Guidance on Indigenous engagement and MTO’s duty to consult.</p> <p>Minor editorial changes.</p>

Disclaimer

Cette publication hautement spécialisée (Environmental Guide for Fisheries – Best Management Practice) n'est disponible qu'en anglais conformément au Règlement 671/92, selon lequel il n'est pas obligatoire de la traduire en vertu de la Loi sur les services en français. Pour obtenir des renseignements en français, veuillez communiquer avec le ministère des Transports de l'Ontario au : 416-585-6310.

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1 OVERVIEW OF THE FISHERIES BMP GUIDE

The MTO Environmental Guide for Fisheries – Best Management Practices (Fisheries BMPs) is intended to provide MTO and MTO Service Providers with the necessary procedures on how to undertake common activities in a manner that avoids harmful impacts to fish and/or fish habitat. It provides detailed requirements on the permissible scope of work, operational constraints, and mitigation measures that must be followed. The Fisheries BMPs can be used for maintenance activities, major, and minor capital construction.

- The Fisheries BMPs have been developed to streamline the regulatory review process for common activities in or near a waterbody with minimal to no impacts to fish and fish habitat, by identifying the necessary mitigation measures needed to avoid causing death of fish or harmful alteration, disruption, or destruction (HADD) of fish habitat.
- Activities that are carried out in accordance with all of the operational constraints, protection measures, and submission requirements of each Fisheries BMP should be considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol, and as such, may proceed without further review.
- In case of an emergency situation where emergency work may result in death of fish or HADD of fish habitat, or may impact aquatic species at risk, the contents of this Fisheries BMP may not be sufficient to ensure compliance with the *Fisheries Act*, *Species at Risk Act*, and/or the *Endangered Species Act*. Follow the MTO emergency work procedures outlined in the MTO Environmental Guide for Fisheries (Fish Guide) for capital work and the MTO Environmental Guide for Fisheries – Maintenance Works (Fisheries Maintenance Guide) for maintenance work.
- Users of this document are reminded to refer to the step-wise process identified in MTO Fisheries Protocol within the Fish Guide and Fisheries Maintenance Guide for additional information. Fisheries BMPs are applied at Step 3 of the MTO Fisheries Protocol process. Steps 1 and 2 are to be undertaken before proceeding with work under a Fisheries BMP.
- MTO may have a legal duty to consult Indigenous communities when undertaking work that may impact a watercourse, due to potential impacts on Aboriginal and treaty rights. The duty to consult is the Crown's legal obligation to consult an Indigenous community when it is contemplating conduct that may adversely affect the community's established or credibly asserted Aboriginal or treaty rights (e.g., fishing). MTO has processes to determine and fulfil duty to consult requirements for activities identified within this BMP. Additional information regarding MTO's duty to consult is provided in the Fish Guide.
- Activities undertaken in relation to the project shall comply with the federal *Species at Risk Act* and the provincial *Endangered Species Act* as outlined in the MTO

Fisheries Protocol. It is up to the user of a Fisheries BMP to obtain all necessary permits required to proceed with the work. Additional requirements regarding species at risk are outlined in the Fish Guide (for capital projects) and Fisheries Maintenance Guide (for maintenance work).

- Each Fisheries BMP includes the following sections:
 - **Scope** – describes the specific activity and the works that can be undertaken.
 - **Additional References** – provides additional guidance tools specific to the activity being conducted (if available for the BMP).
 - **Maintenance/Construction Procedures:**
 - **Potential Impacts to Fish and Fish Habitat** – outlines the impacts that may occur as a result of the activities being conducted.
 - **Operational Conditions** – states that all works conducted in accordance with all the operational constraints, protection measures, and submission requirements identified in each Fisheries BMP should be considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol (if applicable for the BMP) outlined in the Fish Guide and Fisheries Maintenance Guide.
 - **Operational Constraints and Protection Measures** – outlines the necessary mitigation measures to follow to avoid impacts that may result in death of fish or HADD of fish habitat.
 - **Submission Requirements** – outlines the form that needs to be submitted prior to the commencement of works.

1.1 COMPANION DOCUMENTS

The Fisheries BMP Guide was developed as a supplemental document to support Step 3 of the MTO Fisheries Protocol and is meant to be read in conjunction with the MTO Environmental Guides for Fisheries described below.

1.1.1 MTO ENVIRONMENTAL GUIDE FOR FISHERIES

The MTO Environmental Guide for Fisheries (Fish Guide) provides direction, guidance, and documentation with respect to protecting fish and fish habitat on provincial transportation projects and undertakings. It guides MTO staff and MTO Service Providers through each step of the MTO Fisheries Protocol and ultimately, to determine whether a project is likely to result in the death of fish or harmful alteration, disruption, or destruction (HADD) of fish habitat. The Fish Guide also provides direction on additional fisheries information required to be collected and documented to support MTO project needs (such as the Environmental Assessment process), provides information related to provincial and federal requirements for works impacting aquatic species at risk or their habitat, and what to do in emergency situations.

1.1.2 MTO ENVIRONMENTAL GUIDE FOR FISHERIES – MAINTENANCE WORKS

The MTO Environmental Guide for Fisheries – Maintenance Works (Fisheries Maintenance Guide) was developed for MTO staff and MTO Service Providers to provide an overview of the requirements for typical MTO maintenance projects. This guide outlines the tasks and decision points for Steps 1-3, 5, and 8 of the MTO Fisheries Protocol and provides general information on species at risk and emergency notification procedures.

2 REFERENCES

The following list of regulatory, policy, standards and guidelines are provided for reference purposes to support the use of this document.

2.1 FEDERAL STATUTES

- [Fisheries Act, R.S.C., 1985, c. F-14](#)
- [Species at Risk Act \(S.C. 2002, c.29\)](#)

2.2 PROVINCIAL STATUTES

- [Endangered Species Act, S.O. 2007, c.6](#)

2.3 FEDERAL POLICY AND GUIDELINES

- [Department of Fisheries and Oceans \(DFO\) Code of Practice: End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater](#)

2.4 PROVINCIAL POLICY AND GUIDELINES

MTO DOCUMENTS CAN BE FOUND ON THE MTO TECHNICAL PUBLICATIONS WEBSITE:

<https://www.library.mto.gov.on.ca/sydneyplus/techpubs/portal/tp/tdviews.aspx>

- MTO Environmental Guide for Fisheries
- MTO Environmental Guide for Fisheries – Maintenance Works
- MTO Highway Drainage Design Standards
- MTO Drainage Management Manual
- MTO Environmental Guide for Erosion and Sediment Control During Construction of Highway Projects

2.5 ONTARIO PROVINCIAL STANDARD SPECIFICATIONS, CONSTRUCTION

- OPSS.PROV 180 General Specification for the Management of Excess Materials
- OPSS.PROV 182 Environmental Protection for Construction in and Around Waterbodies and on Waterbody Banks
- OPSS.PROV 517 Dewatering and Temporary Flow Passage Systems
- OPSS.PROV 803 Vegetative Cover
- OPSS.PROV 804 Temporary Erosion Control
- OPSS.PROV 805 Temporary Sediment Control
- OPSS.PROV 825 Aggregates in Waterbodies

2.6 ONTARIO PROVINCIAL STANDARD SPECIFICATION, MATERIAL

- OPSS.PROV 1005 Aggregates - Waterbody

3 BEAVER DAM REMOVAL

3.1 SCOPE

This MTO Best Management Practice (BMP) applies to beaver dam removal within a waterbody supporting fish and fish habitat.

This BMP for Beaver Dam Removal may be used for the following:

- Removal of beaver dams, including partial removal (e.g., breaching), to protect, maintain or construct infrastructure or to avoid the flooding of private and public land within in-water work timing windows.

This BMP for Beaver Dam Removal may not be used for the following:

- Removal activities outside of the appropriate in-water work timing windows.
- Removal activities that may adversely affect a fish and fish habitat, or private property uses that depend on the dam's existence, both upstream and downstream.
- Removal activities beyond removing or breaching the beaver dam itself.
- Modification of the waterbody bed or waterbody bank downstream of the beaver dam (e.g., widening, straightening, ditching, etc.).
- Use of explosives to remove beaver dams.
- Beaver dam removal shall not be conducted in the winter when the pond is frozen unless it is deemed an emergency.

An emergency beaver dam removal can be carried out at any time of the year in situations where there is imminent risk to life, public safety, damage, or loss of property, or when the highway infrastructure has been damaged and requires repair as a result of a beaver dam failure. The emergency work process shall be followed as outlined in [Section 1](#). This will require different notification requirements as outlined below in the submission section. Beaver dam removal undertaken as emergency work should follow the conditions, operational constraints, and protection measures within this BMP to the greatest extent possible to avoid causing the death of fish or harmful alteration, disruption, destruction of fish habitat.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is the responsibility of the user of this BMP to obtain all necessary permits required to proceed with the work.

Note: The MNR Work Centre shall be contacted before proceeding with the beaver dam removal, to identify any fishery or other public uses that may be affected by beaver dam removal. Consultation with users identified by MNR may be necessary before removal of the dam can proceed. Identify any safety concerns or flag potential downstream infrastructure or stakeholders who should be consulted.

3.2 ADDITIONAL REFERENCES

- [MTO BMP for Maintenance of Riparian Vegetation in Existing Rights-of-Way](#)
- [DFO Interim Code of Practice: End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater](#)
- [Ontario In-Water Work Timing Windows](#)

3.3 MAINTENANCE/CONSTRUCTION PROCEDURES

It is important to exercise extreme caution when proceeding with beaver dam removal due to the possibility of flooding/damage to downstream property and infrastructure and negative impacts to fish and fish habitat.

3.3.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Disruption of downstream fish during spawning or nursery periods.
- Physical impacts from use of heavy machinery on land.
- Deposition of deleterious substances into the watercourse.
- Erosion and sediment release into watercourse.
- Re-entry of sediment that was removed/stockpiled into the watercourse.
- Sediment release and bank damage due to uncontrolled, cascading breaches of multiple dams.
- Release of sediments and other deleterious substances stored in the bottom of the beaver pond.
- Release of large volumes of water (that can be devoid of oxygen, particularly in winter) in a short period of time.
- Damage to the downstream channel from erosion due to sudden release of water.
- Release of excessive woody debris from the dam to downstream channel.
- Stranding of fish in isolated ponds following de-watering of pond.
- Impingement or entrainment of fish when de-watering pumps are used.

3.3.2 OPERATIONAL CONDITIONS

Beaver dam removal activities as outlined in the scope of this BMP and that are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

3.3.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

3.3.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection, including in-water work timing windows, shall be conducted according to OPSS.PROV 182.

Dewatering and Temporary Flow Passage Systems

Dewatering and temporary flow passage systems shall be according to OPSS.PROV 517 and OPSS.PROV 182.

Equipment Use

Use of equipment in waterbodies and on waterbody banks shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

3.3.3.2 GENERAL

- Beaver dam removal activities shall be scheduled to prevent disruption to sensitive fish life stages by adhering to appropriate in-water work timing windows. If these are unknown, contact MNR.
- When a series of dams is to be removed, this shall be done from downstream to upstream in order.
- Whenever possible, remove beaver dams by using hand tools. Where removal by hand tools is not possible then machinery may be used.
- The beaver dam shall be removed gradually (~20 cm at a time) to allow the water to release slowly and prevent sediment at the bottom of the pond from being released downstream. As the water levels drop in the upstream pond, increase the size of the opening to drain the pond.
- The width of the breach opening of the beaver dam shall not exceed the width of the original stream channel to prevent bank erosion and flooding of adjacent properties.
- It is preferable that removal is done during low flow conditions.
- Any proposal to conduct non-emergency work under ice-covered conditions should be consulted with the local MNR office for any additional considerations.
- Where federally listed aquatic species at risk, their residences or critical habitat occur, beaver dam removal shall not occur under frozen conditions where fish may be overwintering.

3.3.3.3 BEAVER DAMS ON PRIVATE PROPERTY

Contact the property owner for permission to enter private property. If there are issues, such as the owner refusing permission to enter:

- Area Maintenance Contactor shall contact the MTO Maintenance Superintendent; and,
- MTO staff shall contact MTO Corridor Management.

3.3.3.4 PERSISTENT BEAVER DAM ACTIVITY

The breaching or removal of a beaver dam may not prevent future beaver activity in the area. Persistent breaching or removal of a beaver dam can increase the risk of negative impacts to fish habitat.

Where a beaver dam has been previously removed, the MNR Work Centre shall be contacted if the services of a licensed trapper are required for the removal of beaver.

Once MTO has been advised by a licensed trapper or MNR that the beaver(s) have been removed, MTO shall remove the dam in accordance with the applicable operational constraints and protective measures within this BMP.

3.4 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the beaver dam removal activities. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

In the event of an emergency, complete and submit the appropriate form in accordance with the Fish Guide (capital work) and Fisheries Maintenance Guide (maintenance work).

Electronic versions of MTO Project Notification Form, Incident Notification Form PH-CC-818 (for notification during capital work), and the MTO Duty to Notify/Emergency work Notification Form (for notification during maintenance work) are available on the [MTO Technical Documents](#) website.

4 BRIDGE MAINTENANCE

4.1 SCOPE

This MTO Best Management Practice (BMP) applies to bridge maintenance activities requiring in-water works or works over a waterbody supporting fish and fish habitat.

This bridge maintenance BMP may be used for the following:

- Removal of debris to protect piers and abutments.
- Structural repairs and reinforcement, high
- Any bridge maintenance works over a waterbody and outside of the high water level (see [Glossary](#) for definition)

This bridge maintenance BMP may not be used for the following:

- In-water work/activities outside of the appropriate in-water work timing windows.
- In-water work where federally listed aquatic species at risk are present.
- Replacement reinforcement/armouring with aggregates placed below the high water level, if federally listed aquatic species at risk or significant fish habitat are present.
- Realigning the waterbody or replacing the existing bridge.
- New dredging or excavating the waterbody bed.
- New fill placed below the high water level.
- Use of explosives to remove debris, including ice build-up.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

4.2 ADDITIONAL REFERENCES

- [MTO BMP for Maintenance of Riparian Vegetation in Existing Right-of-Way](#)

4.3 MAINTENANCE/CONSTRUCTION PROCEDURES

4.3.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Introduction of sediments, concrete, and other deleterious substances (e.g., salt, paint, solvents, oil, and grease) into waterbodies.
- Removal of woody debris and riparian vegetation may alter natural habitat features and flows that exist in the waterbody.
- Operation of machinery may impact habitat on the waterbody bed and waterbody banks and result in erosion and sedimentation.
- Placement of aggregates in a waterbody to stabilize structures may alter natural habitat and flows, and block fish passage.

4.3.2 OPERATIONAL CONDITIONS

Bridge maintenance activities as outlined in the scope of this BMP that are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

4.3.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

4.3.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to OPSS.PROV 182.

Dewatering and Temporary Flow Passage Systems

Dewatering and temporary flow passage systems shall be according to OPSS.PROV 517 and OPSS.PROV 182.

Placement of Aggregates in Waterbodies

The use of aggregate in waterbodies shall be according to OPSS.PROV 825 and OPSS.PROV 1005.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

4.3.3.2 GENERAL

- Bridge maintenance activities shall be scheduled to prevent disruption to sensitive fish life stages by adhering to appropriate in-water work timing windows.
- While this BMP does not cover the clearing of riparian vegetation, the removal of select plants may be required and shall be kept to a minimum and limited to the right-of-way of the bridge. Refer to the MTO BMP Riparian Vegetation Maintenance in Existing Right-of-Way.

4.3.3.3 REMOVAL OF DEBRIS

- The removal of material shall be limited to that which is necessary to protect piers and abutments.
- Debris removal shall be by hand or with machinery operating from waterbody banks or a floating barge.

4.3.3.4 STRUCTURAL REPAIRS AND REINFORCEMENTS

- Barges or shrouding shall be used to trap and prevent concrete and other bridge materials from entering the waterbody.
- If replacement reinforcement/armouring with aggregates in a waterbody is required to stabilize eroding areas around bridge structures (e.g., abutments and/or wing walls) below the high water level, the following measures shall be incorporated:
 - Place appropriately sized aggregates into the eroding area.

- Aggregate material that is to be placed in the waterbody shall not be obtained from below the high water level of any waterbody.
- Install aggregates in the waterbody at a similar slope to maintain a natural waterbody bed alignment, ensuring that it does not interfere with fish passage or constrict the waterbody width.

4.4 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the bridge maintenance activities. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

5 CLEAR SPAN BRIDGES

5.1 SCOPE

This MTO Best Management Practice (BMP) applies to the construction of clear span bridges over a waterbody identified as supporting fish and fish habitat.

This Clear Span Bridges BMP may be used for the following:

- A bridge that is placed entirely above the high water level (i.e., including bridge approaches, abutments, footings, and armouring).

This Clear Span Bridges BMP may not be used for the following:

- In-water work/activities outside of the appropriate in-water work timing windows.
- Construction of a bridge that is located on meander bends, braided waterbodies, active floodplains, or any other area that is inherently unstable and may result in the alteration of natural waterbody functions or erosion and scouring of the bridge structure.
- Realigning the waterbody.
- Alteration or infilling of the waterbody bed.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act* as outlined in the MTO Fisheries Protocol. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

5.2 ADDITIONAL REFERENCES

- [MTO Best Management Practice for Temporary Watercourse Crossing](#)

5.3 MAINTENANCE/CONSTRUCTION PROCEDURES

5.3.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Removal of riparian vegetation adjacent to the watercourse which directly contributes to fish habitat by providing shade, cover and areas for spawning and food production.

- Stormwater run-off and the use of machinery can introduce deleterious substances to the waterbody and result in erosion and sedimentation.

5.3.2 OPERATIONAL CONDITIONS

Clear span bridge construction as outlined in the scope of this BMP that are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

5.3.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

5.3.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to OPSS.PROV 182.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

5.3.3.2 GENERAL

- Generally, there are no restrictions on timing for the construction of clear span structures as they do not involve in-water work. However, if there are any activities with the potential to disrupt sensitive fish life stages (e.g., fording of watercourse by machinery), they shall adhere to appropriate in-water work timing windows.
- Bridge approaches shall be constructed to be perpendicular to the waterbody to minimize loss or disturbance to riparian vegetation.
- Only the vegetation required to accommodate operational and safety concerns for the crossing structure and approaches, within the right-of-way, shall be removed.
- Perform bridge construction activities well away from the waterbody, if possible (i.e., preparation of piers, footings and abutments, painting, concrete mixing, sandblasting). Ensure all appropriate measures are taken to prevent deleterious substances from entering the waterbody.
- Machinery fording the waterbody to bring equipment required for construction to the opposite side is limited to a one-time event (over and back) and shall occur only if an existing crossing at another location is not available or practical to use. Refer to the MTO BMP for Temporary Watercourse Crossing, which includes considerations of timing windows.
- Stormwater runoff from the bridge deck, side slopes and approaches shall be directed into a retention pond or vegetated area to remove suspended solids, dissipate velocity and prevent sediment and other deleterious substances from entering the waterbody.

5.4 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the construction of clear span bridges. It shall be signed by the appropriate individual then submitted to and retained by the MTO Regional Environmental Section, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

6 CULVERT MAINTENANCE

6.1 SCOPE

This MTO Best Management Practice (BMP) applies to the maintenance of culverts within a waterbody identified as supporting fish and fish habitat.

This Culvert Maintenance BMP may be used for the following:

- Removal of accumulated sediment and debris that prevents the efficient passage of water and fish through the structure.
- Repair of defects in concrete including scaling, disintegration, concrete erosion, delamination, spalling, cracking, struts and bracing to prevent culvert collapses.
- Repair of defects in corrugated steel pipes.

This Culvert Maintenance BMP may not be used for the following:

- In-water work/activities outside of the appropriate in-water work timing windows.
- Reinforcement of eroding inlets and outlets if federally listed aquatic species at risk or significant fish habitat are present.
- Realigning the waterbody.
- Installing a culvert liner.
- Use of explosives to remove debris.
- Infilling or excavation of the channel upstream or downstream of the culvert.

Note: Accumulated sediment within a culvert may be indicative of an improperly sized culvert. Where culverts require repeated and/or ongoing sediment removal, a hydrological/hydraulic assessment of the culvert should be considered to determine if a culvert replacement is necessary.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

6.2 MAINTENANCE/CONSTRUCTION PROCEDURES

6.2.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Removal of woody debris that is important for cover and food production.
- Flooding and excessive waterbody scouring if blockages are removed too quickly.
- Excessive erosion and sedimentation from the use of equipment along the waterbody bank.
- Disruption of critical fish life stages.
- Replacement of eroded rock armouring can alter flows and fish movement patterns if done excessively.
- Removal of riparian vegetation and cover along the banks or shoreline of a waterbody.
- Removal of edge habitat (e.g., undercut bank, shallower areas with lower velocity, aquatic vegetation).
- Creation of barriers to fish movement (e.g., perched crossings, velocity barriers, alteration of the natural stream gradient, restrictive causeways resulting in the loss of floodplain which is used by fish for passage during high flows).
- Introduction of sediments, concrete, and other deleterious substances (e.g., salt, paint, solvents, oil, and grease) into waterbodies.

6.2.2 OPERATIONAL CONDITIONS

Culvert maintenance activities as outlined in the scope of this BMP that are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

6.2.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

6.2.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to OPSS.PROV 182.

Dewatering and Temporary Flow Passage Systems

Dewatering and temporary flow passage systems shall be according to OPSS.PROV 517 and OPSS.PROV 182.

Placement of Aggregates in Waterbodies

The use of aggregate in waterbodies shall be according to OPSS.PROV 825 and OPSS.PROV 1005.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

6.2.3.2 GENERAL

- Culvert maintenance activities shall be scheduled to prevent disruption to sensitive fish life stages by adhering to the appropriate in-water work timing windows.

6.2.3.3 DEBRIS AND SEDIMENT REMOVAL

- Debris and other materials shall be removed gradually. Whenever possible, remove debris and other materials by hand.
- Removal of debris (i.e., branches, stumps, other woody materials, garbage, etc.) shall be limited to the area within the culvert, immediately upstream and downstream of the culvert, and to that which is necessary to maintain proper culvert function and safe fish passage.
- Accumulated debris shall be removed slowly to allow clean water to pass, to prevent downstream flooding and reduce the amount of sediment-laden water going

downstream. Gradually reintroducing flow will also reduce the potential for stranding fish in upstream areas.

- Accumulated sediment removal shall be limited to within the culvert and to the level of the upstream and downstream waterbody bed, to maintain embedment of the culvert.
- Sediment shall be removed in a manner that prevents it from moving downstream.

6.2.3.4 ERODING INLETS AND OUTLETS

- If replacement reinforcement/armouring with aggregate in the waterbody is required to stabilize eroding inlets and outlets, the following measures shall be incorporated:
 - Place appropriately sized aggregate into the eroding area.
 - Aggregate that is to be placed in the waterbody shall not be obtained from below the high water level of any waterbody.
 - Install aggregate in waterbody at a similar slope to maintain a uniform waterbody bank and/or natural waterbody alignment.
 - Ensure aggregate in waterbody does not interfere with fish passage or constrict the waterbody width.

6.2.3.5 CULVERT REPAIR

- All culvert repair works shall be conducted in an isolated area "in-the-dry" or during low flows.

6.3 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the culvert maintenance activities. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

7 LIKE-FOR-LIKE CULVERT REPLACEMENT

7.1 SCOPE

This MTO Best Management Practice (BMP) applies to the like-for-like replacement of a culvert in a waterbody identified as supporting fish and fish habitat.

Culvert replacements using this BMP shall be installed in accordance with the MTO Highway Drainage Design Standards with respect to culvert sizing, embedment with appropriate material, and safe fish passage as outlined in the Operational Constraints and Protection Measures.

This BMP for Like-for-Like Culvert Replacement may be used for the following:

- Replacement of an existing culvert with a new culvert of equal or lesser length.
- An increase or decrease in culvert width that does not negatively impact fish passage.
- The replacement of a perched or undersized culvert as long as the fish passage provided by the new culvert does not have a negative effect on fisheries management objectives or expand the range of aquatic invasive species.

This BMP for Like-for-Like Culvert Replacement may not be used for the following:

- In-water work/activities outside of the appropriate in-water work timing windows.
- Installation of culvert liners.
- Channel realignment.
- Additional fill (i.e., increased footprint) placed below the high water level.
- When federally listed aquatic species at risk are present.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits to proceed with the work.

7.2 ADDITIONAL REFERENCES

- [DFO Interim Code of Practice: End-of-Pipe Fish Protection Screens for Small Water Intakes in Freshwater](#)
- [MTO Highway Drainage Design Standards](#)
- [Great Lakes Fisheries Commission Sea Lamprey Control Map](#)

- [DFO Swim Performance Online Tools](#)

7.3 MAINTENANCE/CONSTRUCTION PROCEDURES

7.3.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Infilling floodplain fish habitat with temporary construction access ramps and/or permanent road approaches or abutments (some fish species such as pike rely on the floodplain during high flows for fish passage and/or spawning).
- Removal of riparian vegetation and cover along the banks or shoreline of a waterbody.
- Removal of edge habitat (e.g., undercut bank, shallower areas with lower velocity, aquatic vegetation).
- Creation of barriers to fish movement (e.g., perched crossings, velocity barriers, alteration of the natural stream gradient, restrictive causeways resulting in the loss of floodplain which is used by fish for passage during high flows).
- Introduction of sediments, concrete, and other deleterious substances (e.g., salt, paint, solvents, oil, and grease) into waterbodies.
- Operation of machinery may impact habitat on the waterbody banks and bed and result in erosion and sedimentation.
- Death of fish.

7.3.2 OPERATIONAL CONDITIONS

Like-for-like culvert replacement activities as outlined in the scope of this BMP that meet the following conditions and are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

7.3.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

7.3.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to

OPSS.PROV 182.

Dewatering and Temporary Flow Passage Systems

Dewatering and temporary flow passage systems shall be according to OPSS.PROV 517 and OPSS.PROV 182.

Placement of Aggregates in Waterbodies

The use of aggregate in waterbodies shall be according to OPSS.PROV 825 and OPSS.PROV 1005.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

7.3.3.2 GENERAL

- Like-for-like culvert replacement activities shall be scheduled to prevent disruption to sensitive fish life stages by adhering to appropriate in-water work timing windows.
- All in-water works shall be conducted in an isolated area "in-the-dry" while maintaining the current waterbody flows on the downstream end.
- The new culvert shall provide the appropriate gradient and waterbody bed elevation consistent with conditions in the natural channel in order to provide free flow of water through the culvert, maintain fish passage and mitigate channel erosion or down cutting during all flows.
- Sediment laden dewatering discharge shall be pumped into a vegetated area or settling basin to prevent sediment and other deleterious substances from entering any waterbody.

- Within the isolated area, accumulated sediment and excess material shall be removed and the waterbody bed shall be stabilized and restored to the original shape and bottom gradient with aggregates sized to match the upstream and downstream sections of the waterbody before removing the worksite isolation measures.
- The waterbody bed under the worksite isolation measures shall also be stabilized and restored as described above during the final removal of the worksite isolation measures.
- If perched culverts are encountered, review design considerations to ensure that culvert sizing, embedment, and scour protection in the new design meet ministry standards.

7.4 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the culvert replacement. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

8 DITCH MAINTENANCE WITHIN 30 METRES OF A WATERBODY

8.1 SCOPE

This Best Management Practice (BMP) applies to the maintenance of existing ditches within 30 metres of the high water level of a waterbody that supports fish and fish habitat, including ditches and seasonal waterbodies within the highway rights-of-way that support fish and fish habitat.

This BMP for ditch maintenance within 30 metres of waterbody BMP may be used for the following:

- Activities to restore the grades and positive drainage of ditches to the original highway design criteria, including:
 - Removal of accumulated sediment.
 - Removal of vegetation.
 - Repair of damaged ditch embankments and shoulders.
 - Cleaning of ditch outlet pipes.
 - Cleaning of entrance culverts that have deposited accumulated sediment into the ditch being maintained.

This Ditch Maintenance BMP may not be used for the following:

- When fish are present.
- In-water work/activities outside of the appropriate in-water work timing windows.
- When federally listed aquatic species at risk are present or significant fish habitat is present.
- Construction of a new ditch.
- Channel realignment.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

8.2 MAINTENANCE/CONSTRUCTION PROCEDURES

8.2.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Removal of habitat features from ditch, adjacent banks, and riparian zone (resulting in loss and/or reduction in diversity of habitat).
- Removal or disruption of migratory corridor (barrier to fish migration).
- Sedimentation of spawning, rearing and food production areas.
- Reduction in food supply (allochthonous or autochthonous inputs).
- Reduction or disruption of invertebrate production.
- Reduced water quality (increased turbidity, sedimentation, warming of water).
- Changes to flow regime (especially base flows).
- Drainage works may negatively impact adjacent wetlands by lowering the water table.
- Introduction of deleterious substances.
- Excessive loss of riparian vegetation.
- Disturbance to the banks and the bottoms of ditches from the use of heavy equipment.
- Decreased channel/bank stability to the receiving waterbody.

8.2.2 OPERATIONAL CONDITIONS

Ditching maintenance activities as outlined in the scope of this BMP that meet the following conditions and are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

8.2.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

8.2.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to

OPSS.PROV 182.

Dewatering and Temporary Flow Passage Systems

Dewatering and temporary flow passage systems shall be according to OPSS.PROV 517 and OPSS.PROV 182.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

8.2.3.2 GENERAL

- Ditch maintenance activities shall be scheduled to prevent disruption to sensitive fish life stages by adhering to appropriate in-water work timing windows.
- Ditch maintenance activities shall not be conducted within the receiving waterbody or within a wetland.
- Ensure erosion and protection measures are taken, as appropriate for the site.

8.3 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the ditch maintenance. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

9 RIPARIAN VEGETATION MAINTENANCE IN EXISTING RIGHT-OF-WAY

9.1 SCOPE

This MTO Best Management Practice (BMP) applies to the removal of riparian vegetation in the existing highway right-of-way corridor within 30 metres of the high water level of a waterbody identified as supporting fish and fish habitat.

This BMP for riparian vegetation maintenance in existing right-of-way may be used for the following:

- Mowing, brushing, topping and slashing of terrestrial vegetation.
- Alteration (e.g., topping and pruning) of select plants.
- Work that involves the maintenance of vegetation in an existing right-of-way for a transportation or utility corridor and not construction of a new right-of-way.
- Vegetative maintenance techniques that allow the root system to stay intact, to help bind the soil and encourage rapid colonization of low-growing plant species.

This BMP for riparian vegetation maintenance in existing right-of-way may not be used for the following:

- In-water work/activities outside of the appropriate in-water work timing windows.
- Removal of more than one third (1/3) of the total woody vegetation (i.e., trees and shrubs) in the right-of-way within 30 metres of the high water level in any given year.
- Complete clearing of riparian vegetation.
- Removal of riparian vegetation if the riparian area is identified as part of the critical habitat of a federally listed aquatic species at risk.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

9.2 MAINTENANCE/CONSTRUCTION PROCEDURES

9.2.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Excessive loss of riparian vegetation.
- Erosion and sedimentation.
- Disturbance to the banks and the waterbody bed from use of heavy equipment.
- Introduction of deleterious substances as a result of inadequate containment of spoil piles and improper maintenance of equipment.

9.2.2 OPERATIONAL CONDITIONS

Riparian Vegetation Maintenance as outlined in the scope of this BMP that meet the following conditions and are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

9.2.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

9.2.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to OPSS.PROV 182.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804, and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

9.2.3.2 GENERAL

- Generally, there are no restrictions on timing for maintenance of riparian vegetation within the existing right-of-way as this activity does not involve in-water work. However, if there are any activities with the potential to disrupt sensitive fish life stages (e.g., fording of watercourse by machinery), they shall adhere to appropriate in-water work timing windows.
- Combined maintenance activities (e.g., mowing, brushing, topping, slashing, etc.) will affect no more than one third (1/3) of the total woody vegetation, such as trees and shrubs, in the right-of-way within 30 metres of the high water level in any given year.
 - When practicable, alter riparian vegetation in the right-of-way by hand. If machinery must be used, operate machinery on land and in a manner that minimizes disturbance to the banks of the waterbody.
- When altering a tree that is located on the bank of a waterbody, ensure that the root structure and stability are maintained.
- Implement selective or phased vegetation removal or species management to maintain or reduce shade on waterbody and provide specialized riparian communities or habitats.

9.3 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the riparian vegetation maintenance. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

10 TEMPORARY WATERCOURSE CROSSING

10.1 SCOPE

This MTO Best Management Practice (BMP) applies to the placement of a temporary crossing over a watercourse that has been identified as supporting fish and fish habitat.

This temporary watercourse crossing BMP may be used for the following:

- A one-time ford (i.e., over and back) in flowing waters.
- A seasonally dry waterbody ford.
- A temporary bridge (e.g., Bailey bridge or log stringer bridge) or an ice bridge, no greater than one lane in width.

This temporary watercourse crossing BMP may not be used for the following:

- In-water work/activities (e.g., fording) outside of the appropriate in-water work timing windows.
- Fording if federally listed aquatic species at risk are present.
- Placing any part of a temporary bridge structure within the wetted portion of the waterbody.
- Realigning the waterbody.
- Dredging, infilling, grading or excavating the waterbody bed or waterbody bank.
- Fording occurring in areas that are known fish spawning sites.
- Installation of a temporary culvert.

Activities undertaken in relation to the project shall be in compliance with the federal *Species at Risk Act* and the provincial *Endangered Species Act*. It is up to the user of this BMP to obtain all necessary permits required to proceed with the work.

10.2 MAINTENANCE/CONSTRUCTION PROCEDURES

10.2.1 POTENTIAL IMPACTS TO FISH AND FISH HABITAT

- Direct harm to waterbody banks and beds (e.g., compaction and rutting).
- Physical or hydraulic barrier to fish movement under different flow regimes (e.g., interstitial or laminar flow under low flow conditions).

- Sediment deposition into fish habitat from construction, operation, decommissioning or from road drainage.
- Removal of vegetation and cover along the stream bank which provides riparian habitat and bank stability.
- Removal of edge habitat (e.g., undercut bank, shallower areas with lower velocity).
- Alteration of channel morphology causing upstream and downstream channel sediment aggradation/erosion/down cutting.
- Deposit of deleterious substances from vehicle.
- Debris used in construction of ice bridges or other temporary crossings may impact fish passage and channel stability.
- Disruption to sensitive fish life stages.

10.2.2 OPERATIONAL CONDITIONS

Temporary watercourse crossing activities within the description provided in the scope of this BMP that meet the following conditions and are carried out in accordance with all of the following operational constraints, protection measures, and submission requirements are considered to be in compliance with the *Fisheries Act* and the MTO Fisheries Protocol. As such these works may proceed without further review.

This BMP can only be used if all applicable listed operational constraints and protection measures can be followed. If the BMP cannot be used, proceed to Step 4 of the MTO Fisheries Protocol.

10.2.3 OPERATIONAL CONSTRAINTS AND PROTECTION MEASURES

10.2.3.1 PROVINCIAL STANDARDS

Fish Protection

Fish protection including in-water work timing windows shall be conducted according to OPSS.PROV 182.

Equipment Use

Use of equipment shall be according to OPSS.PROV 182.

Preservation of Riparian Vegetation

Removal of riparian vegetation shall be according to OPSS.PROV 182.

Erosion and Sediment Control

The installation, monitoring, maintenance, and removal of temporary erosion and sediment control measures shall be according to OPSS.PROV 182, OPSS.PROV 804,

and OPSS.PROV 805.

Restoration of Disturbed Areas

Vegetation protection and rehabilitation shall be according to OPSS.PROV 182 and OPSS.PROV 803.

Management of Excess Materials

All excess material shall be managed according to OPSS.PROV 180.

10.2.3.2 GENERAL

- Generally, there are no restrictions on timing for the construction of temporary bridge structures or fording seasonally dry waterbody beds, as they do not involve in-water work. However, if there are any activities with the potential to disrupt sensitive fish life stages (e.g., fording of the watercourse by machinery) these shall adhere to appropriate in-water work timing windows.
- Locate crossings at straight sections of the watercourse, perpendicular to the watercourse bank. Avoid crossing on meander bends, braided streams, alluvial fans, or any other area that is inherently unstable and may result in the erosion and scouring of the waterbody beds.
- Machinery fording a flowing watercourse to bring equipment required for construction to the opposite side shall be limited to a one-time event (over and back) and is to occur only if an existing crossing at another location is not available or practical to use.
 - If minor rutting is likely to occur, waterbody bed protection methods (e.g., swamp mats, pads) shall be used, provided they do not constrict flows or block fish passage.
 - Grading of the waterbody banks for the approaches is not permitted.
 - If the waterbody bed and waterbody banks are steep and highly erodible (e.g., dominated by organic materials and silts) and erosion and degradation are likely to occur as a result of equipment fording, then a temporary bridge shall be used in order to protect these areas.
 - Fording shall occur under low flow conditions, and not when flows are elevated due to local rain events or seasonal flooding.
 - Ensure to stabilize all areas after crossing.

10.3 SUBMISSION REQUIREMENTS

An MTO Project Notification Form shall be completed prior to the commencement of work, indicating that the BMP will be followed during the building of a temporary watercourse crossing. It shall be signed by the appropriate individual then submitted to and retained by MTO Environmental Delivery, or, for forms completed by Maintenance Service Providers, by the Regional Operations Office.

An electronic version of MTO Project Notification Form is available on the [MTO Technical Documents](#) website.

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11 AGENCY AND CONTACT INFORMATION

FISHERIES AND OCEANS CANADA, CENTRAL AND ARTIC REGION		
CONTACT	ADDRESS	TELEPHONE
All Ontario	Fisheries Protection Program Fisheries and Oceans Canada 867 Lakeshore Road Burlington, ON L7S 1A1 Email: DFO.OPHabitat.MPO@dfo-mpo.gc.ca	Tel: 1-855-852-8320

MINISTRY OF TRANSPORTATION	
CONTACT	ADDRESS
Environmental Policy Office – Head Office	Garden City Tower 301 St. Paul Street, 2nd Floor St. Catharines, ON L2R 7R4 Email: enviromgmtMTO@ontario.ca

MINISTRY OF NATURAL RESOURCES
CONTACT INFORMATION AND LOCATIONS FOR MAIN AND WORK CENTRES
Online: https://www.ontario.ca/page/ministry-natural-resources-work-centres

12 GLOSSARY

Term	Definition
Active Floodplain	Means an area adjacent to a waterbody that is periodically flooded. It may include lands at the same elevation as areas with evidence of moving water, such as active or inactive flood channels, recent fluvial soils, and sediment on the ground surface or in tree bark, rafted debris, and tree scarring.
Aquatic Invasive Species	Means aquatic organisms that, upon introduction to areas or waters where they do not originate naturally, could have harmful effects on fish or fish habitat in Canada or the use of fish by Canadians.
Aquatic Species at Risk	Means a fish and/or a freshwater mussel provincially or federally listed as extirpated, endangered, threatened species or species of special concern. For the purpose of this guide, species of special concern are not afforded protection under SARA.
Aquatic Vegetation	Means a plant that grows partly or wholly in water whether rooted in the waterbody bed, floating without anchorage, or rooted along a waterbody bank.
Concrete	Means concrete mixtures produced with Portland cement and may include blended hydraulic cement, supplementary cement materials, spent debris and silica sand abrasive blasting media from abrasive cleaning of concrete and reinforcing steel, and concrete brick and block and associated mortar. It may include embedded steel and excludes asbestos modified Portland cement concrete mixtures.
Concrete Erosion	Means the deterioration of concrete caused by mechanical abrasion by water-borne ice or sand and gravel particles scrubbing against concrete surfaces.
Cracking	Means a linear fracture in concrete that extends partly or completely through the member.
Critical Habitat (SARA)	Means, as defined by the <i>Species at Risk Act</i> , as the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' critical habitat in the recovery strategy or in an action plan for the species.

Term	Definition
Culvert	Means a conduit, usually covered by fill, whose primary function is to convey surface water through an embankment.
Debris	Means branches, stumps, logs, boulders, ice build-up, garbage, or any other organic or inorganic materials that prevent the passage of water and/or fish, or that damage or impair the proper functioning of infrastructure.
Delamination	Means a discontinuity of the surface concrete which is substantially separated but not completely detached from concrete below or above it.
Deleterious Substance	Means, as defined by the <i>Fisheries Act</i> , any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the se by man of fish that frequent that water. Note that sediment is considered a deleterious substance.
Dewatering System	Means the components required to remove groundwater and/or carry out unwatering from within an excavation or work area to permit construction work to proceed under specified conditions, and may include a groundwater control system, impermeable barriers, pumps, and/or equipment.
Disintegration	Means the physical deterioration or breaking down of concrete into small fragments or particles.
Ditch	Means part of the highway drainage system that generally conveys water for short periods of time following precipitation or snowmelt and typically outlet to a waterbody that may support fish and fish habitat.
Duty to Consult	<p>Refers to the Crown's constitutional obligation to consult an Indigenous community when it has knowledge of an established or credibly asserted Aboriginal or treaty right and contemplates conduct that may adversely affect that right.</p> <p>Aboriginal rights are practices, customs or traditions integral to the distinctive culture of the Indigenous community (e.g., rights to hunt, fish, trap, gather).</p> <p>Treaty rights are specific rights of Indigenous peoples set out in the treaties they entered into with Crown governments.</p>
Emergency	Means an accident, natural disaster, catastrophic structural

Term	Definition
Situation	failure, spill, or other incident that has occurred, or may imminently occur, and which poses an imminent risk to life, public health or safety, the environment, damage, or loss of property.
Emergency Work (MTO)	Means an emergency repair of a highway facility undertaken immediately after an accident, natural disaster (including beaver dam failure), catastrophic structural failure, or on detection of an imminent failure, including containment, cleanup, and disposal of cleanup material; or a project that is required to address a situation where there is an imminent risk to life, public health or safety, the environment, damage or loss of property.
Endangered Species Act (ESA)	Means provincial legislation enacted to protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.
Entrainment	Means when a fish is drawn into a water intake and cannot escape.
Erosion	Means the process by which the natural (earth) or unnatural (embankment, slope protection, structure, etc.) land surface is naturally worn away by the actions of water, wind, ice, or other geologic agents.
Fish	Means, as defined by the <i>Fisheries Act</i> , parts of fish, shellfish, crustaceans, marine animals and any parts of shellfish, crustaceans or marine animals, and the eggs, sperm, spawn, larvae, spat and juvenile stages of fish, shellfish, crustaceans, and marine animals.
Fish Habitat	Means, as defined by the <i>Fisheries Act</i> , water frequented by fish and any other areas on which fish depend directly or indirectly to carry out their life processes, including spawning grounds and nursery, rearing, food supply and migration areas.
Fording	Means crossing the stream on foot or in a vehicle, without a bridge or boat.
Harmful Alteration, Disruption, or Destruction of Fish Habitat (HADD)	Means, as interpreted by DFO in the <i>Fish and Fish Habitat Protection Policy</i> , any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes of fish.

Term	Definition
High Water Level	Means the elevation of the top of the bank of the channel. In watercourses this refers to the “bank-full channel” which is often the 2-year flood flow return level. In inland lakes and wetlands, it refers to those parts of the waterbody bed and banks that are frequently flooded by water that leaves a mark on the adjacent land and where the natural vegetation changes from predominately aquatic vegetation to terrestrial vegetation.
In-Water Work	Means any work, activity or undertaking occurring at or below the high-water level that may impact the waterbody bed or flow in the waterbody.
In-Water Work Timing Windows	Means a restriction to in-water work related to an activity during certain periods in order to protect fish from impacts of works or undertakings in and around water during spawning migrations and other critical life stages. They are established by the Ontario Ministry of Natural Resources.
Maintenance	Means the activities required to keep the roadway in a safe, passable condition and prolong the life of the infrastructure.
Meander Bend	Means a loop-like bend in a sinuous stream channel. Meander bends typically occur where watercourses erode a section of its bank from water velocities or flows.
Mitigation	Means, as defined by DFO’s <i>Fish and Fish Habitat Protection Policy</i> , measures to reduce the spatial scale, duration, or intensity of harmful impacts to fish and fish habitat when such impacts cannot be avoided.
Perched Culvert	Means a culvert structure which has an outlet with invert elevation at or above the elevation of the waterbody bed.
Realigning (waterbody)	Means the construction of a new watercourse or a new alignment which may include the clearing, widening, and/or deepening of the existing watercourse.
Right-of-Way	Means the strip of land within the limits of which a roadway is built and is usually indicated by a fence line or bush line.
Riparian Vegetation Areas	Means trees, shrubs and other vegetation on waterbody bank from the high water level upland for 30 metres.
Scaling	Means the local flaking or loss of the surface portion of concrete or mortar as a result of the freeze-thaw deterioration

Term	Definition
	of concrete.
Sediment	Means soils or other surface material transported by wind or water as a result of erosion. Sediment is considered a deleterious substance.
Service Provider (MTO)	Means consultants, contract administrators, and contractors hired by MTO to assist in the planning, design, construction, operations, and maintenance of provincial transportation projects.
Spalling	Means the detachment of a fragment from a larger concrete mass.
Significant Fish Habitat	<p>Means fish habitat that meets one or more of the following criteria:</p> <ul style="list-style-type: none"> • Rare or uncommonly found habitat that may (but may not) be one of the limiting factors to the fish population. • Specialized habitat that fish populations are highly dependent on to support critical life functions. • Areas contributing to fisheries productivity that are exceptionally productive, likely to be limiting, and are rare or relatively uncommon.
Species at Risk Act (SARA)	Means federal legislation enacted to prevent Canadian indigenous species, subspecies, and distinct populations from becoming extirpated or extinct, to provide for the recovery of endangered or threatened species and encourage the management of other species to prevent them from becoming at risk.
Temporary Flow Passage System	<p>Means the temporary flow control devices, channels, pipes, pumps and operation plans used to manage sustained flow and flow resulting from precipitation events in order to separate and/or isolate a work area within an existing waterbody to permit work as specified in the Contract Documents.</p> <p>A temporary flow passage system may include temporary drainage facilities (e.g., channels, pipes, culverts and bridges) constructed as a temporary alignment of a natural watercourse.</p>
Waterbody	Means any permanent or intermittent, natural, or constructed body of water including lakes, ponds, wetlands, and

Term	Definition
	watercourses, but does not include stormwater management ponds.
Waterbody Bank	Means the area of slope adjacent to a waterbody, from the high water level to the top of slope.
Waterbody Bed	Means the bottom and sides of the waterbody over which the water flows, up to the high water level.
Watercourse	Means a stream, creek, river, or channel, including ditches, in which the flow of water is permanent, intermittent, or ephemeral.
Watercrossing (MTO)	Means a culvert or bridge structure used on a roadway to cross a waterbody.
Wetlands	Means lands that are seasonally or permanently covered by shallow water, as well as lands where the water table is close to or at the earth's surface.

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