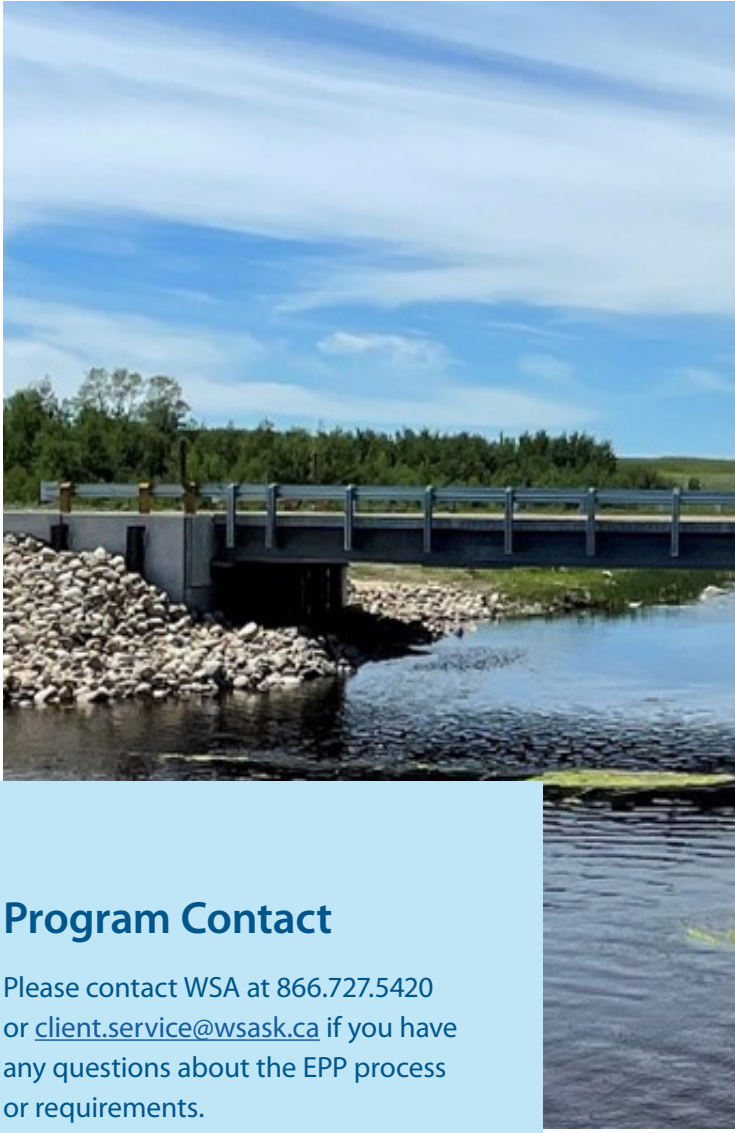
Bridge Maintenance, Repair and Replacement Environmental Protection Plan



1.0 Purpose

This accepted environmental protection plan (EPP) outlines the project scope and conditions to follow when undertaking bridge maintenance, repair and replacement activities. By following the EPP, impacts to a watercourse or water body can be minimized.

An EPP is a regulatory tool implemented by the Province of Saskatchewan that waives the need for a standard permit to perform low-risk activities in or near water, reducing administrative delays for clients. All conditions under section 3.0 must be met by clients qualifying for this EPP and any others working on their behalf (i.e., contractors).

This EPP does not replace or supersede any approval, licences or authorizations, including building permits that may be required under municipal, provincial or federal legislation. The client is responsible for adherence to all such approvals, licences or authorizations that may be required.

Program Contact

Please contact WSA at 866.727.5420 or client.service@wsask.ca if you have any questions about the EPP process or requirements.

The client and anyone working for or on behalf of the client are solely responsible for all design, safety and workmanship aspects of all works associated with this EPP. The Water Security Agency (WSA) may order the client to cease any or all work regarding this project if WSA finds the conditions are not being met, or the work is causing or may cause adverse environmental effects.

If the bridge project involves one or more ineligible activities, prior to commencing work, please contact WSA to discuss the proposal or submit an Aquatic Habitat Protection Permit application for review. Please contact WSA if you need help determining if your project is eligible for this EPP.

2.0 Eligibility

2.1 This EPP applies to bridge replacement, repairs and maintenance work of existing bridges that involve one or more of the following activities:

a. addition of new, replacement or repairs of existing in-stream piers/pilings or their components (e.g., scour planks, timber pier caps, sheathing planks, sway-bracing, stub pile installations and replacing pile ties behind the abutments);
b. pile repairs involving the use of epoxy resin or glass resin;
c. replacing or repairing abutments/wing walls or their components (e.g., knee bracing, backing planks, cleats and anchor rods or deadmen, sheet piles);
d. removing and replacing bridge deck surfacing material (i.e., pavement, gravel and clay, concrete, etc.);
e. replacing or repairing the bridge deck;
f. replacing or repairing timber floors or damaged planks;
g. adding new stringers;
h. installing granular filter blankets and clean rock riprap along the spill-through slopes in front or adjacent to bridge abutments; and bank re-sloping work to stabilize the embankment as per bridge construction design;
i. constructing a temporary work pad that does not result in infilling within the wetted part of the channel at the time of construction;
j. installing a temporary clear span detour bridge; or
k. any activity listed above that may require site isolation (e.g., non-erodible coffer dams, sediment barriers, etc.) less than one-third of a channel width or dewatering.

2.2 This EPP does not apply to bridge maintenance, repair and replacement activities that involve:

a. constructing or installing coffer dams that restrict more than one-third of the channel width and the use of earthen materials to construct coffer dams;
b. watercourse channel realignment;
c. infilling a watercourse channel to construct temporary traffic detours;
d. installing culverts to create a temporary traffic detour;
e. permanent bridge removal that includes site remediation; or
f. constructing a new bridge at a new location.

Before beginning any work under this EPP, you must confirm you meet the eligibility requirements above and the conditions below by completing and submitting an EPP notification form to WSA. Pre-construction photos of the worksite must be submitted by email with the notification form. The total size of the email must not exceed 25 MB. Clients are advised that this EPP is only for Aquatic Habitat Protection and that other approvals from WSA might be required. If no other approvals or permits are required, clients can proceed with the work immediately after they submit a duly completed notification form with photos. An environment officer may attend the work site at any time to inspect to ensure that the EPP is being complied with.

Species at Risk: Self-screening using the Saskatchewan Conservation Data Centre's online platform, HABISask, should be performed before construction work starts to confirm there are no species at risk listed at the project location. Contact WSA at 866.727.5420 for guidance if self-screening cannot be performed or if a threatened or endangered species is identified in HABISask or at your worksite.

3.0 Conditions

3.1 General

3.1.1 An EPP notification form must be completed and submitted to WSA before starting any work associated with this EPP.

3.1.2 All contractors must be provided a copy of this EPP prior to conducting any work and the EPP (paper or electronic copy) must be available on-site during construction.

3.1.3 This EPP expires two years following the date of notification by the client. Re application is required if work is not complete or further work is planned.

3.2 Bridge Work

3.2.1 Piles/piers must be:

a. removed completely or cut off at or below the existing streambed elevation.
b. installed by working from the bank, ice surface, existing bridge deck, or temporary work pads that do not result in infilling within the wetted part of the channel.

3.2.2 If a temporary traffic detour is required, the temporary bridge must completely span the watercourse channel (i.e., watercourse banks will not be excavated and no infilling below the bank will occur to accommodate detour installation). under any circumstances except for the use of necessary attached booms, buckets, other tools or implements; and

3.3 Solid Waste and Construction Debris Management

3.3.1 Any project debris entering the water or that falls onto the ice must be removed as soon as practical and disposed of in approved sites.

3.3.2 All refuse bridge components and temporary structures, such as temporary work pads and project debris, must be removed from the site and disposed of in approved locations.

3.4 Heavy Equipment Use, Harmful Substances and Cast-in-Place Concrete Management

3.4.1 Heavy equipment must:

a. arrive at the site clean and free of fluid leaks;
b. be cleaned, fuelled and serviced in a manner that will not contaminate the bed, bank or boundary of the watercourse or water body;
c. not enter the water under any circumstances except for the use of necessary attached booms, buckets, other tools or implements; and,
d. be located and operated from a stable location or the existing bridge deck. During frozen conditions, working from the ice is permitted, but machinery and heavy equipment must be removed from the ice surface at the end of each workday.

3.4.2 To prevent harmful substances from entering the watercourse or water body:

a. fuel, oil, grease, paint, epoxy resin, solvents etc. must be stored where they cannot contaminate any watercourse or water body;
b. all stationary and portable fuel tanks, pumps and engines within 100 metres of a water body or watercourse must have secondary containment (e.g., a water pump and its fuel supply will be placed in a container capable of holding 110 per cent of the total volume of fuel and oils);
c. appropriately sized spill basins and functional spill kits for clean-ups must be on site and accessible;
d. no deposition or leaching of asphalt, paint, epoxy resin or other toxic substances into the watercourse or water body must occur. and,
e. all cast-in-place concrete, grout and concrete wash water must be completely contained to prevent it from entering the water.

3.5 Erosion Prevention and Site Rehabilitation

3.5.1 Riparian or aquatic vegetation within the immediate work area will only be removed if necessary. Outside of the immediate work area, the vegetation should not be disturbed.

3.5.2 Stockpiles and excavated materials must be stabilized above the bank so they will not erode into the water body or watercourse.

3.5.3 All disturbed soils from construction activities, including slopes adjacent to the water body or watercourse, must be stabilized with temporary erosion and sediment control measures tailored to site conditions to prevent sediment-laden runoff from entering the watercourse/ water body (see section 4.5 below for guidance). These temporary measures must be monitored, maintained, replaced or upgraded as necessary before, during and after the project implementation.

3.5.4 For all exposed or disturbed soil, site remediation must be performed with permanent erosion and sediment control measures tailored to site conditions. These measures must be monitored and upgraded until all remediated sites are fully stabilized.

3.5.5 Where rock rip rap is needed, it must:

a. be obtained from outside the bed, bank or boundary of any watercourse or water body except for materials that need to be relocated as part of the project;
b. be clean and free from fine sediment or other contaminants;
c. be appropriately sized to withstand the forces of current, wave and/or ice action;
d. follow the natural contour of the shoreline and placed on a stable slope (i.e., 2H:1V or flatter), and
e. not consist of concrete rubble material or other debris.

3.6 Temporary Site Isolation and De-watering

3.6.1 Where required, temporary isolation dams must:

a. be constructed of non-erodible materials (e.g., sandbags, bulk bags, aquadams, sheet piles, clean rip rap). Earthen cofferdams are not permitted; and,
b. not restrict more than one-third of the channel width so downstream water flow is maintained for the duration of the project.

3.6.2 Where dewatering is required:

a. water must be released into a well-vegetated area or settling basin to prevent sediment from being discharged into the watercourse; and
b. water discharge from pumps must not cause soil erosion.

3.6.3 Where required, sediment barriers (i.e., floating or staked) must be:

a. installed parallel to the bank and not perpendicular to flowing water;
b. appropriate to site conditions including expected depth, wind and wave action; and
c. regularly inspected and maintained or repaired to prevent the escape of suspended sediment.

4.0 Additional Information

Construction activities in or near water can negatively impact water quality, aquatic habitat and the species that rely on the habitat. Following are environmental protection best management practices associated with bridge work that clients should consider implementing before, during and after project completion to prevent or minimize impacts on the aquatic environment.

4.1 In-Water Project Scheduling and Timing

To assist clients in meeting conditions 3.2.1 and 3.2.2, bridge maintenance, repair and replacement activities performed within a watercourse channel should be timed to occur during dry or frozen conditions or when water levels and flows are at their lowest. In Saskatchewan, this usually coincides with late summer, fall and winter. It is easier to manage water in and around a worksite when work is done under dry, frozen or low water conditions. Where in-water work will be conducted within fish-bearing waters, proponents should plan to start and complete the work outside fish spawning and incubation periods outlined in the *Saskatchewan Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat* (https://www.dfo-mpo.gc.ca/pnw-ppe/timing-periodes/sk-eng.html).

Saskatchewan Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat

4.2 Bridge Shrouding

To assist clients in meeting condition 3.3.1, barges or shrouding should be used to trap and prevent sandblasting abrasives, protective coatings, rust, grease, cement and other bridge construction debris and materials from entering a watercourse or water body.

4.3 Preventing and Reporting Discharges and Spread of Harmful Substances

Despite implementing conditions 3.4.1 and 3.4.2, which should help prevent harmful or hazardous substances from being discharged or spread to the environment, accidental releases or discharges can happen on a worksite. If it does happen, the proponent should immediately report it by calling the provincial toll-free spill line, 24 hours a day, 7 days a week at 1.800.667.7525. For more information on how to prevent hazardous substance discharges on a worksite, WSA's website can be consulted for this matter: wsask.ca/machinery-operation-hazardous-substances-and-spill-containment/.

Machinery Operation, Hazardous Substances and Spill Containment

4.4 Choosing and Installing Temporary Erosion and Sediment Control Measures

Bridge repair, maintenance and replacement activities may cause soil disturbance, resulting in erosion of the soil and sedimentation when disturbed site areas are not appropriately stabilized before, during and after construction. Knowing how to choose, install and inspect proper temporary erosion and sediment control (ESC) measures will help proponents meet condition 3.5.3 as temporary ESC measures should be tailored to site topography, soil type and hydrology aspects associated with local runoff. Information on temporary ESC principles and recommended materials can be found on WSA's website: wsask.ca/erosion-and-sediment-control-suppliers-installers-and-designers.

Erosion and Sediment Control

4.5 In-Water Work, Turbidity Control and Temporary Site Isolation

For low-risk activities requiring in-water work, the EPP conditions laid out under section 3.6 are tailored to prevent turbidity increase in the water column and potential contamination from using heavy equipment directly in the water. For additional information and construction best management practices on how to temporarily isolate and dewater a work site, consult WSA's website wsask.ca/proper-measures-for-site-isolation/.

Site Isolation, Maintaining Downstream Flow, Dewatering

4.6 Remediation of Disturbed Sites

It is essential for clients to adhere to condition 3.5.4 related to site remediation to ensure disturbed areas are permanently stabilized to prevent erosion. Remediation of these areas can be achieved through revegetation using seed materials, along with installing temporary ESC measures. These measures help prevent seed dispersion by wind or water runoff and improve germination. WSA's website provides general guidelines to assist remediation work: wsask.ca/revegetating-disturbed-lands. Alternatively, proponents can opt for hard armour solutions, such as concrete or aggregate elements like rock rip rap, gabions, or articulated concrete blocks. Often a combination of vegetation and hard armour is necessary to ensure long-term stabilization of a site.

Revegetating Disturbed Lands

4.7 Species at Risk

Human developments and activities can negatively impact species at risk. Taking steps to avoid impacts or altering your activities can help protect these species and the habitats they rely on. HABISask is a self-screening tool that can be used to determine the presence of a species at risk at specific locations in Saskatchewan. The tool displays occurrences for species listed as Threatened or Endangered under the federal *Species at Risk Act* and those for which *Saskatchewan Activity Guidelines for Sensitive Species* have been developed.

One threatened species particularly sensitive to bridge maintenance, repair and replacement activities is the barn swallow (*Hirundo rustica*), which often nests on bridge structures. They typically breed and use their nest sites between the beginning of May and the end of August.

This is the sensitive period during which the risk of harming the birds is especially high. The absence of birds in August is a good indicator that the breeding season is over. It is recommended that no work occurs within 150 m of a breeding bird or active nest site between May 1 and August 31 to minimize impacts to this species.

Saskatchewan Activity Restriction Guidelines for Sensitive Species

5.0 Duty to Consult Assessment

Projects that meet the parameters outlined in this document have been assessed under the Government of Saskatchewan *First Nation and Métis Consultation Policy Framework, 2023*. Based on this assessment, these projects do not trigger the Duty to Consult under the provincial policy.

Contact Us

☎ **866.727.5420**

✉ **client.service@wsask.ca**