Irrigation Intake and Pump Station Environmental Protection Plan

1.0 Purpose

This accepted environmental protection plan (EPP) outlines the required project scope and conditions to follow when undertaking irrigation intake and pump station construction activities for agricultural producers, campgrounds, golf courses and domestic use purposes. 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.

Figure 1 – Seasonal Irrigation Pump Station Mounted on Wheeled Carts within Lake Diefenbaker bed, bank and boundary.

If the irrigation intake or pump station project involves one or more ineligible activities, please contact WSA to discuss the proposal or submit an Aquatic Habitat Protection Permit application for review prior to commencing work. 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 irrigation intake and pump station projects that involve one or more of the following eligible activities:

a. replacing or constructing a cast-in-place or pre-cast concrete pump station platform formed above the bank (refer to Figure 1 to locate the pump platform above the bank);
b. trenching and burying a water line within the bed, bank and boundary under dry or frozen conditions;
c. installing electric and other utility within the bed, bank or boundary;
d. shoreline re-sloping and stabilization (i.e., rock rip rap) under dry or frozen conditions or in water not deeper than 30 centimetres (12 inches) for the installation of intake lines or pump station;
e. constructing a permanent intake structure within the boundary with the placement of water lines above ground;
f. vegetation removal to facilitate irrigation intake or pump station installation work;
g. horizontal directional drilling work for intake installation into open water;
h. installing new temporary/seasonal intake components such as:
    i. floating intake, river screens, or water line system installation above ground with or without anchor points;
    ii. installing a floating walkway system as an intake access ramp;
    iii. installing seasonal water lines, pumps, submersible pumps (i.e., on wheeled carts, skids, etc.) and utilities installed above ground.

2.2 The following irrigation intake and pump station activities are not eligible under this EPP:

a. replacing or constructing a vertical turbine system featuring a horizontal inlet (i.e., wet well);
b. constructing a permanent intake structure within the bank or boundary with water lines trenched in and buried within the bed and bank when a coffer dam or in-water isolation measures are required;
c. constructing a holding pond in a watercourse or water body;
d. seasonal intake dredging maintenance work using hydro-excavation equipment; backhoe, track hoe/long-reach excavator, or any other type of heavy machinery;
e. new channel dredging work.

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 Pump Station Bank Sloping and Temporary Site Isolation

3.2.1 Where bank sloping or excavation is required, the worksite must be adequately isolated by installing a turbidity curtain (floating or staked), sediment fence or similar before work starts to prevent sediment from migrating off the worksite (see section 4.4 for guidance). Sediment control measures must remain in place until the site is permanently stabilized (i.e., re vegetated or armoured) and 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.

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.

3.3.2 All refuse pump station components and temporary structures, such as temporary work pads and project debris, must be removed from the site.

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

3.4.1 Equipment or heavy machinery must arrive at the site clean and free of fluid leaks;

a. be cleaned, fuelled and serviced in a manner that will not contaminate the bed, bank or boundary of the watercourse or water body;
b. not enter the water under any circumstances except for the use of necessary attached booms, buckets, other tools or implements; and,
c. be located and operated from a stable location. 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.

3.4.3 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. paint or other toxic substances may not be poured into the watercourse or water body; 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 must only be removed if necessary. Outside of the immediate work area, the vegetation must 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 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 upon project completion. These measures must be monitored and upgraded until all remediated sites are fully stabilized (see section 4.7 for guidance).

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;
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 contour of the shoreline and be placed on a stable slope (i.e., 2H:1V or flatter), and
e. not consist of concrete rubble material or other debris.

3.6 Directional Drilling

3.6.1 If drilling mud is used as a lubricant, it must be switched to fresh water before breaching the lakebed.

3.6.2 Drilling must be monitored for signs of surface migration (frac-out) of drilling mud during all construction phases. In case of a frac-out, measures must be taken to stop work, contain the drilling mud and prevent further migration into the water.

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 irrigation pump station work that clients must consider implementing before, during and after project completion to prevent or minimize impacts on the aquatic environment.

4.1 Structure Construction within Flood Prone Areas is at the Client's Own Risk

Clients are advised that any work placed within flood-prone areas or unstable soil structures is at their own risk. To assist clients in finding flood zones on the landscape, an estimated peak water level (EPWL) model can be provided upon request by contacting WSA's Hydrology Services at hydrology@wsask.ca. WSA does not compute models for land elevation benchmarks.

It is also recommended that prior to designing and building a permanent pump station under this EPP, clients proceed with a soil structure investigation with a certified Professional Geologist (P.Geo.) or Geotechnical Engineer (P.Eng.) to determine slope stability and the most favourable and sustainable conditions for construction.

4.2 Water Line and Floating Water Intake Installation

Floating water intakes, river screens and walkway systems may be secured by installing steel cables, nylon ropes or similar material attached to fixed anchors on the shoreline. Anchor points may consist of rock material, cast-in-place piles or steel rods, but not natural vegetation such as trees or shrubs. These anchor points do not need to be removed every year unless decommissioning or floating intake replacement is required.

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 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/recreation-environment/aquatic-habitat-protection/machinery-operation-hazardous-substances-and-spill-containment/

Machinery Operation, Hazardous Substances and Spill Containment

4.4 Shoreline Sloping, Turbidity Control and Temporary Site Isolation

For low-risk activities requiring shoreline sloping, the EPP conditions laid out under section 3.2 are tailored to prevent an increase in turbidity in the water and potential contamination from using heavy machinery around water. For additional information and construction best management practices on how to temporarily isolate, consult WSA's website wsask.ca/recreation-environment/aquatic-habitat-protection/site-isolation-maintaining-downstream-flow-and-dewatering/.

Site Isolation, Maintaining Downstream Flow, Dewatering

4.5 Choosing and Installing Temporary Erosion and Sediment Control Measures

Irrigation intake and pump station activities such as trenching and burying water pipes or utility lines 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/recreation-environment/aquatic-habitat-protection/erosion-and-sediment-control/.

Erosion and Sediment Control

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: https://wsask.ca/recreation-environment/aquatic-habitat-protection/revegetating-disturbed-lands/.

Alternatively, proponents may 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 End-of-Water Pipe Screen Requirement

WSA recommends that clients consult and abide by the federal code of practice for end-of-pipe fish screens to protect fish and fish habitats from the operation of water intake or pump stations. A copy of the code is available at: dfo-mpo.gc.ca pnw-ppe/codes/screen-ecran-eng.html.

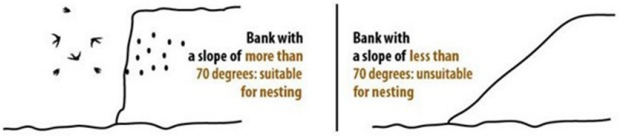
End-of-pipe fish protection screens for small water intakes in freshwater

4.8 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 species particularly sensitive to shoreline stabilization activities associated with irrigation pump station work is the Bank Swallow (*Riparia riparia*). Bank swallows generally dig their burrows in near-vertical banks (slopes of at least 70 degrees) that are more than 2 m high. Bank swallows typically use their nesting sites from mid-April to late August. This is the sensitive period during which the risk of harming the birds is especially high. The absence of the birds in August is a good indicator that the breeding season is over. Construction on vertical banks during nesting season should be avoided to minimize impact on Bank Swallow.

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**