

The following changes to the tender documents are effective immediately and will form part of the contract documents:

1. Contractor will be required to re-mobilize all forces necessary to complete the work outlined in the contract documents in spring/summer 2020. Water levels at the project location will dictate when the contractor can safely re-mobilize to complete the remainder of the work necessary to fulfill the contract requirements.

2. Environmental Effects Evaluation

Delete in its entirety.

Replace with the attached finalized Environmental Effects Evaluation (63 pages).

Note: The changes that are incorporated are as follows: Appendix B - Regulatory Correspondence.

3. Site Visit Attendees:

Don Sikora Contracting
Gardon Construction
J5 Construction
J.P. Excavators
Redi Form Construction
Vector Construction
Western Construction Services
Winnipeg Environmental Remediations Inc.

END OF ADDENDUM NO. 1



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REPORT

Public Services and Procurement Canada

St. Andrews Lock and Dam Environmental Effects Evaluation West Quay Wall Rehabilitation Project No. R.097506.001



AUGUST 2019

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1 INTRODUCTION

The St. Andrews Lock & Dam (SALD) facility, located in Lockport, Manitoba, was constructed in the early 20th century to facilitate commercial navigation from Lake Winnipeg to the City of Winnipeg by drowning the Lister Rapids during the navigational season. The facility is operated and maintained by Public Services and Procurement Canada (PSPC) and consists of a dam, a navigation lock, a fish ladder, and a two-lane traffic bridge. The facility is recognized as a National Historic Site by the Historic Sites and Monuments Board of Canada, as well as the Manitoba Historical Society.

An investigation and assessment of the existing retaining walls conducted by Associated Engineering¹ identified three retaining walls that require repair and modification (**Appendix A** – Project Plan G01). The following provides a brief description of the problems with the retaining walls:

Wall A – is a section of the west channel wall located downstream from the lock. The wall is cracked/bulged at one location, which indicates potential rotational movement and instability of the wall. Previous repairs to the wall and the deck behind it were completed in 1985 and six vertical ground anchors were installed in 2005. Based on historical data, Wall A and its deck are completely submerged during spring and/or summer every two to three years.

Wall B – is a short retaining wall oriented perpendicular to and located at the south end of Wall A. The wall is cracked at one location, which indicates potential settlement and/or rotational movement and instability of the wall. Repairs to Wall B were also completed in 1985 in conjunction with the repairs to Wall A.

Wall C – is a section of grouted rip-rap slope that runs parallel to Wall A and is located at the base of the roadway embankment slope. The grout receives regular repointing as part of ongoing maintenance of the structure and grounds.

2 PROJECT DESCRIPTION

2.1 Physical Structure

The Project is comprised of a repair and modification program of two retaining walls (Walls A and B) and an armored slope (Wall C) at the SALD (**Appendix A** – Project Plan G01). It requires localized excavation to expose, demolish and repair the retaining walls and install drainage improvement and anchors. **Site Preparation** activities (for all three walls) will include the following:

1. Staking (marking) the Project Site;
2. Installation of a perimeter fencing around the site;
3. Selection and marking Project laydown area and contractor parking;
4. Placement of plywood mats on top of grassed areas;
5. Silt fencing will be installed where required;
6. Muster point will be established;
7. If required, a site office location will be selected by the contractor in consultation with a Departmental Representative;

¹ Associated Engineering, 2019. Public Services and Procurement Canada - St. Andrews Lock and Dam Retaining Wall Repairs & Modifications West Side Quay Wall Rehabilitation – 50% Design Package. Winnipeg, MB.

8. Unknown weather dependent variables may limit the need for an isolation of the River to complete a portion of the required tasks at Wall A (see construction details below). Completion of tasks requiring an isolation from the River may be delayed within the proposed schedule (Section 2.3) to ensure frozen conditions are present. If frozen conditions can not be achieved and the site requires isolation, the following activities will be completed:
 - a) Secondary barriers (e.g. floating silt curtain) will be installed to limit sediment/debris from leaving the site; and,
 - b) A cofferdam, made of non-erodible material (e.g. sand bags, AquaDam-type installations, steel or wood walls, concrete blocks or clean rip-rap) will be placed along the portion of retaining wall to prevent water from entering the active construction area. The size of the cofferdam will be determined by the Contractor in consultation with the Departmental Representative. Once the site is isolated, a fish salvage and relocation will take place and be monitored by a qualified professional. Removal of water within the cofferdam will occur once fish are relocated and to manage seepage. Water will be pumped into a well vegetated area (north of Wall C) and not directly back into the watercourse. A screened pump will be utilized for de-watering and removal of any seepage that may occur in the isolated area. Extra pumps will be on site in the event of a pump malfunction;
9. Removal of concrete will occur by hand or machinery to prepare the site for construction; and,
10. Minimal to no site clearing is expected. If the site does need to be cleared, the following measures are planned:
 - a) Protect existing buildings, fencing, sidewalks, vegetation and hardscaping on site and adjacent properties, where indicated;
 - b) Minimize disturbance of topsoil and vegetation;
 - c) Organics and topsoil will be salvaged and replaced in the reverse order of excavation over mineral soils during re-contouring activities, wherever possible; and,
 - d) Soils must be stored within temporary work spaces as approved by the Departmental Representative. If soil is stored for an extended period of time (greater than seven (7) days) or if heavy rain or wind is forecast, soil piles will be covered, with a geotextile or similar material, to reduce erosion.

Construction details include:

- **Wall A** – Requires localized reconstruction of the 15 m section of wall combined with the installation of a drainage pipe along the back face of the wall (1.8 m wide x 2.0 m deep) to repair the wall and mitigate hydraulic pressures behind the wall. The outlet for the drainage pipe is located at the north retaining wall and will empty drainage into a vegetated area (north of Wall C). Installation of additional grouted tensioned anchors (i.e. DYWIDAG rock anchors) will occur to increase the overall overturning and sliding resistance of the wall and meet the CDA requirements for the position of resultant under all loading conditions and sliding, under post earthquake conditions. A portion of the work may be conducted below the high-water mark with the use of a cofferdam and floating silt curtain, if required;
- **Wall B** – Requires reconstruction of the damaged portion of the wall to below the level of the sidewalk deck and between the stairs and the base of the grouted rip-rap slope; covering an area 0.9 m wide x 6.0 m long x 1.5± m deep. The new reinforced concrete wall section will include a new spread footing (2.1 ± m wide x 6.0 m long x 0.6 m deep), doweled into the adjacent wall/stairs to mitigate future settlement. The top of the new reinforced concrete spread footing (approx. elevation 291.5 masl) will offset from the top of the concrete paving (approx. elevation 221.0 masl). This work will not occur below the high-water mark; and,

- **Grouted Rip-Rap Slope (Wall C)** – Requires repointing (removing the existing grout and any damaged rip-rap and placement of existing or new rip-rap and re-grouting) of the grouted rip-rap and localized excavation and backfilling to restore support in areas where damage has occurred. Clean rip-rap will be placed, by hand, over top a geotextile fabric at the slope. This work will not occur below the high-water mark.

This work will generally require the placement and compaction of granular fill materials against the retaining walls and beneath the reconstructed concrete pavement. Geotextiles will be used to separate the granular backfill from the existing cohesive fill materials to mitigate future settlement. Concrete will be brought to the area by a concrete truck and will be delivered to the Project Site by a concrete pumper. Any debris from the concrete work will be removed immediately and disposed of in licensed facilities. As well, the contractor is required to supply a wash out area off-site, away from the watercourse to remove debris from equipment. Equipment refueling will also occur off-site, away from the watercourse. Additional construction items include:

1. Any excavated stockpiled soil will be temporarily stored outside of the high-water mark and will not be allowed to enter the water. This material will be re-used (if possible) or disposed of at an appropriate (licensed) waste landfill site, in accordance with applicable federal and provincial laws, regulations, codes and guidelines;
2. Silt fences will be maintained during construction to prevent erosion runoff from reaching the river during the work. The location of the fencing will be selected by the Contractor in consultation with the Departmental Representative and PSPC;
3. All the planned activities will take place within the existing footprint of the property, unless a cofferdam is required;
4. Disturbance to topsoil may occur near the laydown area and away from the river; and,
5. No discharges to the environment are planned or expected.

Site Restoration includes backfilling, installation of concrete pavement, and removing any rubbish, construction debris, equipment and temporary structures. Additional tasks include:

1. Sodding all disturbed areas with bare soil with a weed-free sod, representative of the surrounding vegetation, as soon as possible after the disturbance, to reduce the spread of invasive species; and,
2. Implementing new measures (if required) and maintaining existing erosion control measures until vegetation re-establishes.

Re-vegetation and erosion control plans will be submitted to the Departmental Representative for review prior to mobilization on site and construction commences.

2.2 Construction Equipment/Resources

The Project will likely require the use of heavy machinery such as a backhoe, concrete truck, concrete pumper and haul truck. Petroleum products such as gasoline, diesel fuel and lubricants will be required to operate this heavy machinery. The project will also require the use of quarried material such as aggregate to backfill the excavated retaining walls. As well, the contractor is required to supply a wash out area, off site and away from the watercourse to remove debris from equipment.

Operation of construction equipment will result in combustion exhaust emissions to the atmosphere. Total emissions are not anticipated to have measurable quantities over emissions from other activities (e.g. farming, vehicle use) in the region.

2.3 Schedule

The following timelines and durations for design, tendering and construction are anticipated to meet the original project schedule identified in the Terms of Reference.

- Engineering design from January to end of March 2019.
- Tender in August 2019 (three weeks for Contracts review and advertisement, three weeks advertising period, two weeks for award).
- Construction is anticipated to begin in September 2019 and end in January 2020 (eight to ten-week duration within this period).

The project schedule will be continually monitored and updated as the design progresses.

2.4 Pre-Construction Activities

2.4.1 Roles and Responsibilities

The following roles and responsibilities will be carried out by Project personnel, throughout construction.

Agency	Responsibility
Public Services and Procurement Canada (PSPC)	1. PSPC will provide the Contractor and Departmental Representative with copies of all Project documents, including the most recent updates, revisions, amendments, and copies of all necessary, municipal, provincial and federal licenses, permits and approvals that are necessary for the Project, prior to construction.
	2. PSPC will supply the Departmental Representative with all applicable Project documents, including the survey plans and site sketches, prior to construction.
Contractor	1. An EPP will form part of the Project documents and specification and will be created by the selected Contractor.
	2. Applicable federal and provincial permits and approvals will be adhered to.
	3. The Contractor will work cooperatively with PSPC and the Departmental Representative to identify and address environmental issues and confirm compliance with specific regulatory requirements for the Project.
	4. Project documents (e.g. EPP and all permits and approvals) will be kept on-site during construction.
	5. The Contractor is responsible to ensure site security at all times during construction.
	6. Adherence to all items described in the contract documents.

Agency	Responsibility
	<ol style="list-style-type: none"> <li data-bbox="415 296 1500 338">7. Contractor personnel will be trained in spill response and containment procedures. <li data-bbox="415 359 1500 474">8. The Contractor will be responsible for managing the environmental aspects of construction (e.g., erosion and sediment control program) in consultation with PSPC and the Departmental Representative. <li data-bbox="415 495 1500 642">9. The Contractor will create and submit the EPP to the Departmental Representative/PSPC. The EPP shall include a Spill Response Plan and an Erosion and Sediment Control Plan and shall make reference to the Environmental Effects Evaluation and outlined mitigation measures.
Departmental Representative	<ol style="list-style-type: none"> <li data-bbox="415 678 1500 825">1. A Departmental Representative will be on-site during all critical construction phases (e.g., site isolation, fish salvage, start of excavation, etc.) to confirm implementation of the EPP and any regulatory issued conditions, and to monitor and report on the effectiveness of the construction procedures and mitigation measures in minimizing adverse impacts. <li data-bbox="415 846 1500 993">2. If the Departmental Representative determines that construction activities are contravening the EPP or the terms and conditions of any regulatory license or permit, the Departmental Representative, in consultation with PSPC, can suspend construction until a solution is established.

2.4.2 Consultations and Regulatory Requirements

Public Consultation

Due to the nature of the project (repair of existing structure) which is intended to improve the SALD, no public concern is anticipated; therefore, PSPC has confirmed that no public consultation will be required.

Aboriginal Consultation

Due to the nature, scope, and location of the proposed project, PSPC has confirmed that no Aboriginal Consultation is required, as the project will not have any impacts on aboriginal rights.

Federal and Provincial Consultation

A Notice of Works has been provided to Transport Canada, as the project is not listed under the Minor Works Order. The package provided to Transport Canada is included in **Appendix B**.

A Request for Review form has been submitted to Fisheries and Oceans Canada, as work will take place below the high-water mark. A copy of the submitted application form is provided in **Appendix B**.

Manitoba Sustainable Development has also been notified of the Project to inform a provincial agency of the planned Project. A copy of this correspondence is provided in **Appendix B**. Additional correspondence will be provided to PSPC and the Departmental Representative when it is received.

Notifications will be made prior to initiating Project activities and are identified in Table 2-1.

**Table 2-1
Anticipated Notifications Prior to Construction**

Agency	Task
Federal and Provincial Regulators	The Departmental Representative will notify all applicable federal and provincial regulators at least one week prior to construction, unless otherwise required. Applicable federal and provincial regulators are outlined in Table 2-2.
Utility, Railway, and Private Road Operators	The Contractor will notify utility and transport companies who own and/or operate pipelines, electrical cables, telecommunication lines, railway and private roads that are crossed or potentially impacted by the Project, two weeks prior to construction, to avoid or reduce potential impacts or disruptions to their operations.

PSPC, the selected Contractor, and the Departmental Representative, will adhere to the applicable permits, approvals, regulations and codes of practice available at the time of construction. Table 2-2 provides a summary of the expected licenses and approvals for this Project.

**Table 2-2
A Summary of the Anticipated Licences and Permits for the Proposed Project.
Responses can be found in Appendix B**

Regulatory Instrument	Status	Contact Person/Address
Federal		
Fisheries Act - Fisheries and Oceans Canada	A Request for Review form was submitted on June 5, 2019, A response was received on July 19,2019 - an authorization under the Fisheries Act or a permit under the Species at Risk Act is not required.	Lucas Coletti fisheriesprotection@dfo-mpo.gc.ca
Navigable Waters Protection Act – Transport Canada	A Notice of Works form was submitted on June 6, 2019. A response was received on August 25, 2019 and the Minister of Transport has determined that this work will not substantially interfere with navigation.	Laura Jones TC.NPPPNR-PPNRPN.TC@tc.gc.ca
Species at Risk Act	Not required	n/a
Migratory Birds Convention Act	Not required	n/a
Canadian Environmental Assessment Act	Not required - not listed as a Designated Project	n/a

Regulatory Instrument	Status	Contact Person/Address
Provincial		
Manitoba Sustainable Development - Environmental Assessment and Licensing	Response was received on May 30, 2019 - requires a final copy of the EEE.	Bruce Webb Bruce.Webb@gov.mb.ca
Manitoba Sustainable Development – Wildlife and Fisheries Branch (live fish handling permit)	A Live Fish Handling Permit will be obtained if a fish salvage and relocation is determined to be required.	Laureen Janusz Laureen.Janusz@gov.mb.ca
Heritage Property Act - HCB	Not Required	n/a

2.4.3 Communication Plan

The following communication measures will be taken throughout Project activities:

Contractor Environmental Orientation

The Departmental Representative will conduct a Contractor environmental orientation that includes the Contractor, Supervisor, and engineering personnel to discuss:

- Key environmental issues specific to the work.
- Any landowner conditions or requests.
- Specific construction methods, mitigation measures, and environmental incident reporting plans.
- Conditions of permits and regulatory approvals.

As well, the following items will be included in the orientation:

- The Contractor Supervisor will provide an environmental orientation to all Project personnel prior to the beginning of construction activities and will discuss the implementation of the EPP and the terms and conditions of Project approvals.
- Project personnel will be made aware that showing carelessness or neglect of the environment or disregard for requirements put forward in the EPP could result in removal from the worksite.
- All environmental project information will be stored and made available on-site including the EPP, permits and approvals, as well as Project reference material (e.g., engineering drawings). These documents will be discussed and supplied after the contractor orientation.

The Departmental Representative will develop a communication plan with PSPC and the Contractor Supervisor outlining reporting procedures and a plan for timely communication of environmental issues. These may include daily summaries of environmental issues, and allocated time to discuss environmental issues/concerns at daily site construction meetings.

The Contractor will be required to comply with all terms, conditions, and measures contained within the EPP and will sign-off on agreements made.

Site Construction Meetings

Environmental conflicts, concern, and awareness will be discussed by the Departmental Representative and Contractor personnel as they arise at daily health and safety site construction meetings attended by on-site Project personnel.

2.5 Post Construction Monitoring

Areas disturbed and subsequently reclaimed during the Project will be inspected in spring or summer during the growing season and prior to the end of warranty period. The purpose of post construction monitoring is to:

- Assess the success of any reclamation efforts undertaken and assess the necessity for any remedial or follow-up work;
- Evaluate the condition of the areas disturbed during construction with respect to topography, soil condition, and drainage (e.g. grade restoration, topsoil replacement, drainage restoration, and slope stability);
- Confirm that weed species, as listed under Manitoba's The Noxious Weeds Act (2019) have not been introduced into new areas;
- Identify additional environmental issues that remain after reclamation; and,
- Recommend any remedial measures that are warranted to address any outstanding environmental issues identified.

Post construction monitoring programs will be completed to ensure the land surface reclamation of the worksite and integrity of the installed infrastructure is maintained after construction is completed and that regulatory requirements are adhered to during operations.

3 ENVIRONMENTAL DESCRIPTION

3.1 Aquatic and Terrestrial Environment

The Project Area is located within the Lake Manitoba Plain Ecoregion within the Prairie Ecozone. The bedrock within the ecoregion has a gently undulating ridge and swale topography and is covered by strongly calcareous, loamy glacial till (Smith et al., 1998²). Relief in the ecoregion is minimal and drainage is generally to the east and north. Most of the Red River Valley was originally tall grass prairie, with significant areas of wet meadow and marsh lands. More recently, most glaciolacustrine areas within the ecoregion have been drained and converted to farmland, while stony, glacial till areas are used for improved forage and native pasture for livestock production.

The surficial soils in the vicinity of the SALD consist primarily of highly disturbed Red River clay, dredged from the canal (PSPC, 2011³). Limestone (Red River Formation) bedrock underlies the local soils and forms part of the extensive carbonate rock aquifer, which supplies water to the region.

The Lake Manitoba Plain Ecoregion typically includes terrestrial habitat for elk (wapiti), coyote, badger, white-tailed deer, rabbits and ground squirrels (Smith et al., 1998). Amphibians which have habitat ranges surrounding the SALD

² Smith, R.E., H. Veldhuis, G.F. Mills, R.G. Eilers, W.R. Fraser, and G.W. Lelyk. 1998. Terrestrial Ecozones, Ecoregions, and Ecodistricts, An Ecological Stratification of Manitoba's Landscapes. Technical Bulletin 98-9E. Land Resource Unit, Brandon Research Centre, Research Branch, Agriculture and Agri-Food Canada, Winnipeg, Manitoba

³ Hill, K. 2011. Environmental Assessment Screening Report - North West Slope Stability - St. Andrews Lock & Dam - Lockport, MB R.048826.002. Public Services and Procurement Canada Environmental Services, Western Region. Winnipeg, MB.

include Canadian toad, gray treefrog, Boreal chorus frog, northern leopard frog, and the wood frog (PSPC, 2011). Reptiles that have habitat ranges that include the SALD include eastern snapping turtle, western painted turtle, smooth greensnake, northern red-bellied snake, plains gartersnake, and the Red-sided gartersnake. Representative bird species of the Prairie Ecozone include ferruginous hawk, sage grouse, American avocet and burrowing owl, Great blue heron, black-billed magpie, Baltimore oriole, veery and brown thrasher birds (Smith et al., 1998). This ecozone also provides major breeding, staging and nesting habitats for ducks, geese, and shore birds.

A fisheries inventory indicated that 60 fish species were present in the Red River in 2005 (PSPC, 2011). These fish included sport fish such as bullhead, northern pike, sauger, walleye, channel catfish, and goldeye. A species list provided by Janusz⁴ in 2018 also identifies several sport fish in the Red River and is summarized in Table 3-1. According to Janusz, this list was compiled from a number of sources and its accuracy may need to be confirmed. According to the species list, spring, summer and fall spawning fish are known to occur in the Red River. A fish ladder can be found on the east side of the SALD structure, to facilitate fish spawning and migration. Fish tend to congregate at the lock structure in this area because of the fish ladder.

Table 3-1
A Selection of Fish Present in the Red River⁶

Name	Name	Name	Name
silverchub	golden rehorse	silver rehorse	black crappie
quillback	sauger	shorthead rehorse	brown bullhead
bigmouth buffalo	black bullhead	burbot	channel catfish
smallmouth bass	goldeye	freshwater drum	chestnut lamprey
white crappie	carp	lake sturgeon	cisco
lake whitefish	longnose sucker	mooneye	northern pike
rock bass	silver lamprey	stonecat	walleye
white bass	white sucker	yellow perch	

The nearest vegetation to the Project Site consists primarily of manicured grass with some small trees and shrubs along the north-west slope. The Project area is generally comprised of retaining walls, concrete decks, and a slope with rip-rap. The river bottom near the Project area is comprised of a soft silt material.

3.2 Species at Risk

The nearest historical occurrence of a protected species includes a colony of milkweed (*Asclepias syriaca*) located on an island south of the lock channel (PSPC, 2011). Milkweed is used as a host plant for life stages (i.e. egg-laying, larval rearing, and pupation) of the Monarch butterfly, which is a species of special concern (Schedule 1). Milkweed was not observed along the west slope during a previous site visit (PSPC, 2011).

⁴ Janusz, L. 2018. Personal Communication (email) - request of fish species list in the Red River. Fisheries Biologist. Manitoba Sustainable Development. Winnipeg, MB.

A special conservation area for the American white pelican (*Pelecanus erythrorhynchos*) is located on the east side of the River, immediately below the docks⁵. This species tends to congregate in areas where fish are more abundant. Operations at SALD (e.g. water vessel movements, lock usage, etc.) may limit its use near the Project Site.

A review of Environment Canada's species at risk registry has identified twelve (Schedule 1) species with habitat ranges surrounding the Project area (Govt Can, 2011)⁶. A list of these species along with their Federal ranking (SARA Schedule 1 status) and preferred habitat can be found in Table 3-2.

Table 3-2
Species at Risk with Ranges Surrounding the Project Area

Name	SARA Status (Schedule 1)	Habitat Preferences ⁸	Likelihood of Occurrence within the Project Site
Bank swallow (<i>Riparia riparia</i>)	Threatened	Prefers artificial sites with vertical banks, including riverbanks, lake and ocean bluffs, aggregate pits, road cuts, and stock piles of soil.	Unlikely, these conditions are not present at the site. Stock piles will be covered if they are inactive for seven days.
Chimney swift (<i>Chaetura pelagica</i>)	Threatened	Can be found in urban and rural areas where the birds can find chimneys to use as nesting and resting sites.	Unlikely, these conditions are not present at the Project site
Common nighthawk (<i>Chordeiles minor</i>)	Threatened	Prefers open, vegetation-free habitats, including dunes, beaches, recently harvested forests, burnt-over areas, logged areas, rocky outcrops, rocky barrens, grasslands, pastures, peat bogs, marshes, lakeshores, and river banks.	Unlikely, these conditions are not present at the Project site
Loggerhead shrike (<i>Lanius ludovicianus migrans</i>)	Endangered	Inhabits open ranges with occasional trees and shrubs, the species uses grazing areas where the grass is short.	Unlikely, these conditions are not present at the Project site
Monarch (<i>Danaus plexippus</i>)	Special Concern	Milkweeds (numerous species) are the sole food plant for Monarch caterpillars. These plants grow predominantly in open and periodically disturbed habitats such as roadsides, fields, wetlands, prairies, and open forests.	Unlikely, these conditions are not present at the Project site

⁵ Murray, C. 2019. Search of the Manitoba Conservation Data Centre's (CDC) rare species database at SALD and a 1 km radius. Information Manager. Manitoba Conservation Data Center. Winnipeg, MB.

⁶ Government of Canada (Govt Can), 2011. Species at Risk Registry – A to Z Species Index. Retrieved from https://wildlife-species.canada.ca/species-risk-registry/sar/index/default_e.cfm

Name	SARA Status (Schedule 1)	Habitat Preferences ⁸	Likelihood of Occurrence within the Project Site
Northern leopard frog (<i>Lithobates pipiens</i>)	Special Concern	<p>Separate habitats are used by this species and contiguity between these areas is required.</p> <p>Overwintering sites are well-oxygenated water bodies that do not freeze to the bottom, including streams, creeks, rivers, spillways below dams, and deep lakes and ponds.</p> <p>Breeding occurs in pools, ponds, marshes and lakes, and may occasionally occur in slow-moving streams and creeks.</p> <p>In the summer, the frogs are found in moist upland meadows and native prairie, riparian areas and ponds facilitate movement between habitats.</p>	Unlikely, the site has open areas that would increase exposure to predators, existing human traffic may also cause this species to avoid the Project site
Peregrine falcon (<i>Falco peregrinus anatum/tundrius</i>)	Special Concern	Found in various types of habitats, including prairies and urban centers. Usually nests alone on ledges of cliffs, tall buildings, or bridges, always near good foraging areas.	Unlikely, these conditions are not present at the Project site
Red-headed woodpecker (<i>Melanerpes erythrocephalus</i>)	Threatened	Found in a variety of habitats, including oak and beech forests, grasslands, forest edges, orchards, pastures, riparian forests, roadsides, urban parks, golf courses, cemeteries, beaver ponds and burns.	Unlikely, these conditions are not present at the Project site
Carmine shiner (<i>Notropis percobromus</i>)	Threatened	Prefers clear, fast-flowing larger streams and small rivers with clean gravel bottoms. It is often found in schools in riffles, as well as clear pools in the lower portions of streams near where they join with larger streams or rivers (areas with plentiful aquatic insects).	Unlikely, these conditions are not present at the Project site

Name	SARA Status (Schedule 1)	Habitat Preferences ⁸	Likelihood of Occurrence within the Project Site
Silver chub (<i>Macrhybopsis storeriana</i>)	Special Concern	Occurs in large, moderate flow rivers with a substrate of silt or sand, but sometimes gravel, rubble, boulder or bedrock.	Moderate, these conditions may exist at the site and this species is known to occur in the Red River, but no historic occurrence is known at the Project site
Bigmouth Buffalo (<i>Ictiobus cyprinellus</i>)	Special Concern	Lakes, medium to large sized rivers in slower waters	Unlikely, slower waters are not expected near the Project site
Mapleleaf Mussel (<i>Quadrula quadrula</i>)	Endangered	Medium to large rivers in firmly packed coarse gravel and sand to firmly packed clay/mud bottom	Minor, these conditions may exist at the site, but no historic occurrence is known at the Project site
Chestnut Lamprey (<i>Ichthyomyzon castaneus</i>)	n/a - Provincial ranking – S3	Moderate-sized rivers and large creeks	Moderate, these conditions may exist at the site and this species is known to occur in the Red River, but no historic occurrence is known at the Project site

3.3 Invasive Species

The Red River is a water body within the central fisheries zone that is designated under the Aquatic Invasive Species (AIS) Regulations to control the spread of zebra mussels. In addition to the general cleaning requirements that must be done before any watercraft or water related equipment (including construction equipment used in water, personal gear like waders, etc.), any vessel that leaves the shoreline of any water body in Manitoba, must also be decontaminated and completely dry before placing into another water body. Notification to Sustainable Development (i.e. Lauren Janusz at 204-793-1154) must be provided if zebra mussels are observed on anything removed from the watercourse.

3.4 Socio Economic and Cultural Environment

3.4.1 Historical Land Use

The SALD was constructed in the early 1900's to control upstream water levels to allow for the navigation of commercial vessels; prior to this time, the site was unoccupied (PSPC, 2011). SALD is owned and operated by PSPC.

3.4.2 Heritage Resources

The SALD (and nearby rapids) was known historically as a place to catch large quantities of fish during the spawning season, so the potential to find historical resources along the banks of the Red River is high (PSPC, 2011). An area at the Lockport site, north of the rapids on the east side of the river, also has well documented prehistoric use; originally having six burial mounds, remains of an extensive campsite/village and evidence of early horticulture (PSPC, 1992)⁷. The facility is recognized as a National Historic Site by the Historic Sites and Monuments Board of Canada, as well as a Historic Site of Manitoba.

The area has been heavily disturbed by human activity (e.g. dam and lock construction) since it was built in the early 1900's and historical remains have likely already been disturbed (PSPC, 2011). Therefore, the likelihood of encountering significant cultural resources is considered low and Manitoba's Historic Resources Branch was not contacted to determine the potential for heritage resources at the Project Site. The potential to find historical resources along the Red River is high, but the potential for the area surrounding the Project Site is low because the area has been heavily disturbed by human activity.

4 ENVIRONMENTAL EFFECTS AND MITIGATION

4.1 Scope of the Assessment

The scope of this assessment is to evaluate the potential environmental effects (i.e. biological, physical and human) from the proposed Project and to identify how the effects can be mitigated. The assessment completed for this Project follows the terms provided in the Terms of Reference for an Environmental Effects Evaluation and includes the following steps:

- Determine the valued components that may interact with the Project.
- Present the existing environmental setting.
- Identify the potential Project-environment interactions.
- Consult with Provincial and Federal Authorities.
- Assess the Project effects, recommended mitigation, and evaluation of residual effects.
- Complete the cumulative effects assessment for the Project in combination with existing activities and reasonably foreseeable projects and activities.
- Identify any follow-up and monitoring programs.
- Provide a determination of significant adverse environmental effects.

Scoping for appropriate Valued Ecosystem Components (VECs) and Valued Social Components (VSCs) was completed by considering changes to the biophysical environment due to the project, as well as any effects on the socio-economic environment. For this project VECs were selected based on ecological importance and/or value to the existing environment, the relative sensitivity of environmental components to project impacts and their relative social, cultural, or economic importance. VSCs include components of the socio-economic environment that may be affected by a change in the environment as a result of the project. VECs and VSCs for this project were determined using the Checklist provided in Table 4-1.

⁷ Public Services and Procurement Canada, 1992. Background Information for Environmental Assessments on Proposed Rehabilitation of the St. Andrews Lock and Dam, Lockport, Manitoba.

Environmental effects considered are those that may impact air quality, soils, surface water, groundwater, non-renewable resources, vegetation, species at risk, fish, birds, aesthetics, transportation network, heritage resources, and human health and safety.

Spatially this assessment includes the SALD and areas within 30 m of the property boundary including the Red River.

The temporal boundaries (time frame) for the assessment were selected based on the main Project activities, and include:

- Construction (including site preparation) (September to November 2019); and,
- Site stabilization (sod establishment may be completed in the spring of 2020, if clearing is required).

**Table 4-1
Checklist for Scoping Valued Ecosystem and Social Components**

Valued Ecosystem Components (VECs)			Valued Social Components (VSCs)		
Physical and Biological Components (attributes to consider)	Component is present in the scoped area	Potential Component/Project Interaction	Socio-Economic Components (attributes to consider)	Component is present in the scoped area	Potential Component/Project Interaction
Air Quality - noise, dust, emissions	Y	Y	Aesthetics	Y	Y
Weather/Climate/Microclimate - wind, precipitation, temperature, inversion, fog	Y	Y	Land Use – Official Plan, zoning		
Soil - erosion, compaction, settling, stability (slides, slumps)	Y	Y	Transportation Network		
Geology/Geophysics - fractures, chemical reactions, subsidence			Navigation	Y	Y
Permafrost			Recreation		
Surface Water - quantity, quality, shore, line/bottom alteration, flow variation, flood, drought, current, tides, wave action, littoral, process	Y	Y	Tourism	Y	Y
Groundwater - quantity, quality, flow, water table			Heritage Resources		
Renewable & Non-Renewable Resources	Y	Y	Aboriginal – traditional lands/resources		
Vegetation - quantity, type, quality, successional change	Y	Y	Agriculture		

Valued Ecosystem Components (VECs)			Valued Social Components (VSCs)		
Bio-Diversity			Aquaculture		
Rare/Endangered Species (SARA)	Y	Y	Human Health & Safety	Y	Y
Mammals - population change, productive capacity, habitat modifications (i.e. nesting, breeding, feeding, etc.)			Economy/Taxes		
Fish/Fish Habitat - population change, productive capacity, habitat modifications (spawning, breeding, feeding, etc.)	Y	Y	Employment		
Amphibians & Reptiles – population change, productive capacity, habitat modifications (i.e. nesting, breeding, feeding, etc.)					
Birds - population change, productive capacity, habitat modifications (i.e. nesting, breeding, feeding, etc.)	Y	Y			
Migratory Corridor/Buffer Zone					
Estuaries/Salt Marshes					
Wetlands/Bogs					

Note: Yes = Y, Unknown = ?, and No = Blank. The socio-economic impact assessment of this EEE considers only socio-economic effects to the extent that these result from an effect on the (biophysical) environment. This is in accordance with the definitions of “environment” and “environmental effect” in the CEA Act.

A temporal boundary for the Operation of the Project was not considered because the Project is comprised of maintenance activities and installation of anchor and drainage structures that will provide better performance of the infrastructure at this facility. Project Operations at SALD are considered to be beyond the scope of this Environmental Effects Evaluation.

4.2 Valued Components

The Canadian Environmental Assessment Agency describes valued components (VC's) as: “Any part of the environment that is considered important by the proponent, public, scientists and government involved in the assessment process. Importance may be determined on the basis of cultural values or scientific concern.” (CEAA, 2012)⁸.

While all components of the environment are important, it is not necessary or practical to assess every potential effect of a project on every component. For this Project, the VC's were determined by identifying environmental

⁸ Canadian Environmental Assessment Agency (CEAA). 2012. Cumulative Effects Assessment Practitioners' Guide. Retrieved from: <http://www.ceaa-acee.gc.ca/default.asp?lang=En&n=43952694-1&offset=6>.

components for which there were public, regulatory or scientific concern. The following information was reviewed and considered to support the selection of VC's, including:

- General knowledge of the Project area.
- Previous environmental assessments completed in the area that identified ecological and socio-economic components that are valued by communities, government agencies and the public.
- Historical records of listed vegetation and wildlife species that may have a potential for interaction with the Project and sensitivity to effects.
- Species conservation status or concern (e.g., rarity, sensitivity and uniqueness).

Based on this information, the VC's selected for this Project include:

- Soils;
- Air Quality;
- Surface water (water quality);
- Species at Risk;
- Migratory birds;
- Fish and fish habitat;
- Vegetation (plant communities and listed plant species);
- Wildlife and Wildlife Habitat;
- Heritage resources;
- Noise; and,
- Transportation (construction traffic).

The assessment focusses on the components that were deemed to have the greatest relevance in terms of value and sensitivity, and which are likely to be affected by the Project. Due to the extent and duration of the planned construction activities and proposed mitigation measures, the following valued social components: aesthetics, tourism, and land use were not included in the assessment. This section discusses the Project components or activities, and the associated mitigation that will be developed and incorporated into the Project design and construction activities.

4.3 Project Interactions, Mitigation and Residual Effects

The effects assessment considers the potential interactions between the Project components, activities and the VC. Project interactions may be direct (i.e., dropping debris into the watercourse), or indirect (i.e., dust may be deposited on nearby vegetation). Once the project-interactions have been identified, mitigation is developed to reduce or avoid potential effects to VC's.

Environmental effects that remain after mitigation measures have been implemented are considered residual effects. Any adverse effect that is eliminated or considered unlikely after mitigation is not identified as a residual effect and not considered further in the assessment. Predicted residual effects are described in terms of the following criteria (CEAA 2015)⁹:

⁹ CEAA. 2015. Operational Policy Statement Determining Whether a Designated Project is Likely to Cause Significant Adverse Environmental Effects under the *Canadian Environmental Assessment Act*, 2012. Retrieved from: <https://www.canada.ca/en/environmental-assessment/>

- **Direction** – is used to indicate whether the proposed project has a positive, neutral or negative effect compared to baseline conditions.
- **Significance of Effect**– is a measure of the intensity of change to a VC (based on the current landscape condition, population status, known capacity to adapt) and is specific to each VC. There are three classes: negligible to low (no measurable change or a minor predicted change compared to baseline conditions), moderate (effect exceeds baseline conditions however the effect is less than regulatory criteria or published guideline values), and high (effect exceeds regulatory criteria or published guideline values).
- **Geographic extent** – refers to the area over which the effect occurs; local (effect is limited to the Project footprint), regional (extends beyond the local scale and can include cumulative effects from other developments) or beyond regional (extends beyond the regional area or 30 km radius from the Project Site).
- **Duration/reversibility** – is used to describe the period of time over which the effects could occur or how long the changes causing the effect will last. Duration is classified as short-term (effects are reversible at the end of the construction phase), medium-term (effects are reversible at the end of the operations phase), long-term (effects are reversible after the decommission and/or abandonment phase) or permanent (effects are not reversible).
- **Frequency/timing** – is how often the effect is predicted to occur. Effects that occur on a regular basis are considered to be of greater concern than effects that occur less often. Frequency is classified as infrequent (effects occur rarely), frequent (effects occur intermittently) or continuous (effects occur at regular and frequent intervals (i.e. > once per month).
- **Likelihood** – is the probability and uncertainty of an effect occurring. Likelihood is classified as unlikely, possible (the effect may occur, but is not likely), probable (the effect is likely to occur) or certain.

4.3.1 Mitigation Measures

Mitigation measures for the work will be provided by the selected Contractor through the creation of a project and site-specific EPP. The EPP will outline the following:

1. Applicable sections of the federal and provincial legislation and the measures that will be implemented to ensure compliance with those regulations (Table 2-2).
2. Proposed construction schedule, construction materials and methods to be used during construction activities.
3. Environmental sensitivities associated with the project location and proposed activities.
4. A site-specific Erosion and Sediment Control plan and a Spill Response Plan.

The EPP will be reviewed by the Departmental Representative for approval prior to commencing construction and the Contractor will ensure effective implementation of the EPP. The EPP will also reference the Environmental Effects Evaluation and state the need to adhere to all specified mitigation and monitoring measures.

Additional best management practises/mitigation measures (along with the relevant VC that the practise will mitigate) that will be utilized on this Project to mitigate potential effects include the following:

Construction Site Access and Parking

1. All private vehicles must be parked on laydown areas pre-approved by the Departmental Representative.

[agency/news/media-room/media-room-2015/determining-whether-designated-project-is-likely-cause-significant-adverse-environmental-effects-under-ceaa-2012.html](https://www150.com/agency/news/media-room/media-room-2015/determining-whether-designated-project-is-likely-cause-significant-adverse-environmental-effects-under-ceaa-2012.html)

2. The Contractor shall ensure that the environmental sensitivities identified in this Environmental Effects Evaluation (e.g. fish and fish habitat) within or beyond the work limits are not negatively impacted or damaged by workers' vehicles or construction machinery.

Potentially affected VCs: soil, air quality, surface water, vegetation, wildlife, noise, and transportation.

Erosion and Sediment Control

1. Erosion control measures that prevent sediment from entering any watercourse or water body in the vicinity of the construction site are a critical element of the project and shall be implemented by the Contractor. The determination of which measures are used and where to place them will be finalized in the EPP in consultation with the Departmental Representative.
2. Erosion and sediment control measures will be constructed and functional prior to initiating construction activities.
3. All erosion and sediment control measures will be inspected daily prior to the start of construction activities, and immediately following periods of heavy precipitation or storm events.
4. Erosion and sediment control measures will be maintained until all disturbed ground has been permanently stabilized, suspended sediment has resettled to the bed of the waterbody or settling basin, and runoff water is clear. The measures will include the following, where applicable:
 - a. Measures for managing water flowing onto the site, as well as water being pumped/diverted from the site into a well-vegetated area (north of Wall C) or settling basin and not into the watercourse.
 - b. Site isolation measures (e.g., silt boom or silt curtain) for containing suspended sediment where in-water work is required.
 - c. Measures for containing and stabilizing waste material (e.g., excavation spoils, construction waste and materials, accumulated debris) above the high-water mark of nearby waterbodies to prevent re-entry.
 - d. Repairs to erosion and sediment control measures and structures if damage occurs.
 - e. Removal of non-biodegradable erosion and sediment control materials will occur once the site is stabilized.

Potentially affected VCs: soil, surface water, species at risk, migratory birds, fish, vegetation, wildlife, and heritage.

Work Adjacent to Waterways

1. The Contractor shall prevent any deleterious and objectionable materials from entering streams, rivers, water bodies or watercourses that would result in damage to aquatic and riparian habitat. The determination of which measures are used and where to place them to prevent material from entering the water will be finalized in the EPP in consultation with the Departmental Representative.
2. Construction equipment will not be operated in waterways.
3. Excavation fill, waste material, debris or other extraneous material will not be placed in waterways, under any circumstance.

Potentially affected VCs: soil, air quality, surface water, species at risk, migratory birds, fish, and vegetation.

In-stream Isolation (Cofferdam)

1. Cofferdams must be constructed of clean, non-erodible materials such as sand bags, AquaDam-type installations, steel or wood walls, concrete blocks or clean rip-rap.
2. Earthen fill material containing fine sediments shall not be used unless, prior to its placement within the watercourse, it is contained using a non-erodible material (e.g. sand bag) that will prevent the release of sediment contained therein.
3. Once installed, cofferdams shall be appropriately sealed (e.g. lined with heavy gauge plastic or the bottom sealed with sand bags), as required, to prevent the cofferdam structures from leaking.
4. Material for cofferdams must be obtained from outside the bed, bank or boundary of any watercourse or water body.
5. A fish salvage will be completed within the cofferdam prior to the start of construction activities. The fish salvage will be completed by a qualified biologist using electro-fishing, minnow traps and/or seine net fish capture methods following approved sampling and fish capture protocol. All fish captured will be enumerated and released downstream of the project limits immediately following capture. Mitigation measures/requirements outlined in the Live Fish Handling Permit shall also be adhered to.
6. Upon removal, cofferdam locations will be restored and stabilized to the approximate original width, depth and substrate of the watercourse or water body.
7. Downstream water flow must be maintained (e.g. pumping) at the natural flow rate at all times for the duration of the project (i.e. water flows are not to be impeded).
8. The discharge areas for all pumps will be armored with clean rock, geo-textile fabric or some other energy dissipating device to prevent erosion and scouring of the watercourse bed and bank at the points of discharge.
9. For any dewatering activities, water shall be released into a well-vegetated area (north of Wall C) or settling basin and not directly into the watercourse, provided the water is able to return to the watercourse after sediment has filtered out.
10. Water entering the watercourse will be of equal or better quality than the receiving water.

Potentially affected VCs: surface water, species at risk, and fish.

Pollution Control

1. Temporary erosion and pollution control features (e.g. mufflers) installed will be maintained.
2. The containment, storage, security, handling, use, unique spill response requirements and disposal of empty containers, surplus product or waste generated in the use of any hazardous or toxic products shall be in accordance with all applicable federal and provincial legislation.
3. The Contractor shall provide spill kits at re-fueling, lubrication, and repair locations that will be capable of dealing with 110% of the largest potential spill and shall be maintained in good working order on the construction site.
4. Re-fueling equipment and repairs should not be permitted on-site in an effort to prevent fuel/oil spills from occurring.
5. The Contractor and site staff shall be informed of the location of the spill response kit(s) and be trained in its use.
6. Spill kits must be present in all equipment and machinery used on site.

7. Timely and effective actions shall be taken to stop, contain and clean-up spills as long as the site is safe to enter. The Departmental Representative shall be notified immediately of any spill.
8. In the event of a major spill, all work shall be stopped, and all personnel will be devoted to spill containment and clean-up. Information for reporting a spill will be included in the EPP for this Project.
9. Dry materials and rubbish will be covered or wet down to prevent blowing dust or debris. The Contractor will provide dust control for temporary roads and laydown areas.

Potentially affected VCs: soil, air quality, surface water, species at risk, migratory birds, fish, vegetation, wildlife, noise, and transportation.

Equipment Maintenance, Fuelling and Operation

1. All equipment will be properly maintained, in sound mechanical condition and free of any fuel, oil, and hydraulic fluid or coolant leaks.
2. The Contractor shall ensure that all equipment is inspected daily for fluid/fuel leaks and maintained in good working order.
3. Equipment will be free of external grease, loose dirt or oil and the machinery will be pressure washed prior to the start of the project.

Potentially affected VCs: soil, air quality, surface water, species at risk, migratory birds, fish, vegetation, wildlife, noise, and transportation.

Site Clearing

1. When clearing vegetation, existing buildings, fencing, sidewalks, vegetation and hardscaping on site and adjacent properties will be marked for avoidance or protected by the placement of plywood matting or other similar material.
2. Minimize disturbance to topsoil and vegetation.
3. Organics and topsoil will be salvaged and replaced in the reverse order of excavation over mineral soils during re-contouring activities, wherever possible.
4. Soils will be stored within temporary work spaces as approved by the Departmental Representative. If soil is stored for an extended period of time (greater than seven (7) days) or if heavy rain or wind is forecasted, soil piles will be covered, with a geotextile or similar material, to reduce erosion.

Potentially affected VCs: soil, air quality, surface water, species at risk, migratory birds, fish, vegetation, wildlife, heritage, noise, and transportation.

Wildlife

1. Non-intrusive migratory bird nesting surveys will be completed by a qualified biologist if clearing is completed within the active migratory bird nesting period (i.e. April 15 to August 31).
2. Reduce sensory disturbances (e.g., noise) by avoiding unnecessary idling and requiring all motorized vehicles and equipment to have appropriate mufflers to minimize noise generation during construction activities.
3. Temporary exclusion fencing will be erected around excavations, where required.
4. Food and human wastes will be secured and properly disposed of to minimize attracting scavenging species.

5. Project personnel will be instructed not to feed any wildlife present.

Potentially affected VCs: species at risk, migratory birds, fish, vegetation, wildlife, noise, and transportation.

Heritage Discoveries

1. If the crew discovers materials they believe to be archaeological in nature (artifacts, tipi rings, bones, etc.) all work in the immediate area will cease and the Departmental Representative and PSPC will be contacted.
2. If human remains are discovered at any point in time, work will be stopped and PSPC, the Departmental Representative, and the RCMP will be contacted.

Potentially affected VCs: soil and heritage.

Waste Materials Storage and Removal

1. The Contractor and workers shall dispose of hazardous wastes in accordance with the Canadian Environmental Protection Act, Manitoba Dangerous Goods Handling and Transportation Act and any other applicable federal and provincial laws, regulations, codes and guidelines.
2. Construction, trade, hazardous waste and domestic waste materials will not be burned, buried or discarded at the construction site. These wastes will be contained and removed in a timely and approved manner by the Contractor and workers, and disposed of at licensed facilities or with licensed haulers.

Potentially affected VCs: soil, air quality, surface water, species at risk, migratory birds, fish, vegetation, wildlife, noise, and transportation.

Materials to be Salvaged

1. Site materials which are specified or designated by the Departmental Representative to be salvaged and replaced following completion of excavation, backfilling and concreting operations will be removed, cleaned, delivered, unloaded and neatly stockpiled.
2. Any salvaged materials damaged during removal, unloading or in transit will be repaired or replaced by the Contractor.

Potentially affected VCs: soil, air quality, surface water, noise, and transportation.

Clean up

1. Construction debris, waste materials, and packaging material will be removed from the worksite daily.
2. Clean dirt or mud tracked onto paved or surfaced roadways.
3. Store materials resulting from excavation activities that are salvageable.

Potentially affected VCs: soil, air quality, surface water, fish, vegetation, wildlife, noise, and transportation.

Restoration

1. To reduce the spread of invasive species, all disturbed areas with bare soil will be sodded with a weed-free seed mixture representative of the surrounding habitat as soon as possible after disturbance.
2. Erosion control measures (e.g. silt fencing) must be implemented and maintained until vegetation re-establishes.
3. Re-vegetation and erosion control plans will be submitted to the Departmental Representative for review prior to mobilization on site and construction commences.

Potentially affected VCs: soil, air quality, surface water, fish, vegetation, wildlife, noise, and transportation.

Specific effects, the most relevant mitigation measures and residual effects are summarized in Table 4.2.

**Table 4-2
Potential Effects, Proposed Mitigation and Residual Effects**

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
Soil	Construction activities	Direct loss or alteration of soil in Project footprint	Topsoil will be salvaged and placed back to where it was taken from.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Compaction	Construction activities shall be confined to the immediate project area to minimize the potential for soil compaction; a staging area will be set up for equipment and vehicle storage; heavy equipment will use designated access points to minimize the potential for soil compaction	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
	Construction activities	Soil erosion (wind/water) from clearing and stock piling activities	Construction activities shall be confined to the immediate project area to minimize the potential for soil erosion. Erosion and sediment control measures (e.g. silt fencing) will be installed prior to construction and maintained during the duration of construction.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
Air Quality	Construction activities	Air quality impacts from dust raised by construction equipment.	Excavation activities should not take place during extremely windy periods, non-toxic dust control measures (e.g. water or soil stabilizers) should be used as required in the construction area, and stockpiled soils should be covered to prevent wind erosion and airborne dust.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Air quality impacts from gaseous and particulate emissions from this equipment	Maintain equipment in good working order, ensure all equipment is fitted with standard air emission control devices, and avoid unnecessary idling of vehicles and/or heavy machinery.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
Surface Water (water quality)	Construction activities	Construction debris falls into the river	Debris will be prevented from entering the watercourse (with the use of a cofferdam) during the Project, and immediately removed if any debris does enter the watercourse.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
	Construction activities	Increase in erosion and sediment migration	Install and maintain effective erosion and sediment control measures (i.e. silt fencing).	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	During the installation, operation, and removal of a cofferdam, debris may enter the watercourse	A floating silt curtain will be installed and secured to intercept sediment and debris from entering the River. Non-erodible materials (e.g. sand bags, AquaDam-type installations, steel or wood walls, concrete blocks or clean rip-rap) will be used to construct and seal the cofferdam	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Spills of contaminants such as fuels, chemicals and wastewater	<ul style="list-style-type: none"> Storage and handling of all potential contaminants and/or hazardous materials shall be in accordance with established guidelines and regulations, including all federal and provincial standards and protocols; Re-fuelling and equipment maintenance activities will not be conducted on-site; A Spill Response Plan will be prepared by the Contractor to address the accidental release of fuel, chemicals or other hazardous materials; Wastewater (de-watering from cofferdam or seepage) will be filtered and released into a vegetated area, not back into the Red River; and, Spill kit will be onsite. 	Direction: negative Significance: moderate Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
Species at Risk	Construction activities	Disturbance to listed species (i.e. aquatic SARA species)	<p>If a cofferdam is required, a fish salvage will be undertaken by a qualified biologist. Based on a review of the project site and SAR with habitat ranges overlapping with the project site, the only SAR with a minor to moderate likelihood of occurrence in the project area include: Silver Chub, Maple Leaf Mussel, and the Chestnut Lamprey. Since disturbance of the River substrate is not expected within the cofferdam, as it will be suspended from the retaining wall, potential impacts to these species are not expected in the event that a cofferdam is required.</p> <p>In the event that a SAR is identified, all in water work will be suspended and DFO will be contacted for further guidance. All work will be conducted in compliance with the Species at Risk Act.</p>	<p>Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely</p>
Migratory Birds	Construction activities	Disturbance to nesting activities	<p>Although no clearing of vegetation is anticipated as part of the project, if it is determined to be required, clearing of tree and shrub cover and mowing of vegetation will be scheduled outside of the general breeding and nesting period for migratory birds in the Project area which is between April 15 and August 31. If these areas are needed to be disturbed during their nesting period, field visits will be conducted by a qualified biologist, to determine if nesting is occurring before site clearing. All work will be conducted in compliance with the Migratory Birds Convention Act.</p>	<p>Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely</p>
Fish and Fish Habitat	Construction activities	Change in habitat quality or quantity due to placement of construction debris into the river	<p>Debris will be prevented from entering the watercourse during the Project (e.g. installation of a cofferdam and silt curtain, avoidance, etc.) and immediately removed if any debris does enter the watercourse.</p>	<p>Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely</p>

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
	Construction activities	Potential release of deleterious substances from operation of equipment and machinery adjacent to the Red River	Erosion control measures will be installed and maintained that will prevent sediment from entering any waterway; an EPP will be created for the Project; construction equipment will not operate in waterways; and no excavation fill, waste material, debris or other extraneous material will be deposited in waterways, under any circumstance. Refueling and maintenance of equipment will be conducted off-site away from the nearby watercourse.	Direction: negative Significance e: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Disturbance of fish during fish salvage, handling during enumeration, and re-location from the instream isolation.	If it is determined to be required, a fish salvage will be completed by a qualified biologist following approved sampling and fish capture protocol. All fish captured will be enumerated and released downstream of the project limits immediately following capture. A Live Fish Handling Permit shall be obtained from Manitoba Sustainable Development, Wildlife and Fisheries Branch and all permit requirements shall be adhered to.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Introduction of pests, in particular the zebra mussel, can affect aquatic health and land use	Construction equipment will be washed prior to entering the site and when leaving the site, workers will be informed of the possibility of an introduction and measures to lessen any effects (e.g. remove mud from boots and vehicles) will be communicated.	Direction: negative Significance: moderate to high Geographic extent: local Duration/reversibility: long term Frequency/timing: infrequent Likelihood: unlikely
Vegetation	Construction activities	Loss or alteration of vegetation communities	Access and parking at the site will be limited to pre-approved areas that will be marked. Plywood mats will be put down for heavy equipment/machinery to access the project area to prevent impacts to grassed areas and work will be suspended during heavy rainfall events.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
			The Contractor's Supervisor is required to monitor, assess and take corrective actions (if required) if damage or impacts by worker's vehicles or construction machinery to vegetation occurs within and beyond the Project footprint	
	Construction activities	Introduction of noxious and invasive weed species	Weeds will be monitored after construction is completed and vegetation control will be completed where required. Exposed soil will be covered with sod as soon as possible.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
Wildlife and Wildlife Habitat	Construction activities	In-direct loss of wildlife habitat from the Project footprint, if vegetation clearing is required	The small footprint of the required repairs is temporary and not expected to affect wildlife that are habituated to human activity in the area.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Vehicle-wildlife collisions can cause mortality or injury to wildlife	Workers will be informed of wildlife in the area and vehicle speeds will be reduced where required.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
	Construction activities	Sensory disturbance	Work will occur during daylight hours and workers will be instructed not to bother wildlife.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
Heritage	Construction activities	Disturbance or destruction of heritage resources	If the crew discovers materials they believe to be archaeological in nature (artifacts, tipi rings, bones, etc.) all work in the immediate area will cease and the Departmental Representative and PSPC will be contacted; and if human remains are discovered at any point in time, work will be stopped and PSPC, the Departmental Representative, and the RCMP will be contacted.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Construction could alter lock usage by vessels	Construction activities are scheduled to take place in the fall when boat traffic and use of the locks is considerably less than in the summer months. If a cofferdam is required, the footprint is small and will not obstruct the entire waterway. Any mitigation measures required by Transport Canada will be adhered to.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
Noise	Construction activities	Sensory disturbance to wildlife	Work will occur during daylight hours and workers will be instructed not to bother wildlife. Construction will be a temporary activity, and mufflers will be used on equipment, while construction will occur in small areas at a time.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: frequent Likelihood: likely

Valued Component	Interaction	Potential Effect(s)	Mitigation	Residual Effect(s)
	Construction activities	Sensory disturbance to patrons and staff at SALD	Work will occur during daylight hours. Construction will be a temporary activity and mufflers will be used on equipment, while construction will occur in small areas at a time.	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: frequent Likelihood: likely
Transportation (construction traffic)	Construction activities	Vehicle-wildlife collisions can cause mortality or injury to wildlife	Workers will be informed of wildlife in the area and vehicle speeds will be reduced where required	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely
	Construction activities	Increase in traffic	<ul style="list-style-type: none"> All construction workers and drivers will be reminded of safe-driving habits and local speed limits and road weight restrictions; Transportation routes for equipment and material deliveries, and for contaminated soil removal should be developed that avoid residential neighborhoods as much as possible; and Where traffic control is required on public roads, the Contractor will provide a flag person to direct traffic. 	Direction: negative Significance: low Geographic extent: local Duration/reversibility: short term Frequency/timing: infrequent Likelihood: unlikely

4.3.2 Schedule and Environmental Protection Timelines

Project activities will consider the following environmental protection timelines and restricted activity periods.

Table 4-3

Project Activities will Consider the Following Environmental Protection Timelines and Restricted Activity Periods

Schedule	Timeline
General	All Project work will occur during dry or frozen ground conditions.
General Breeding and Nesting Period	Although no clearing of vegetation is anticipated as part of the project, if it is determined to be required, clearing of tree and shrub cover and mowing of vegetation will be scheduled outside of the general breeding and nesting period for migratory birds in the Project area between: April 15 and August 31 ¹⁰ Should clearing of tree and shrub cover and/or mowing of vegetation be completed during the general breeding and nesting period for migratory birds, additional discussions with PSPC Environmental Services and Manitoba Sustainable Development will be required on how to proceed.
Fish Restricted Activity Periods	In Manitoba the restricted activity timing windows (for spring, summer and fall spawning fish in the Southern Manitoba zone) for the protection of fish and fish habitat will be adhered to during any in-water work (if required). The restricted activity timing window for protection of fish and fish habitat occurs from: April 1 to June 30 (spring and summer) and September 15 to April 30 (fall) ¹¹ for work within the Red River. DFO has determined that this project will not result in serious harm to fish or prohibited effects on listed aquatic species at risk (Appendix B).
Weather	Following periods of excessive rainfall or saturated soil conditions, general construction activities will be suspended until suitable soil conditions return. During periods of high winds, earth work and travel may need to be suspended to avoid excessive dust generation (or alternatively dust suppression measures shall be employed).

4.3.3 Residual Effects

With the implementation of the above-noted mitigation measures, residual effects as a result project activities are unlikely. If any residual effects do occur, they are considered negligible with low levels of significance, local, short term, and infrequent. Potential effects to protected aquatic species can be mitigated by avoidance and construction scheduling while mitigation measures for effects to surface water and fish and fish habitat have been incorporated into the Project design and will be further described in an EPP that will be created for construction activities at the

¹⁰ Government of Canada (Govt Can). 2014. General Nesting Periods of Migratory Birds in Canada. Environment Canada. Retrieved May 2019 from <https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods.html>

¹¹ Fisheries and Oceans Canada (DFO). 2013. Measures to avoid causing harm to fish and fish habitat. Retrieved May 2019 from <http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/measures-mesures-eng.html>



Project site. Construction is also scheduled to begin before the fall activity restriction window for fish (i.e. September 15). If a fish salvage is required to be undertaken and protected species (silver chub and chestnut lamprey) that are known to occur in the Red River are encountered, all in water work will be suspended and PSPC and DFO will be contacted immediately. As well, the disturbance to the substrate within the River will be avoided to mitigate potential impacts to species present within this habitat (possibly Maple leaf mussel). Noise during construction will occur but will be mitigated by scheduling (i.e. work will occur within day time hours, construction will have a short duration – six to eight weeks) and mufflers, when possible. The scheduling will also reduce potential impacts to nesting migratory birds by avoiding construction during nesting periods, and minimal to no removal of vegetation is anticipated as part of the project. A detailed erosion and sediment control plan will also be developed in the EPP to limit potential impacts to soil, water quality, species at risk, migratory birds, fish, vegetation, wildlife, and heritage resources. Construction traffic will be limited to marked areas and will occur for a relatively short term.

4.4 Cumulative Effects

Cumulative effects occur when environmental effects that are likely to result from a project occur in conjunction with other past, present and/or reasonably likely future projects or activities within the area. As residual effects are not anticipated with the implementation of the above-noted mitigation measures, cumulative effects as a result of the project activities are also not anticipated.

4.5 Monitoring Requirements

PSPC is committed to comprehensive and continuous monitoring during the construction phase of the Project. The completed environmental assessment has identified potential risks for a Project of this nature. The environmental monitoring will be used to review, observe and report on environmental aspects of the Project. To reduce environmental risk, the monitoring process aims to anticipate potential impacts and identify mitigation/avoidance strategies to ensure that goals and objects set in the monitoring plan, contract documents and regulatory approvals are achieved. The selected contractor will develop a project specific Environmental Protection Plan (EPP) which will provide site-specific measures for mitigating potentially harmful effects to environmental resources identified during the environmental assessment process. No additional monitoring, beyond what is planned to be completed, is recommended.

4.6 Accidents and Malfunctions

Accidents and malfunctions can occur during all phases of the Project. The potential for accidents and malfunctions to occur increases when contractors do not proactively prepare for unexpected events, and as a result are not prepared to handle them when they occur. PSPC realizes that accidents and malfunctions, if they were to occur, could result in significant adverse environmental effects even if their likelihood of occurrence is low. Although these events are rare, Project design, construction and operational protocols (e.g., equipment maintenance, routine inspections, and proper fuelling procedures) will be developed so that appropriate response options are developed.

Although accidents and malfunctions have the potential to affect surface water, fish, and fish habitat they are generally considered to be a one-time event that has a low magnitude (i.e. intensity of effect). With the implementation of the above noted mitigation measures, such as the requirement for a Spill Response Plan and spill kits being readily available, if an accident or malfunction were to occur, it is not anticipated that it would result in significant adverse environmental effects.

5 CEEA DETERMINATION

With the implementation of the above-noted mitigation measures, significant adverse environmental effects are not anticipated as a result of the project.

Prepared by:

Reviewed by:



Wade Sumners, P.Bio.
Senior Biologist

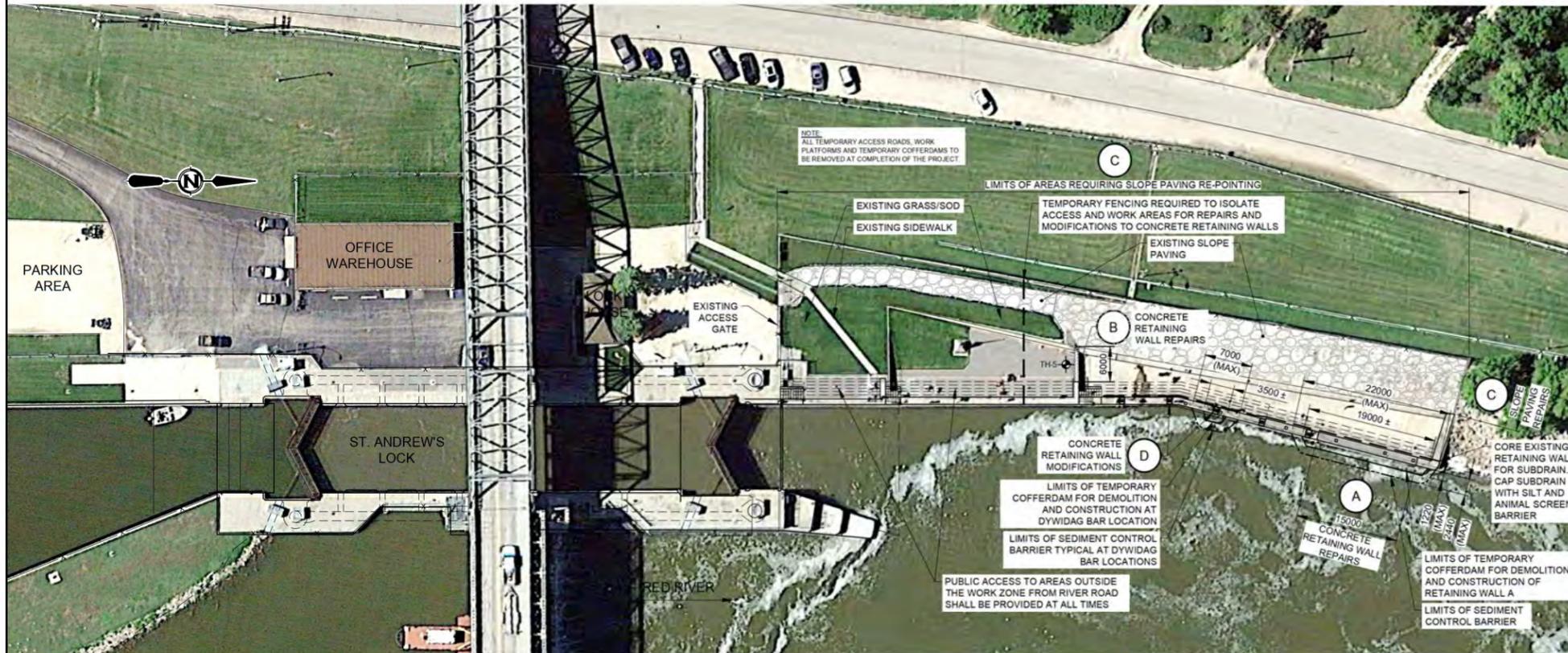
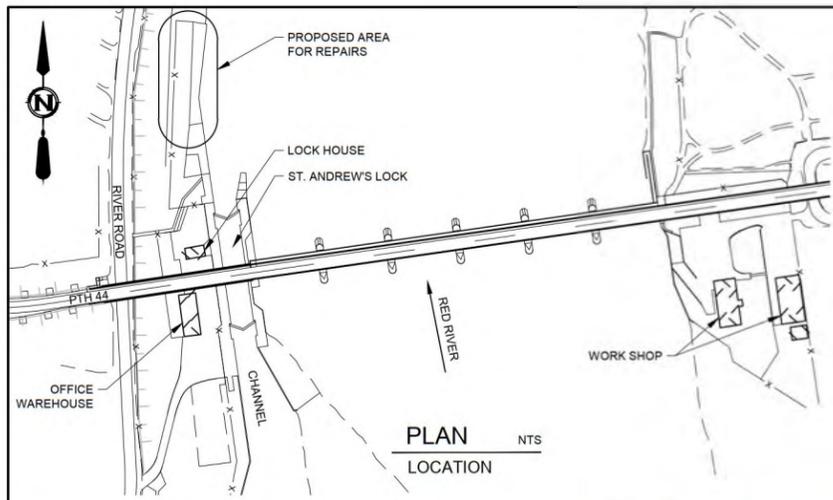


Jeff O'Driscoll, P.Eng.
Project Manager

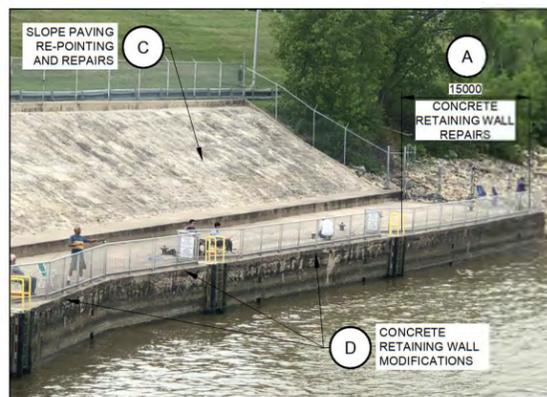
APPENDIX A – SITE PLAN AND PHOTOGRAPHS

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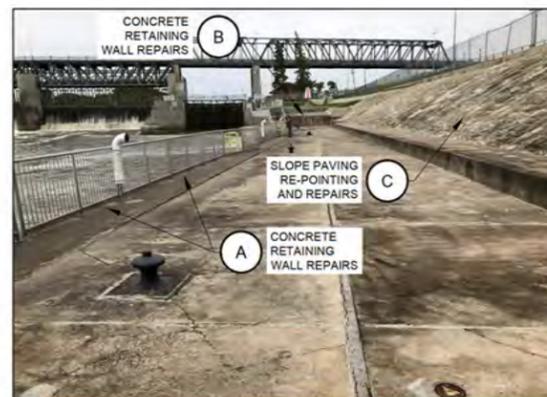




PLAN NTS
SITE OVERALL



VIEW
LOOKING NORTH-WEST
AT RETAINING WALL



VIEW
LOOKING SOUTH



VIEW
LOOKING NORTH ALONG
RETAINING WALL

PURPOSE OF PROJECT:

THE ST. ANDREWS LOCK & DAM (SALD) FACILITY, LOCATED IN LOCKPORT, MANITOBA, WAS CONSTRUCTED IN THE EARLY 20TH CENTURY TO FACILITATE COMMERCIAL NAVIGATION FROM LAKE WINNIPEG TO THE CITY OF WINNIPEG BY DROWNING THE LISTER RAPIDS DURING THE NAVIGATIONAL SEASON. THE FACILITY IS OPERATED AND MAINTAINED BY PUBLIC SERVICES AND PROCUREMENT CANADA (PSPC) AND CONSISTS OF A DAM, A NAVIGATION LOCK, A FISH LADDER, AND A TWO-LANE TRAFFIC BRIDGE. THE FACILITY IS RECOGNIZED AS A NATIONAL HISTORIC SITE BY THE HISTORIC SITES AND MONUMENTS BOARD OF CANADA, AS WELL AS THE MANITOBA HISTORICAL SOCIETY.

AN INVESTIGATION AND ASSESSMENT OF THE EXISTING RETAINING WALLS IDENTIFIED THREE RETAINING WALLS THAT REQUIRE REPAIR AND MODIFICATION:
WALL A - IS A SECTION OF THE WEST CHANNEL WALL LOCATED DOWNSTREAM FROM THE LOCK. THE WALL IS CRACKED/BULGED AT ONE LOCATION, WHICH INDICATES POTENTIAL ROTATIONAL MOVEMENT AND INSTABILITY OF THE WALL. PREVIOUS REPAIRS TO THE WALL AND THE DECK BEHIND IT WERE COMPLETED IN 1985 AND SIX VERTICAL GROUND ANCHORS WERE INSTALLED IN 2005.
WALL B - IS A SHORT RETAINING WALL ORIENTED PERPENDICULAR TO AND LOCATED AT THE SOUTH END OF WALL A. THE WALL IS CRACKED AT ONE LOCATION, WHICH INDICATES POTENTIAL SETTLEMENT AND/OR ROTATIONAL MOVEMENT AND INSTABILITY OF THE WALL. REPAIRS TO WALL B WERE ALSO COMPLETED IN 1985 IN CONJUNCTION WITH THE REPAIRS TO WALL A.
WALL C - IS A SECTION OF GROUTED RIP-RAP SLOPE THAT RUNS PARALLEL TO WALL A AND IS LOCATED AT THE BASE OF THE ROADWAY EMBANKMENT SLOPE. THE GROUT RECEIVES REGULAR REPOINTING AS PART OF ONGOING MAINTENANCE OF THE STRUCTURE AND GROUNDS.

LOCATION:

LATITUDE AND LONGITUDE

50° 5' 2.20" N
96° 56' 29.43" W

UTM COORDINATES - TEMPORARY BENCH MARK

TMB: ELEV. 224.517
NAILED IN CONCRETE
NORTHING: 5550060.205
EASTING: 647273.246
UTM ZONE: 14N

PROPOSED SCHEDULE:

TENTATIVE: FALL 2019 TO WINTER 2019

SCOPE OF WORK:

WALL A - CONCRETE RETAINING WALL REPAIRS

1. REMOVE AND REINSTALL EXISTING RAILING/FENCING, ACCESS LADDER, MOORING BOLLARDS AND BOAT ANCHORS WHERE REQUIRED.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. REMOVE EXISTING CONCRETE RETAINING WALL.
4. INSTALL NEW CONCRETE RETAINING WALL.
5. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.

WALL B - CONCRETE RETAINING WALL REPAIRS

1. REMOVE AND REINSTALL EXISTING RAILING.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. REMOVE EXISTING CONCRETE RETAINING WALL.
4. INSTALL NEW CONCRETE FOOTING AND PAVEMENT.
5. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.

SLOPE PAVING RE-POINTING

1. REMOVE EXISTING LOOSE GROUT BETWEEN RIP RAP.
2. RIP RAP REPAIRS
3. NEW POINTING OF RIP RAP.

WALL A - CONCRETE RETAINING WALL MODIFICATIONS

1. REMOVE AND REINSTALL EXISTING RAILING/FENCING, ACCESS LADDER, AND MOORING BOLLARDS WHERE REQUIRED.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. INSTALL NEW DRAINAGE PIPE.
4. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.
5. INSTALL NEW DYWIDAG ROCK ANCHORS.



5		
4		
3		
2		
1		
0	ISSUED FOR ENVIRONMENTAL REVIEW	2019/06/20
Revision	Description	Date
Client		client

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
ST. ANDREWS LOCK & DAM
LOCKPORT, MANITOBA

Project Site: Project

WEST SIDE QUAY WALL REHABILITATION

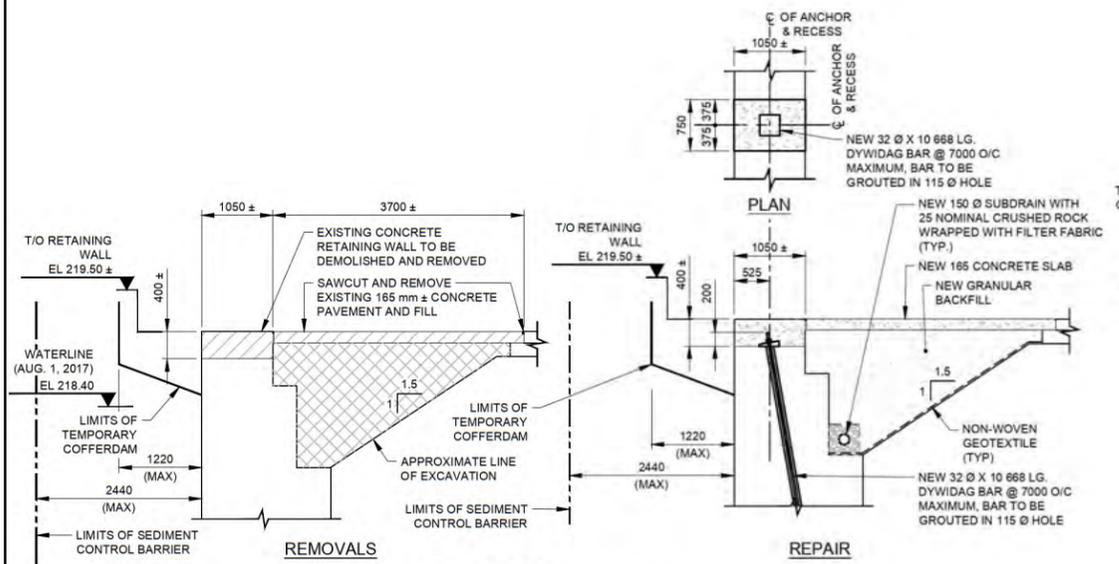
Designed by G. SARAZIN	Conçu par
Drawn by T. KUJCHERAVY	Dessiné par
Approved by W. SUMMERS	Approuvé par
PMSC Project Manager B. JAKARAN	Administrateur de Projets TPSGC
Drawing title	Titre du dessin

PROPOSED PROJECT PLAN
SUBMITTED FOR
ENVIRONMENTAL REVIEW

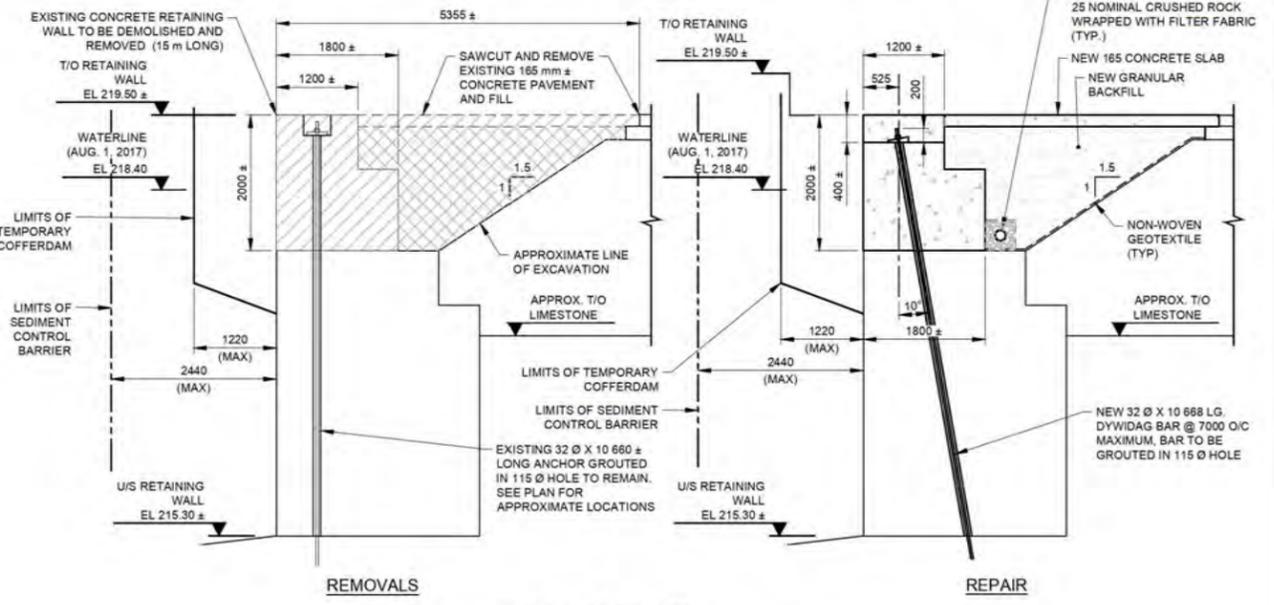
Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.097506.001	G01	0



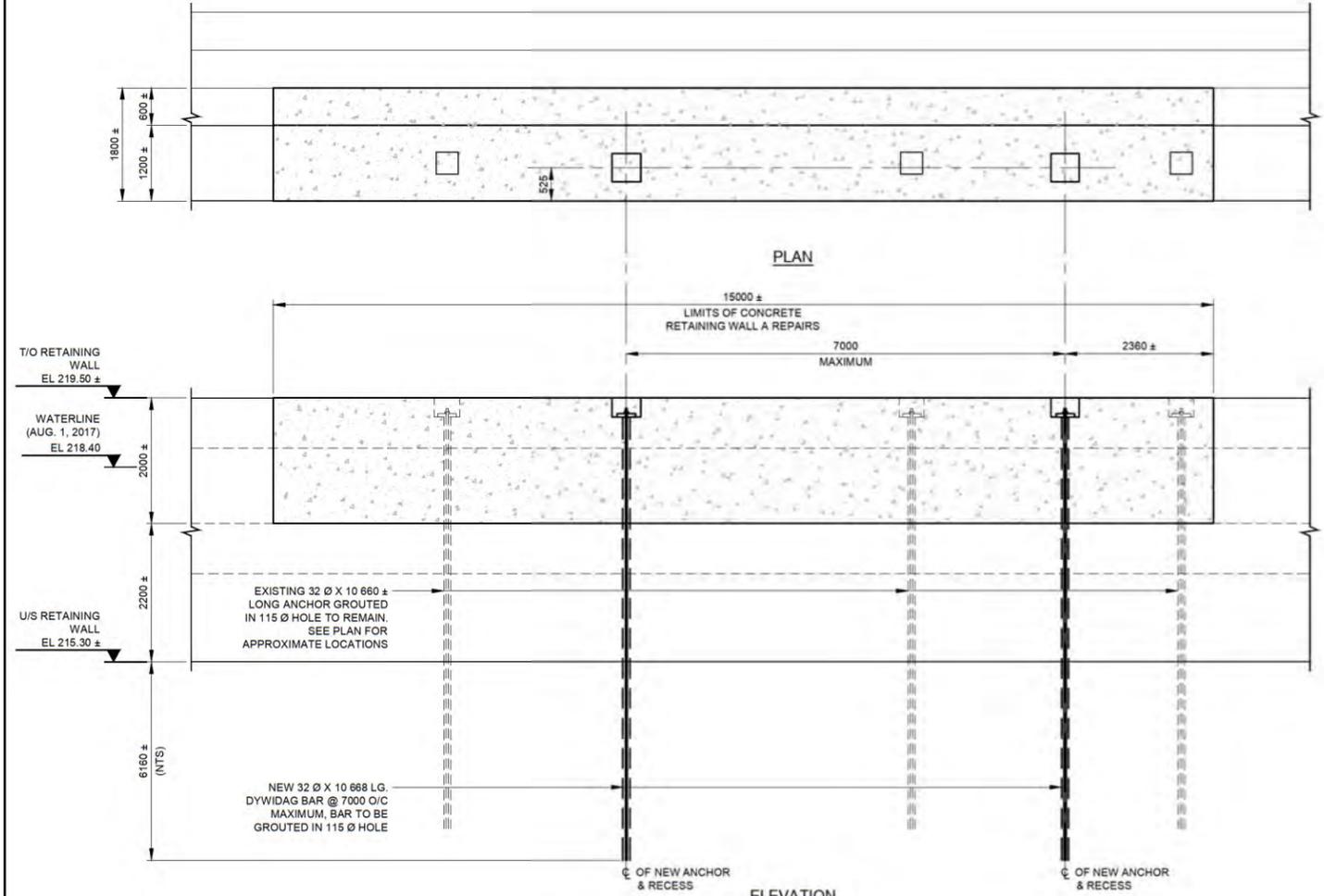
Note:
All temporary access roads, crane pads, work platforms and sheet pile cofferdams to be removed at completion of the project.



1 DETAIL 1:50
RETAINING WALL 'D' MODIFICATIONS



2 SECTION 1:50
RETAINING WALL 'A' REPAIRS



3 TYPICAL DETAIL 1:50
CONCRETE RETAINING WALL A

5		
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1		
0	ISSUED FOR ENVIRONMENTAL REVIEW	2019/06/20

Revision Description Date

Client client

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
ST. ANDREWS LOCK & DAM LOCKPORT, MANITOBA

Project Site Project

WEST SIDE QUAY WALL REHABILITATION

Designed by G. SARAZH Conçu par

Drawn by T. KUCHERAVY Dessiné par

Approved by W. SUMMERS Approuvé par

PMSCC Project Manager / Administrateur de Projets TPSGC B. JAKARAN

Drawing Title Titre du dessin

PROPOSED PROJECT PLAN SUBMITTED FOR ENVIRONMENTAL REVIEW

Project no./No. du projet Drawing no./No. du dessin Revision no.

R.097506.001 G02 0

OF 2

ENVIRONMENTAL SUBMISSION



APPENDIX B - REGULATORY CORRESPONDENCE

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From: FPP.CA / PPP.CA (DFO/MPO) [<mailto:fisheriesprotection@dfo-mpo.gc.ca>]

Sent: Thursday, July 18, 2019 9:25 AM

To: Wade Sumners <sumnersw@ae.ca>

Cc: Jeff O'Driscoll <odriscollj@ae.ca>

Subject: RE: 19-HCAA-00674 request for review - SALD repairs

Subject: Retaining Wall Maintenance, Red River, Lockport – Serious Harm to Fish and Prohibited Effects on Listed Aquatic Species at Risk Can Be Avoided or Mitigated 19-HCAA-00674

Dear Wade Sumners:

The Fisheries Protection Program (the Program) of Fisheries and Oceans Canada (DFO) received your proposal on June 5, 2019. We understand that you propose to:

- Repairs to retaining walls along Red River, downstream of St. Andrews Lock and Dam Structure
- hang the isolation off the sides of the existing deck, so that the river bottom is not disturbed

Our review considered the following information:

- Request for Review and Supporting Documents

Your proposal has been reviewed to determine whether it is likely to result in serious harm to fish which is prohibited under subsection 35(1) of the *Fisheries Act* unless authorized. Your proposal has also been reviewed to determine whether it is likely to affect listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the *Species at Risk Act*, unless authorized.

We understand the following aquatic species, listed under *Species at Risk Act*, may use the area in the vicinity of where your proposal is to be located:

- Mapleleaf Mussel, listed as Endangered
- Bigmouth Buffalo, listed as Special Concern
- Silver Chub, listed as Special Concern

Provided that your plans are implemented in the manner, and during the timeframe, described, the Program has determined that your proposal will not result in serious harm to fish or prohibited effects on listed aquatic species at risk. As such, an authorization under the *Fisheries Act* or a permit under the *Species at Risk Act* is not required.

Should your plans change or if you have omitted some information in your proposal, further review by the Program may be required. Consult our website (<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>) or consult with a qualified environmental consultant to determine if further review may be necessary. It remains your responsibility to avoid causing serious harm to fish in compliance with the *Fisheries Act*, and avoid prohibited effects on listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in compliance with the *Species at Risk Act*.

It is also your *Duty to Notify* DFO if you have caused, or are about to cause, serious harm to fish that are part of or support a commercial, recreational or Aboriginal fishery. Such notifications should be directed to <http://www.dfo-mpo.gc.ca/pnw-ppe/contact-eng.html>.

A copy of this letter should be kept on site while the work is in progress. It remains your responsibility to meet all other federal, territorial, provincial and municipal requirements that apply to your proposal.

If you have any questions with the content of this letter, please contact the Program by email at fisheriesprotection@dfo-mpo.gc.ca. Please refer to the file number referenced above when corresponding with the Program.

Yours sincerely,

Lucas Coletti

Fisheries Protection Biologist | Biologiste, protection des pêches

Fisheries and Oceans Canada | Pêches et Océans Canada

Fish and Fish Habitat Protection Program | Programme de Protection du Poisson et de Son Habitat

867 Lakeshore Road, Burlington, ON, L7S 1A1 | 867, ch. Lakeshore, Burlington, ON, L7S 1A1

Email/Courriel: Lucas.Coletti@dfo-mpo.gc.ca

Fisheries and Oceans Canada has changed the way new project proposals (referrals), reports of potential Fisheries Act violations (occurrences) and information requests are managed in Central and Arctic Region (Alberta, Saskatchewan, Manitoba, Ontario, Nunavut and the Northwest Territories). Please be advised that general information regarding the management of impacts to fish and fish habitat and self-assessment tools (e.g. Measures to Avoid Harm) that enable you to determine Fisheries Act requirements are available at DFO's "Projects Near Water" website at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html. For all occurrence reports, or project proposals where you have determined, following self-assessment, that you cannot avoid impacts to fish and fish habitat, please submit to fisheriesprotection@dfo-mpo.gc.ca. For general inquiries, call 1-855-852-8320.

From: Wade Sumners <sumnersw@ae.ca>

Sent: 2019-June-05 1:21 PM

To: FPP.CA / PPP.CA (DFO/MPO) <fisheriesprotection@dfo-mpo.gc.ca>

Cc: Jeff O'Driscoll <odriscollj@ae.ca>

Subject: 19-HCAA-00674 request for review - SALD repairs

Hi there, please find a request for review application along with a drawing (with photos) of the Project site attached for your consideration. Please contact me directly if you have any questions.

Wade Sumners, M.Sc., P.Biol.

Senior Biologist

Associated Environmental Consultants Inc.

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.653.4969 | Cel: 306.850.2976 | Dir: 306.653.4969.(ext.5332)



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From: Wade Sumners
Sent: Monday, July 15, 2019 1:24 PM
To: Coletti, Lucas <Lucas.Coletti@dfo-mpo.gc.ca>
Cc: Jeff O'Driscoll <odriscolj@ae.ca>; Tracey Kucheravy <kucheravyt@ae.ca>
Subject: RE: 19-HCAA-00674 request for review - SALD repairs

Hi Lucas, thanks for your reply. I have attached a revised drawing package that shows the cofferdam or isolation will not be installed on the river bottom. There are short sections (2.5 m in length) where the construction could occur and we will be asking the contractor (in the tender package) to hang the isolation off the sides of the existing deck, so that the river bottom is not disturbed. This could include bolting an impervious material to the wall below the construction and sandwiching it between pieces of plywood with brackets to hold things in place but we won't know this until the contractor is selected. It will be up to the selected contractor to determine the final installation method, according to the attached plans. Please let me know if you have any other questions.

Wade

From: Coletti, Lucas [<mailto:Lucas.Coletti@dfo-mpo.gc.ca>]
Sent: Friday, July 5, 2019 1:16 PM
To: Wade Sumners <sumnersw@ae.ca>
Cc: Jeff O'Driscoll <odriscolj@ae.ca>
Subject: RE: 19-HCAA-00674 request for review - SALD repairs

Hello Wade,

As you described in your request for review, you will be isolating the work area along the retaining wall and performing the work in the dry. Our Species at Risk biologist has recommended that a mussel search and relocation should be conducted if any are found in the area. As you may know, the Red River is mapped for Mapleleaf Mussel and may be in the area. As a result a SARA Permit may be needed when performing this relocation.

Can you confirm that you will incorporate a mussel relocation from the isolated area, in addition to a fish relocation?

Thanks,

Lucas Coletti

Fisheries Protection Biologist | Biologiste, protection des pêches

Fisheries and Oceans Canada | Pêches et Océans Canada

Fish and Fish Habitat Protection Program | Programme de Protection du Poisson et de Son Habitat

867 Lakeshore Road, Burlington, ON, L7S 1A1 | 867, ch. Lakeshore, Burlington, ON, L7S 1A1

T: (905) 319-6959

Email/Courriel: Lucas.Coletti@dfo-mpo.gc.ca

From: Wade Sumners <sumnersw@ae.ca>
Sent: 2019-June-05 1:21 PM

To: FPP.CA / PPP.CA (DFO/MPO) <fisheriesprotection@dfo-mpo.gc.ca>

Cc: Jeff O'Driscoll <odriscollj@ae.ca>

Subject: 19-HCAA-00674 request for review - SALD repairs

Hi there, please find a request for review application along with a drawing (with photos) of the Project site attached for your consideration. Please contact me directly if you have any questions.

Wade Summers, M.Sc., P.Biol.

Senior Biologist

Associated Environmental Consultants Inc.

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.653.4969 | Cel: 306.850.2976 | Dir: 306.653.4969.(ext.5332)



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NAVIGATION PROTECTION ACT (NPA) NOTICE OF WORKS FORM

WARNING: Any false or misleading statement with respect to this form and supporting documentation, including the misrepresentation of a material fact, may result in the refusal to authorize or issue Approval, or result in the suspension or cancellation of an Approval obtained through fraudulent means.

PRIOR TO COMPLETING THIS FORM:

1. Determine if your project is on a navigable water listed on the Schedule to the NPA. A *Notice to the Minister* is required for works on scheduled navigable waters. Works on non-scheduled navigable waters may be eligible to opt in; if requesting Opt-in, the Opt-in annex must be included with your *Notice to the Minister*.
2. Self assess your project against the *Minor Works Order* to determine if a *Notice to the Minister* is required. Links to the NPA Schedule, Order and Regulations can be accessed through the [Navigation Protection Program \(NPP\) Website](#).

PURPOSE	
<p>This <i>Notice of Works Form</i> and its supporting documentation (as well as other relevant information) which may be required for a review by Transport Canada (TC), once completed and submitted, comprise the <i>Notice to the Minister</i> as required under the NPA. For assistance in completing your submission, refer to the guidance provided on the NPP website under "Apply to the NPP" including the <i>Guide to the Navigation Protection Program's Notification, Application and Review Requirements</i>.</p>	
SUPPORTING DOCUMENTATION REQUIREMENTS	
<p>Mandatory Information Checklist (incomplete information will be returned with no action)</p> <p><input checked="" type="checkbox"/> Completed and signed "Notice of Works Form" with all mandatory fields completed</p> <p><input checked="" type="checkbox"/> Map showing location of project ¹</p> <p><input checked="" type="checkbox"/> Top/Plan drawing with dimensions ¹</p> <p><input checked="" type="checkbox"/> Side/Profile drawing with dimensions ¹</p> <p>¹ If you are submitting a Notice of Works in paper form, please provide two (2) copies of each supporting document. If the Notice of Works is submitted electronically, please ensure to attach all relevant documents (individually scanned).</p>	<p>Recommended Information (may expedite your review)</p> <p><input type="checkbox"/> Body of water details</p> <p><input type="checkbox"/> Land use/Ownership information</p> <p><input type="checkbox"/> Body of water use information</p> <p><input type="checkbox"/> Impacts, obstructions and mitigation plans</p> <p><input type="checkbox"/> Any environmental review information</p> <p><input type="checkbox"/> Operation, maintenance and marking plans</p> <p><input type="checkbox"/> Photographs of work site and body of water</p> <p><input type="checkbox"/> Aboriginal consultation results</p> <p><input type="checkbox"/> Other government agencies involved</p> <p><input type="checkbox"/> Water lot lease information</p> <p><input type="checkbox"/> Opt-in request annex (non-scheduled navigable waters only)</p>
<p>When submitting a Notice to the Minister in paper form, owners should note:</p> <ul style="list-style-type: none"> All plans and drawings must be legible when printed on 11" x 17" paper Your completed Notice to the Minister should be sent to the appropriate regional office as outlined below 	
TRANSPORT CANADA NAVIGATION PROTECTION PROGRAM REGIONAL OFFICES	
<p>Pacific Region Office 820-800 Burrard Street Vancouver BC V6Z 2J8 Telephone: 604-775-8867 Email: NPPAC-PPNAC@tc.gc.ca</p>	<p>Prairie and Northern Region Office Canada Place 1100-9700 Jasper Ave Edmonton AB T5J 4E6 Telephone: 780-495-8215 Email: NPPNR-PPNRPN@tc.gc.ca</p>
<p>Headquarters Office (For info on the NPP and NPA ONLY) Notices not processed at this office Tower C, 330 Sparks Street, 18th Floor Ottawa ON K1A 0N5 Telephone: 613-991-3476 Email: NPPHQ-PPNAC@tc.gc.ca</p>	<p>Quebec Region Office 401-1550 d'Estimauville Avenue, 5th Floor Quebec QC G1J 0C8 Telephone: 877-646-6420 Email: PPNQUE-NPPQUE@tc.gc.ca</p>
<p>Ontario Region Office 100 South Front Street, 1st Floor Sarnia ON N7T 2M4 Telephone: 519-383-1863 Email: NPPONT-PPNONT@tc.gc.ca</p>	<p>Atlantic Region Office 95 Foundry Street, 6th Floor P.O. Box 42 Moncton NB E1C 8K6 Telephone: 506-851-3113 Email: NPPATL-PPNATL@tc.gc.ca</p>



NAVIGATION PROTECTION ACT NOTICE OF WORKS FORM

TC file number (if known):
Are you the riparian property owner? <input type="radio"/> Yes <input checked="" type="radio"/> No

GENERAL INFORMATION

Official and/or local name(s) of the body of water (Required) Red River	Is the body of water listed on the schedule to the NPA? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown
Are you also requesting an Approval, if required? <input checked="" type="radio"/> Yes <input type="radio"/> No	Is this an Opt-in request? <input type="radio"/> Yes <input checked="" type="radio"/> No
Are you representing an Aboriginal group? <input type="radio"/> Yes <input checked="" type="radio"/> No	Is the work near/on First Nations reserve or land claim? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
Does this project involve throwing or depositing materials in water? <input type="radio"/> Yes <input checked="" type="radio"/> No	Does this project involve dewatering a body of water? <input type="radio"/> Yes <input checked="" type="radio"/> No

OWNER CONTACT INFORMATION*

Individual or company name (Required) Public Services and Procurement Canada	Contact name (Required) Karen Hill	
Mailing address (Required) 100-167 Lombard Avenue		
City/Town (Required) Winnipeg	Province/Territory (Required) Manitoba	Postal code (Required) R3B 0T6
Primary telephone number (999-999-9999) (Required) 204-290-1274	Other telephone number (999-999-9999)	E-mail Karen.hill@pwgsc-tpsgc.gc.ca

Owner's agent/mandatary (contractor/consultant/representative/co-proponent, if any)

Company name Associated Engineering (Sask.) Ltd	Contact name Jeff O'Driscoll	
Mailing address 203 - 5 Donald Street		
City/Town Winnipeg	Province/Territory Manitoba	Postal code R3L 2T4
Primary telephone number (999-999-9999) (Required) 204-942-6391	Other telephone number (999-999-9999) 204-791-6783	E-mail odriscollj@ae.ca

WORK SITE INFORMATION

Nearest municipality/county/district (Required) Lockport	Province/Territory (Required) Manitoba
Site location such as lot, concession, section, township, range, meridian, 911 address, property identification, etc. (Required) St. Andrews Lock and Dam (SALD) Survey plan - PIN 004050235, plan ID 26189 River Lot 104, RM of St. Andrews	
Site position Latitude North (Required) Degrees <u>50</u> Minutes <u>5</u> Seconds <u>6.93</u>	Site position Longitude West (Required) Degrees <u>96</u> Minutes <u>56</u> Seconds <u>28.85</u>
Hydro chart number:	Topo map number: 62-1/2

Body of water details, such as characteristics, bank/bottom features, biological components, flow/tides, etc.

The Red River is part of a major drainage watershed that drains a large area that includes Manitoba, Saskatchewan, North Dakota, and Minnesota. The river flows north to Lake Winnipeg and eventually empties into Hudson Bay.

Potential obstructions, such as natural/man-made, other works, navigation aids, etc.

A cofferdam may be installed along a bank within the River to provide a dry isolation, if required. It will be north of the dam on the west side of the River.

Land use/Ownership, such as past/current, private/government, rural/suburban, coastal, environmental, etc.

Government of Canada - Public Services and Procurement Canada

BODY OF WATER USE INFORMATION

Navigation types (check all that apply)		Maximum vessel size	
<input checked="" type="checkbox"/> Commercial	<input checked="" type="checkbox"/> Recreational	Length _____	Width _____ Draft _____
Traffic direction		Manoeuvrability (check all that apply)	
<input type="radio"/> One-way	<input checked="" type="radio"/> Two-way	<input type="checkbox"/> Poor	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Excellent
Day/Night	Volume	Navigation season(s) (check all that apply)	
<input type="radio"/> Day <input type="radio"/> Night <input checked="" type="radio"/> Both	<input type="radio"/> Low <input checked="" type="radio"/> Medium <input type="radio"/> High	<input type="checkbox"/> Winter	<input checked="" type="checkbox"/> Spring <input checked="" type="checkbox"/> Summer <input checked="" type="checkbox"/> Fall

Other uses such as cottagers, special events, fishing, etc.

The Red River at SALD is also used for recreational fishing

PROJECT INFORMATION

Name of work such as bridge, dam, marina, etc. (Required)	Type of work (check all that apply) (Required)
St. Andrews Lock and Dam - includes a two-lane bridge that crosses over the dam (Highway 44)	<input type="checkbox"/> Construct <input type="checkbox"/> Place <input checked="" type="checkbox"/> Alter <input checked="" type="checkbox"/> Repair <input type="checkbox"/> Decommission <input checked="" type="checkbox"/> Rebuild <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Temporary <input checked="" type="checkbox"/> Remove

Brief project description (or attach) such as status, structures, operation, etc. (Required)

Work includes repairs and modifications to retaining walls located along the west shore of the Red River immediately downstream of the lock and dam structures including: concrete removals; placement of aggregate materials, reinforcing steel and concrete, repairs to a rip-rap slope, installation of rock anchors, and site restoration activities.

Method of construction such as temporary works, activities, etc. (Required)

Heavy machinery will be used to place and haul away material from a dry isolation area that will be created with a coffer dam within the River

Anticipated impacts such as source, severity, mitigation, marking, waste/debris management, use, cumulative, etc.

Activities associated with the project are not likely to cause significant adverse environmental effects, as any environmental/socio-economic impacts that may occur as a result of project activities can be effectively mitigated (PSPC is completing an Environmental Effects Evaluation for the Project).

Expected start date (dd-mm-yyyy) (Required)	Expected completion date (dd-mm-yyyy) (Required)
01-09-2019	30-11-2019

ENVIRONMENTAL REVIEW INFORMATION	
Is the work located on Federal lands? <input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Unknown	Is the project a designated project under the <i>Regulations Designating Physical Activities</i> under the <i>Canadian Environmental Assessment Act, 2012</i> ? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown
Is the project subject to Northern Environmental Assessment (EA) Regime(s)? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Unknown	If yes, identify the northern EA regime(s) that apply <input type="checkbox"/> Inuvialuit Final Agreement (IFA) <input type="checkbox"/> Mackenzie Valley Resource Management Act (MVRMA) <input type="checkbox"/> Nunavut Land Claims Agreement (NLCA) <input type="checkbox"/> Yukon Environmental and Socio-economic Assessment Act (YESAA)
Other Federal Organizations involved <input type="checkbox"/> Canadian Environmental Assessment Agency (CEAA) <input type="checkbox"/> Environment Canada (EC) <input checked="" type="checkbox"/> Fisheries and Oceans Canada (DFO) <input type="checkbox"/> Natural Resources Canada (NRCan) <input type="checkbox"/> Major Projects Management Office (MPMO) <input type="checkbox"/> Northern Projects Management Office (NPMO) <input type="checkbox"/> Aboriginal Affairs and Northern Development Canada (AANDC) <input type="checkbox"/> Other: _____	
OWNER AUTHORIZATION*	
I hereby certify that the information contained herein and in any of the supporting documents is complete, true and accurate to the best of my knowledge and belief, and that I am authorized, as the owner, to submit this Notice to the Minister.	
 _____ Signature (Required)	03-06-2019 _____ Date (dd-mm-yyyy) (Required)
Karen Hill _____ Print Name (Required)	
FOR OFFICE USE ONLY	
_____ _____	Date stamped (dd-mm-yyyy) _____

*"Owner", in relation to a work, means the actual or reputed owner of the work or that owner's agent or mandatary. It includes a person who is in possession or claiming ownership of the work and a person who is authorizing or otherwise responsible for the construction, placement, alteration, repair, rebuilding, removal, decommissioning, maintenance, operation, safety or use of the work. It also includes a person who proposes to construct or place a work.

The personal information provided on this Notice to the Minister is collected under the authority of the **Navigation Protection Act**, sections 4, 5, 6, 9, 21, 22, 23 and 24. This information is required for the purpose of processing applications made under the above-noted sections for proposed, commenced or existing works that are or will be constructed, placed, altered, repaired, rebuilt, removed or decommissioned in, on, over, under, through or across any navigable water in Canada. The personal information collected is described in a personal information bank entitled **Navigation Protection Program** (bank number TC PPU 086). Under the provisions of the **Privacy Act**, individuals have the right of access to, correction of and protection of their personal information. Instructions for obtaining personal information are provided in Info Source, a copy of which is available in major public and academic libraries or online at <http://www.infosource.gc.ca>



Request for Review

A) Contact information

Name of Business/Company:

Public Services and Procurement Canada

Name of Proponent:

Karen Hill

Select additional contact:

Contractor/Agency/Consultant (if applicable):

Wade Sumners - M.Sc., P.Biol

Mailing address:

100-167 Lombard Avenue

Mailing address:

203 – 5 Donald Street

City/Town:

Winnipeg

City/Town:

Winnipeg

Province/Territory:

Manitoba

Province/Territory:

Manitoba

Postal Code:

R3B 0T6

Postal Code:

R3L 2T4

Tel. No. :

204-290-1274

Tel. No. :

204-942-6391

Fax No.:

(204) 983-4444

Fax No.:

Email:

Karen.hill@pwgsc-tpsgc.gc.ca

sumnersw@ae.ca

Is the Proponent the main/primary contact? Yes No

If no, please enter information for the primary contact or any additional contact.

Jeff O'Driscoll - PM - Associate Engineering - odriscollj@ae.ca



B) Description of Project

If your project has a title, please provide it.

West Side Quay Wall Rehabilitation St. Andrews Lock and Dam - Project No. R.097506.001

Is the project in response to an emergency circumstance*? Yes No

Does your project involve work in water? Yes No

If yes, is the work below the High Water Mark*? Yes No

What are you planning to do? Briefly describe all project components you are proposing in or near water.

Work includes repairs and modifications to retaining walls located along the west shore of the Red River immediately downstream of the St. Andrews Lock and Dam structures including: concrete removals; placement of aggregate materials, reinforcing steel and concrete, repairs to a rip-rap slope, installation of rock anchors, and site restoration activities.

How are you planning to do it? Briefly describe the construction materials, methods and equipment that you plan to use.

1. The Project area will be staked and the perimeter of the site will be fenced (silt fencing will be installed where required);
2. If required, a coffer dam, made of non-erodible material, will be placed along the portion of retaining wall, to prevent water from entering the active construction area. A screened pump will be utilized for de-watering and any seepage that may occur in the construction area. Extra pumps should be on site in the event of a pump malfunction. A fish salvage and relocation will take place and be monitored by a qualified professional. Water will be pumped into a well vegetated area and not directly back into the watercourse;
3. Excavated material will not be allowed to enter the water;
4. Any excavated stockpiling will be temporarily stored outside of the high water mark;
5. Silt fences will be installed to prevent erosion runoff from reaching the river during the work;
6. Clean rip rap will be placed, by hand, over top a geotextile fabric at the slope;
7. Site restoration includes backfilling, installation of concrete pavement, removing any rubbish, construction debris, equipment and temporary structures. All disturbed areas with bare soil must be sodded as soon as possible after its disturbance;
8. All the planned activities will take place within the existing footprint;
9. Disturbance to top soil may occur near the laydown area and away from the River; and
10. No discharges to the environment are planned or expected.

Include a site plan (figure/drawing) showing all project components in and near water.

Are details attached? Yes No

Identify which work categories apply to your project.

- | | |
|---|---|
| <input type="checkbox"/> Aquaculture Operations | <input type="checkbox"/> Log Handling / Dumps |
| <input type="checkbox"/> Aquatic Vegetation Removal | <input type="checkbox"/> Log Removal |
| <input type="checkbox"/> Beaches | <input type="checkbox"/> Moorings |
| <input type="checkbox"/> Berms | <input type="checkbox"/> Open Water Disposal |
| <input type="checkbox"/> Blasting / Explosives | <input type="checkbox"/> Piers |
| <input type="checkbox"/> Boat Houses | <input type="checkbox"/> Riparian Vegetation Removal |
| <input type="checkbox"/> Boat Launches / Ramps | <input type="checkbox"/> Seismic Work |
| <input type="checkbox"/> Breakwaters | <input checked="" type="checkbox"/> Shoreline Protection |
| <input type="checkbox"/> Bridges | <input type="checkbox"/> Stormwater Management Facilities |
| <input type="checkbox"/> Cable Crossings | <input type="checkbox"/> Surface Water Taking |
| <input type="checkbox"/> Causeways | <input type="checkbox"/> Tailings Impoundment Areas |
| <input type="checkbox"/> Culverts | <input type="checkbox"/> Temporary Structures |
| <input type="checkbox"/> Dams | <input type="checkbox"/> Turbines |
| <input type="checkbox"/> Dewatering / Pumping | <input type="checkbox"/> Water Control Structures |



- Docks
- Dredging / Excavation
- Dykes
- Fishways / Ladders
- Flow Modification (hydro)
- Groundwater Extraction
- Groynes
- Habitat Restoration
- Ice Bridges
- Water Intakes / Fish Screens
- Water Outfalls
- Watercourse Realignment
- Weirs
- Wharves
- Wind Power Structures

Other Please Specify lock repairs (retaining walls)

Was your project submitted for review to another federal or provincial department or agency? Yes No

If yes, indicate to whom and associated file number(s).

Transport Canada, Public Services and Procurement Canada, Manitoba Sustainable Development

C) Location of the Project

Coordinates of the proposed project Latitude 50 5' 6.93" N Longitude 96 56' 28.85" W

OR UTM zone ; Easting
 Northing

Include a map clearly indicating the location of the project as well as surrounding features.

Name of Nearest Community (City, Town, Village): Lockport, MB

Municipality, District, Township, County, Province:

Name of watershed (if applicable):

Name of watercourse(s) or waterbody(ies) near the proposed project: Red River

Provide detailed directions to access the project site:

the work will occur on the north side of a two-lane bridge that crosses over the dam (Highway 44) on the west side of the bank

D) Description of the Aquatic Environment

Identify the predominant type of aquatic habitat where the project will take place.

- Estuary (Estuarine)
- Lake (Lacustrine)
- On the bank/shore at the interface between land and water (Riparian)
- River or stream (Riverine)



- Salt water (Marine)
- Wetlands (Palustrine)

Provide a detailed description of biological and physical characteristics of the proposed project site.

The Project area is generally comprised of retaining walls, concrete decks, and a slope with rip rap. The River bottom near the Project area is comprised of a soft silt material . A fish ladder is present on the east side of the SALD structure to facilitate fish spawning and the migration of fish species. Due to the fish ladder, fish tend to congregate at the lock structure.

Include representative photos of affected area (including upstream and downstream area) and clearly identify the location of the project.

E) Potential Effects of the Proposed Project

Have you reviewed the Pathways of Effects (PoE) diagrams (<http://www.dfo-mpo.gc.ca/pnw-ppe/pathways-sequences/index-eng.html>) that describe the type of cause-effect relationships that apply to your project?

Yes No

If yes, select the PoEs that apply to your project.

- | | |
|--|--|
| <input type="checkbox"/> Addition or removal of aquatic vegetation | <input checked="" type="checkbox"/> Placement of material or structures in water |
| <input type="checkbox"/> Change in timing, duration and frequency of flow | <input type="checkbox"/> Riparian Planting |
| <input checked="" type="checkbox"/> Cleaning or maintenance of bridges or other structures | <input type="checkbox"/> Streamside livestock grazing |
| <input type="checkbox"/> Dredging | <input type="checkbox"/> Structure removal |
| <input type="checkbox"/> Excavation | <input type="checkbox"/> Use of explosives |
| <input type="checkbox"/> Fish passage issues | <input type="checkbox"/> Use of industrial equipment |
| <input type="checkbox"/> Grading | <input type="checkbox"/> Vegetation Clearing |
| <input type="checkbox"/> Marine seismic surveys | <input type="checkbox"/> Wastewater management |
| <input type="checkbox"/> Organic debris management | <input type="checkbox"/> Water extraction |
| <input type="checkbox"/> Placement of marine finfish aquaculture site | |

Will there be changes (i.e., alteration) in the fish habitat*? Yes No Unknown

If yes, provide description.

Will the fish habitat alteration be permanent*? Yes No Unknown

Is there likely to be destruction or loss of habitat used by fish? Yes No Unknown

What is the footprint (area in square meters) of your project that will take place below the high water mark*?

0 m2 - approx area of vertical wall where repairs will occur, there will be no overhang

Is your project likely to change water flows or water levels? Yes No Unknown

If your project includes withdrawing water, provide source, volume, rate and duration.

n/a



If your project includes water control structure, provide the % of flow reduction.

n/a

If your project includes discharge of water, provide source, volume and rate.

n/a

Will your project cause death of fish? Yes No Unknown

If yes, how many fish will be killed (for multi-year project, provide average)? What species and lifestages?

Are there aquatic species at risk (http://www.sararegistry.gc.ca/species/aquatic_e.cfm) present? If yes, which ones?

Silver Chub (*Macrhybopsis storeriana*), Carmine shiner (*Notropis percobromus*), Chestnut lamprey (*Ichthyomyzon castaneus*), Mapleleaf Mussel (*Quadrula quadrula*)

What is the time frame of your project?

The construction will start on 09/01/2019 and end by 11/30/2019

If applicable, the operation will start on MM/DD/YYYY and end by MM/DD/YYYY

If applicable, provide schedule for the maintenance

as required

If applicable, provide schedule for decommissioning

n/a

Are there additional effects to fish and fish habitat that will happen outside of the time periods identified above? Yes No

(If yes, provide details)

Have you considered and incorporated all options for redesigning and relocating your project to avoid negative effects to fish and fish habitat?

Yes No

If yes, describe.

Since it is repair work that has no expansion of the existing footprint, relocating is not an option. The method chosen with coffer dam installation, should provide the least impact to fish and wetland habitats.

Have you consulted DFO's Measures to Avoid Harm to Fish and Fish Habitat (<http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html>) to determine which measures apply to your project?

Yes No

Will you be incorporating applicable measures into your project? Yes No



If yes, identify which ones. If No, identify which ones and provide reasons.

Timing Windows -April 1 to June 30 for this location; site selection such as design and plan activities and works in waterbody such that loss or disturbance to aquatic habitat is minimized and sensitive spawning habitats are avoided; spill management; erosion and sediment control including water management, site isolation, temporary and permanent erosion and sediment control; site restoration; fish protection such as fish capture and relocation; proper operation of machinery including clean machinery, machinery operating from a stable work area, and small footprint area.

Have you considered and incorporated additional best practices and mitigation measures recommended in relevant guidelines to avoid negative effects to fish and fish habitat?

No Yes

If Yes, include a list of the guidelines being used to avoid negative effects to fish and fish habitat.

Minimal footprint, proper temporary stockpile placement away from aquatic environment, isolating work area from aquatic environment and construction area with proper placement and construction of non-earthen coffer dams, maintaining downstream flows, directing flows into a vegetated buffer area, not back directly into watercourse, clean rip rap, any new fill material will be obtained from offsite and not from below the average high water level of any watercourse, temporary and permanent erosion and sediment control, all areas disturbed as a result of work activities will be stabilized and revegetated as required upon completion of Work and restored to a pre-disturbed state or better, all construction debris and other materials in the channel will be removed immediately after completion of the work and placed in an area where they cannot enter any watercourse, no fueling or fuel storage Within 100 meters of aquatic environment.

Are there any relevant best practices or mitigation measures that you are unable to incorporate? Yes No

(If yes, identify which ones.)

[Empty text box for identifying best practices or mitigation measures that cannot be incorporated.]

Can you follow appropriate Timing Windows (<http://www.dfo-mpo.gc.ca/prw-ppe/timing-periodes/index-eng.html>) for all your project activities below the High Water Mark*?

Yes No

(If no, provide explanations.)

[Empty text box for providing explanations if the answer is No.]

What residual effects to fish and fish habitat do you foresee after taking into account the avoidance and mitigation measures described above?

none



F) Signature

I, (print name) certify that the information given on this form is to the best of my knowledge, correct and completed.


Signature

Date

Information about the above-noted proposed work or undertaking is collected by DFO under the authority of the *Fisheries Act* for the purpose of administering the fisheries protection provisions of the *Fisheries Act*. Personal information will be protected under the provisions of the *Privacy Act* and will be stored in the Personal Information Bank DFO-PPU-680. Under the *Privacy Act*, Individuals have a right to, and on request shall be given access to any personal information about them contained in a personal information bank. Instructions for obtaining personal information are contained in the Government of Canada's Info Source publications available at www.infosource.gc.ca or in Government of Canada offices. Information other than "personal" information may be accessible or protected as required by the provision of the *Access to Information Act*.

**All definitions are provided in Section G of the Guidance on Submitting a Request for Review*

From: Murray, Colin (SD) <Colin.Murray@gov.mb.ca>
Sent: Thursday, May 30, 2019 12:36 PM
To: Wade Sumners
Subject: Data request W Sumners Associated Eng SK 20190510 West side quay wall rehab st andrew

Hi Wade

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's (CDC) rare species database for your area of interest. This includes the primary location as defined in the request; and a one kilometer radius buffer from the edge of a point location.

The search resulted in the following occurrences:

Within 1km of the point location:

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Vertebrate Animal	Ichthyomyzon castaneus	(Chestnut Lamprey)	S3	NA	Special Concern	NA
Vertebrate Animal	Macrhybopsis storeriana	(Silver Chub)	S5	NA	NA	NA

Special Conservation Area for the American White Pelican located on the east side of the river immediately below the docks.

Vertebrate Animal	Pelecanus erythrorhynchos	(American White Pelican)	S4B	NA	NA	NA
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General area records low locational accuracy:

NA

Found in broader area and similar habitat:

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Invertebrate Animal	Quadrula quadrula	(Mapleleaf Mussel)	S1	Endangered	Endangered	Endangered

Further information on this ranking system can be found on our website at: <http://www.natureserve.org/conservation-tools/conservation-status-assessment>.

These designations can be found at:

<http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php>,

<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html> and

<http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1>.

Manitoba's recommended setback distances can be found at: https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf.

The information provided in this letter is based on existing data known to the Manitoba CDC of the Wildlife and Fisheries Branch at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. **An absence of data does not confirm the absence of any rare or endangered species.** Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern nor should it substitute for on-site surveys for species or environmental assessments. Also, because our Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilised.

Third party requests for products wholly or partially derived from the Biotics database must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using data from our database, as the Manitoba Conservation Data Centre; Wildlife and Fisheries Branch, Manitoba Sustainable Development.

This letter is for information purposes only - it does not constitute consent or approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information contact me directly at (204) 945-7760.

Colin

Reference screen clip:



Colin Murray
Information Manager
Manitoba Conservation Data Centre
Wildlife and Fisheries Branch
Department of Sustainable Development

200 Saulteaux Crescent
Winnipeg, Manitoba, R3J3W3
204-945-7760
colin.murray@gov.mb.ca
<http://www.gov.mb.ca/sd/cdc/index.html>



-----Original Message-----

From: +WPG969 - Form Submissions (FIN) <noreply@gov.mb.ca>
Sent: May-10-19 12:13 PM
To: Murray, Colin (SD) <Colin.Murray@gov.mb.ca>
Subject: WWW Form Submission

Below is the result of your feedback form. It was submitted by CDC Information Request () on Friday, May 10, 2019 at 12:13:02

DocumentID: Manitoba_Sustainable_Development

Project Title: West Side Quay Wall Rehabilitation St. Andrews Lock and Dam

Date Needed: 2019/05/14

Name: Wade Sumners

Company/Organization: Associated Engineering (Sask)

Address: 203 â€ 5 Donald Street

City: Winnipeg

Province/State: Manitoba

Phone: 204-942-6391

Email: sumnersw@ae.ca

Project Description: Work includes repairs and modifications to retaining walls located along the west shore of the Red River immediately downstream of the St. Andrews Lock and Dam structures including: concrete removals; placement of aggregate materials, reinforcing steel and concrete, repairs to a rip-rap slope, installation of rock anchors, and site restoration activities.

Information Requested: protected species list within 1 km of the site

Format Requested: email

Location: 19 km north of Winnipeg along the Red River, on the north side of a two-lane bridge that crosses over the dam (Highway 44) on the west side of the bank - a map of the area will be emailed to colin murray

action: Submit

From: Webb, Bruce (SD) [<mailto:Bruce.Webb@gov.mb.ca>]
Sent: Wednesday, June 05, 2019 3:48 PM
To: Jeff O'Driscoll <odriscollj@ae.ca>
Cc: Tracey Kucheravy <kucheravyt@ae.ca>; Wade Sumners <sumnersw@ae.ca>
Subject: RE: repairs at St Andrew Lock and Dam (SALD)

Thanks! Sounds good. PWGSC (Karen Hill) just asked about the need for a Live Fish Handling Permit for salvaging fish from inside cofferdammed areas. It would likely be needed, so I put her in contact with Lauren Janusz from the Wildlife and Fisheries Branch. Lauren handles those permits.

Bruce.

From: Jeff O'Driscoll <odriscollj@ae.ca>
Sent: June-05-19 11:01 AM
To: Webb, Bruce (SD) <Bruce.Webb@gov.mb.ca>
Cc: Tracey Kucheravy <kucheravyt@ae.ca>; Jeff O'Driscoll <odriscollj@ae.ca>; Wade Sumners <sumnersw@ae.ca>
Subject: RE: repairs at St Andrew Lock and Dam (SALD)

Bruce,

Not sure if anyone responded, but the work is proposed for this September though November this year.

Jeff O'Driscoll, P.Eng., IRP
Division Manager, Infrastructure
203 - Number Five Donald Street, Winnipeg, MB R3L 2T4
Tel: 204.942.6391 | Cel: 204.791.6783



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From: Webb, Bruce (SD) [<mailto:Bruce.Webb@gov.mb.ca>]
Sent: Thursday, May 30, 2019 9:46 AM
To: Wade Sumners <sumnersw@ae.ca>
Cc: Tracey Kucheravy <kucheravyt@ae.ca>; Jeff O'Driscoll <odriscollj@ae.ca>
Subject: RE: repairs at St Andrew Lock and Dam (SALD)

Hi! I apologise for the delay in replying...

I think if you send me the EEE after it has been reviewed, that should be all I need. In the 1990s we licenced extensive repairs to the dam that involved significant cofferdamming, but the scale of this project is very small in comparison. The in-water work will be the component of relevance to us, so that is what our review would focus on. It's a small footprint, and I doubt we'll have concerns. Is the work planned for winter or summer?

Bruce.

Bruce Webb, P. Eng.
Water Development and Control Assessment Officer

Environmental Approvals Branch
Manitoba Sustainable Development
1007 Century Street
Winnipeg MB R3H 0W4

Tel: (204) 945-7021
Fax: (204) 945-5229
e-mail: bruce.webb@gov.mb.ca

From: Wade Sumners <sumnersw@ae.ca>
Sent: May-23-19 2:39 PM
To: Webb, Bruce (SD) <Bruce.Webb@gov.mb.ca>
Cc: Tracey Kucheravy <kucheravyt@ae.ca>; Jeff O'Driscoll <odriscollj@ae.ca>
Subject: FW: repairs at St Andrew Lock and Dam (SALD)

Hi Bruce, as we discussed, the company I work with (Associated Engineering) been tasked by Public Works and Govt Services Can to provide repairs and modifications to existing retaining walls located along the west shore of the Red River immediately downstream of the St. Andrews Lock and Dam structures in Lockport, MB. Tasks would include concrete removals, placement of new subdrain and aggregate materials, reinforcing steel and concrete, repairs to a rip-rap slope, installation of rock anchors, and site restoration activities. This work may require a dry isolation which will likely be completed with a coffer dam.

As well, I do believe the repairs will occur on Federal Lands and there will no expansion of the existing footprint but it will take place below the high water mark.

We have an existing Environmental Assessment Screening Report that was completed by Karen Hill at Public Works in 2011 that describes the area. It was completed for repairs to a west slope and I intended on using relevant info to complete an Environmental Effects Evaluation (EEE) for the work described above and will submit it to Public Services and Procurement Canada. We can share the EEE with you once our client has reviewed it.

As part of our scope of work, we were to contact Provincial authorities and I was wondering what information you need from us to provide a notification of the work? Or whether you would need to complete a review of the project. Please feel free to call me to discuss this project or a reply to this email with your requirements, would be appreciated.

Wade Sumners, M.Sc., P.Biol.

Senior Biologist

Associated Environmental Consultants Inc.

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.653.4969 | Cel: 306.850.2976 | Dir: 306.653.4969.(ext.5332)



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From: Jeff O'Driscoll
Sent: Friday, June 21, 2019 11:53 AM
To: NPP PNR / PPN RPN (TC) <TC.NPPPNR-PPNRPN.TC@tc.gc.ca>
Cc: Wade Sumners <sumnersw@ae.ca>; Jeff O'Driscoll <odriscollj@ae.ca>; Michael Steinborn <Michael.Steinborn@pwgsc-tpsgc.gc.ca>
Subject: RE: NPP file 2015-600032 - Request for Information - SALD Repairs

As requested, please find attached drawing detailing cofferdam/ isolation works.

Please contact myself or Wade Sumners if there are any questions.

Regards,

Jeff O'Driscoll, P.Eng., IRP
Division Manager, Infrastructure
203 - Number Five Donald Street, Winnipeg, MB R3L 2T4
Tel: 204.942.6391 | Cel: 204.791.6783



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From: NPP PNR / PPN RPN (TC) [<mailto:TC.NPPPNR-PPNRPN.TC@tc.gc.ca>]
Sent: Wednesday, June 19, 2019 2:54 PM
To: Wade Sumners <sumnersw@ae.ca>
Cc: Jeff O'Driscoll <odriscollj@ae.ca>
Subject: NPP file 2015-600032 - Request for Information - SALD Repairs

Hello Wade Sumners,

We are currently reviewing your Notice of Work submission for the repairs to the lock wall on the downstream approaches (west side quay). We require the drawings for the cofferdam/ isolation works so that we can determine the level of impact to navigation and any safety mitigation marking that may be required. Please provide scaled dimensioned drawings of the cofferdams, plan and profile view.

Regards,

Navigation Protection Program, Prairie and Northern Region
Transport Canada / Government of Canada
TC.NPPPNR-PPNRPN.TC@tc.gc.ca / Tel : 780-495-8215 / TTY : 1-888-675-6863

Programme de Protection de la Navigation, Région des Prairies et du Nord
Transports Canada / Gouvernement du Canada
TC.NPPPNR-PPNRPN.TC@tc.gc.ca / Tél : 780-495-8215 / ATS : 1-888-675-6863

Please refer to our website for updated forms and guidance material :
<http://www.tc.gc.ca/eng/programs-621.html>

From: Wade Sumners [<mailto:sumnersw@ae.ca>]
Sent: Thursday, June 06, 2019 12:59 PM
To: NPP PNR / PPN RPN (TC) <TC.NPPPNR-PPNRPN.TC@tc.gc.ca>
Cc: Jeff O'Driscoll <odriscollj@ae.ca>
Subject: Notice of Works Form - SALD repairs

Hi there, please see the attached for your review. And please contact me directly if you have any questions.

Wade Sumners, M.Sc., P.Biol.

Senior Biologist

Associated Environmental Consultants Inc.

1 - 2225 Northridge Drive, Saskatoon, SK S7L 6X6

Tel: 306.653.4969 | Cel: 306.850.2976 | Dir: 306.653.4969.(ext.5332)



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Navigation Protection Program
1100 9700 Jasper Avenue
Edmonton Alberta T5J 4E6

Your file
R.097506.001
Our file
2015-600032-002

August 25, 2019

Public Services & Procurement Canada
100-167 Lombard Avenue
Winnipeg, MB R3B 0T6

Attention: Karen Hill

RE: Notice to the Minister under the *Navigation Protection Act* for repairs and modifications to retaining walls at St Andrews Lock and Dam, located on the Red River at approximately 50° 05' 6.93" N x 96° 56' 28.85" W, Lockport, in the Province of Manitoba

The Minister of Transport has determined that your work is not likely to substantially interfere with navigation.

Therefore, your work is permitted under section 9(1) – Repairing of the *Navigation Protection Act* (NPA), and you may proceed pursuant to the attached plan G1 in accordance with the following terms and conditions:

1. Signs stating "Construction Ahead" shall:
 - Be placed and maintained on the west shore 50 metres upstream and downstream of the work during all periods of in-stream activity;
 - Display black lettering on a yellow background;
 - Be legible from a minimum distance of 50 metres.
2. The perimeter of the coffer dam/ sediment control barrier zone shall:
 - Be marked with yellow flashing lights located on each end of the works and on any other location on the works so that the lights are spaced not more than 5 m apart.
3. Temporary works located outside the coffer dam/ sediment control barrier zone shall:
 - be marked with yellow flashing lights located on each end of the works and on any other location on the works so that the lights are spaced not more than 5 m apart.
4. All temporary works must be removed immediately upon completion of the repairs.
5. A starboard hand buoy (red) must be placed at the upstream and downstream end of the temporary works.
6. Repairs and construction activities shall not interfere with normal navigation traffic and lock operations during regular operational hours.
7. The Minister or his representatives must be allowed unimpeded access to any site related to the project for inspection and/or monitoring purposes.

Please note that permission relates only to the effect of your work on navigation under the NPA. It is the owner's responsibility to comply with any other applicable laws and regulations. It does not grant any rights related to the ownership of the bed of the waterway.

The NPA, amongst other obligations, requires the owner to immediately notify the Minister if his work causes or is likely to cause serious or imminent danger to navigation and take reasonable measures to remediate the danger to navigation (section 12 of the NPA).

Should you have any questions, please do not hesitate to contact our office by phone at (780) 495-8215 or by e-mail at TC.NPPNR-PPNRPN.TC@tc.gc.ca.

Respectfully,

Laura Jones
Navigation Protection Program Officer
Programs Group
Transport Canada
Prairie and Northern Region

Attachment: Plan G1

cc: Associated Engineering Limited



PURPOSE OF PROJECT:

THE ST. ANDREWS LOCK & DAM (SALD) FACILITY, LOCATED IN LOCKPORT, MANITOBA, WAS CONSTRUCTED IN THE EARLY 20TH CENTURY TO FACILITATE COMMERCIAL NAVIGATION FROM LAKE WINNIPEG TO THE CITY OF WINNIPEG BY DROWNING THE LISTER RAPIDS DURING THE NAVIGATIONAL SEASON. THE FACILITY IS OPERATED AND MAINTAINED BY PUBLIC SERVICES AND PROCUREMENT CANADA (PSPC) AND CONSISTS OF A DAM, A NAVIGATION LOCK, A FISH LADDER, AND A TWO-LANE TRAFFIC BRIDGE. THE FACILITY IS RECOGNIZED AS A NATIONAL HISTORIC SITE BY THE HISTORIC SITES AND MONUMENTS BOARD OF CANADA, AS WELL AS THE MANITOBA HISTORICAL SOCIETY.

AN INVESTIGATION AND ASSESSMENT OF THE EXISTING RETAINING WALLS IDENTIFIED THREE RETAINING WALLS THAT REQUIRE REPAIR AND MODIFICATION:

WALL A - IS A SECTION OF THE WEST CHANNEL WALL LOCATED DOWNSTREAM FROM THE LOCK. THE WALL IS CRACKED/BULGED AT ONE LOCATION, WHICH INDICATES POTENTIAL ROTATIONAL MOVEMENT AND INSTABILITY OF THE WALL. PREVIOUS REPAIRS TO THE WALL AND THE DECK BEHIND IT WERE COMPLETED IN 1985 AND SIX VERTICAL GROUND ANCHORS WERE INSTALLED IN 2005.

WALL B - IS A SHORT RETAINING WALL ORIENTED PERPENDICULAR TO AND LOCATED AT THE SOUTH END OF WALL A. THE WALL IS CRACKED AT ONE LOCATION, WHICH INDICATES POTENTIAL SETTLEMENT AND/OR ROTATIONAL MOVEMENT AND INSTABILITY OF THE WALL. REPAIRS TO WALL B WERE ALSO COMPLETED IN 1985 IN CONJUNCTION WITH THE REPAIRS TO WALL A.

WALL C - IS A SECTION OF GROUTED RIP-RAP SLOPE THAT RUNS PARALLEL TO WALL A AND IS LOCATED AT THE BASE OF THE ROADWAY EMBANKMENT SLOPE. THE GROUT RECEIVES REGULAR REPOINTING AS PART OF ONGOING MAINTENANCE OF THE STRUCTURE AND GROUNDS.

LOCATION:

LATITUDE AND LONGITUDE

50° 5' 2.20" N
 96° 56' 29.43" W

UTM COORDINATES - TEMPORARY BENCH MARK

TMB: ELEV. 224.517
 NAILED IN CONCRETE
 NORTHING: 5550060.205
 EASTING: 647273.246
 UTM ZONE: 14N

PROPOSED SCHEDULE:

TENTATIVE: FALL 2019 TO WINTER 2019

SCOPE OF WORK:

WALL A - CONCRETE RETAINING WALL REPAIRS

1. REMOVE AND REINSTALL EXISTING RAILING/FENCING, ACCESS LADDER, MOORING BOLLARDS AND BOAT ANCHORS WHERE REQUIRED.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. REMOVE EXISTING CONCRETE RETAINING WALL.
4. INSTALL NEW CONCRETE RETAINING WALL.
5. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.

WALL B - CONCRETE RETAINING WALL REPAIRS

1. REMOVE AND REINSTALL EXISTING RAILING.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. REMOVE EXISTING CONCRETE RETAINING WALL.
4. INSTALL NEW CONCRETE FOOTING AND PAVEMENT.
5. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.

SLOPE PAVING RE-POINTING

1. REMOVE EXISTING LOOSE GROUT BETWEEN RIP RAP.
2. RIP RAP REPAIRS
3. NEW POINTING OF RIP RAP.

WALL A - CONCRETE RETAINING WALL MODIFICATIONS

1. REMOVE AND REINSTALL EXISTING RAILING/FENCING, ACCESS LADDER, AND MOORING BOLLARDS WHERE REQUIRED.
2. REMOVE EXISTING CONCRETE PAVEMENT AND FILL TO EXPOSE EXISTING CONCRETE RETAINING WALL.
3. INSTALL NEW DRAINAGE PIPE.
4. INSTALL NEW COMPACTED FILL AND CONCRETE PAVEMENT.
5. INSTALL NEW DYWIDAG ROCK ANCHORS.

Revision	Description	Date
0	ISSUED FOR ENVIRONMENTAL REVIEW	20190920

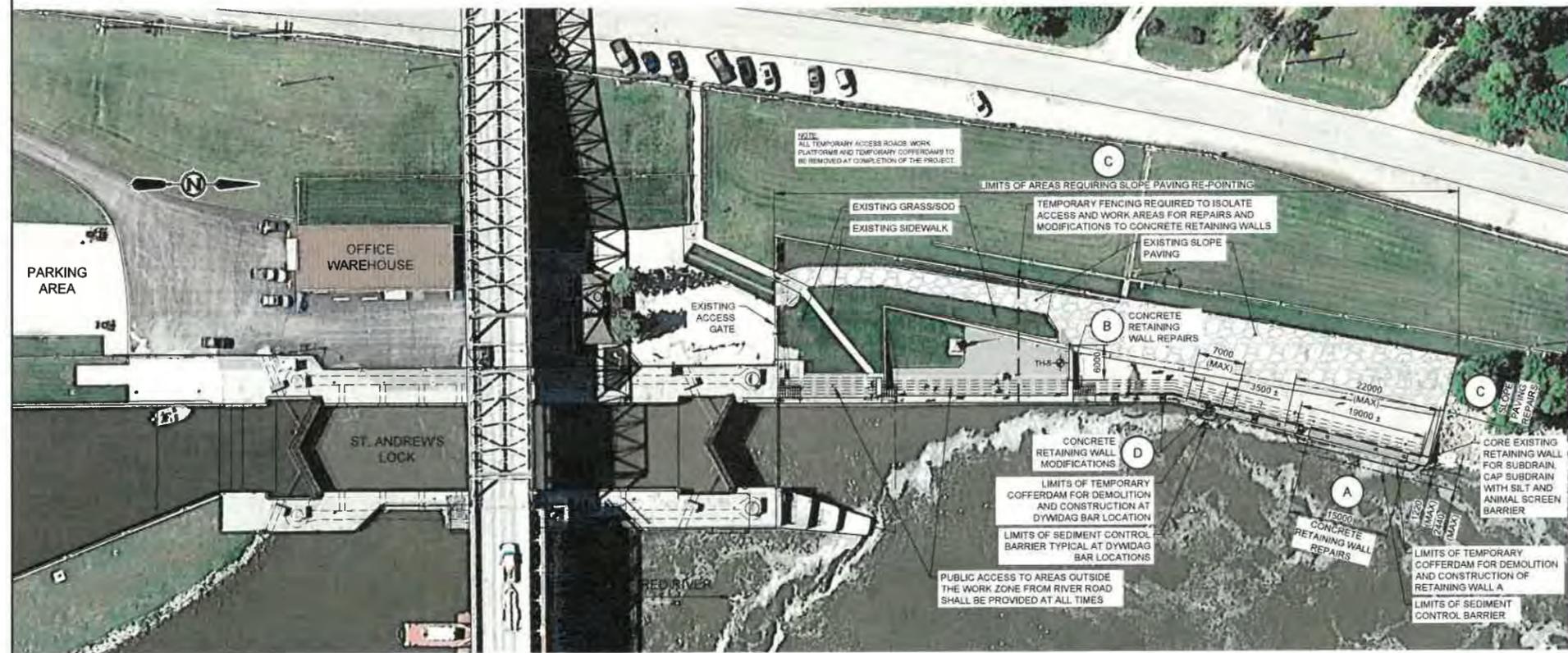
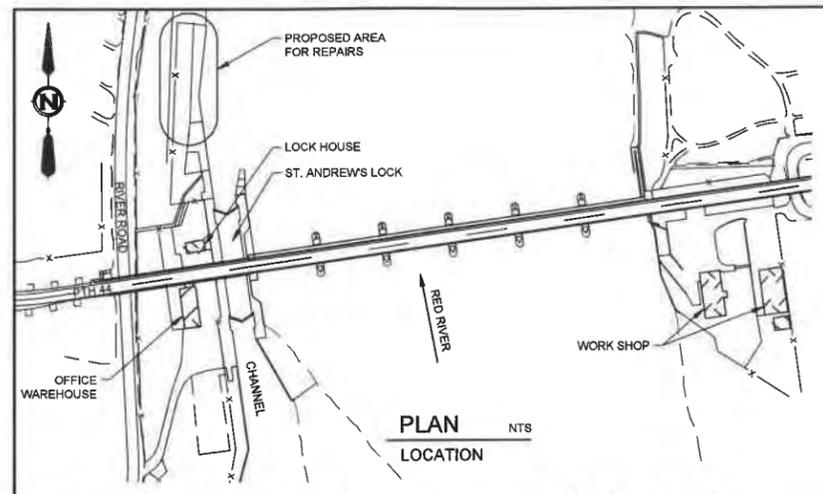
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
 ST. ANDREWS LOCK & DAM LOCKPORT, MANITOBA

WEST SIDE QUAY WALL REHABILITATION

Designed by G. SARAZIN	Conçu par
Drawn by T. KUCHERAVY	Dessiné par
Approved by W. SUMMERS	Approuvé par
PRISC Project Manager B. JAKARAN	Administrateur de Projets TPSGC
Drawing Site	Titre du dessin

PROPOSED PROJECT PLAN
 SUBMITTED FOR
 ENVIRONMENTAL REVIEW

Project no./No. du projet	Drawing no./No. du dessin	Revision no.
R.097506.001	G01	0



PLAN SITE OVERALL



VIEW LOOKING NORTH-WEST AT RETAINING WALL



VIEW LOOKING SOUTH



VIEW LOOKING NORTH ALONG RETAINING WALL

8200-2015-600032-002

Reviewed / Examiné

Page 1 of 1

AUG 26 2019

By/par: *[Signature]*
LAURA JONES
 Navigation Protection Program /
 Programme de protection de la navigation