



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

Regional Manager/Real Property
Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario

**LETTER OF INTEREST
LETTRE D'INTÉRÊT**

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Regional Manager/Real Property Contracting/PWGSC
Ontario Region, Tendering Office
12th Floor, 4900 Yonge Street
Toronto, Ontario
M2N 6A6
Ontario

Title - Sujet Cofferdam Industry Engagement Day	
Solicitation No. - N° de l'invitation EQ754-191107/A	Date 2018-08-13
Client Reference No. - N° de référence du client R.076951.002	GETS Ref. No. - N° de réf. de SEAG PW-\$PWL-037-2392
File No. - N° de dossier PWL-8-41053 (037)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-08-30	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Dhillon, Ambreen	Buyer Id - Id de l'acheteur pwl037
Telephone No. - N° de téléphone (416) 590-8253 ()	FAX No. - N° de FAX (416) 512-5862
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PWGSC/TPSGC Joseph Shepard Building 4900 Yonge Street Toronto, ON M2N 6A6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

1 Project Requirements

1.1 General

PSPC has partnered with Parks Canada Agency (PCA) to deliver an infrastructure project on the Trent-Severn Waterway (TSW). The objective of the project is to improve the structural integrity and public safety on the waterway while promoting visitor experience. PSPC wishes to engage with the industry to ensure an effective approach is taken for temporary installations necessary to perform in-water works at various sites along the waterway, specifically the installation of coffer dams and/or other means to allow the rehabilitation work to proceed within the project constraints.

A one-day workshop will be scheduled on August 30 2018 in Peterborough, Ontario to present the project requirements and get input from the industry as to the in-water work options and most effective strategy. The workshop will be attended by PSPC, the Design Consultants and the Construction Managers representatives prepared to discuss specific site conditions, constraints and requirements, present documentation including reports and construction documents and review possible options to facilitate in-water works.

This Industry Engagement Day session is open to all interested suppliers and associations in this industry. This Industry Engagement Day is not a call for Tenders or a Request for Proposal. The description of the Industry Engagement process is described below. No agreement to contract will be entered into, with any person or entity, based solely on this Letter of Interest. The issuance of this Letter of Interest is not to be considered in any way a commitment by the Government of Canada or as authority to potential participants to undertake any work, which could be charged to Canada. This Letter of Interest is not to be considered as a commitment to issue a Request for Proposal or award contract(s) for these projects.

Participation in this Letter of Interest is encouraged, but is not mandatory. There will be no short-listing of potential suppliers for the purposes of undertaking any future work as a result of this Letter of Interest. Participation in this Letter of Interest is not a condition or prerequisite for the participation in any potential subsequent solicitation.

Respondents will not be reimbursed for any cost incurred by participating in this Letter of Interest.

1.2 Background

The Trent-Severn Waterway (TSW) meanders 386 km along Central Ontario and consists of many locks, bridges and dams. Constructed between 1833 and 1920, the Trent-Severn Waterway was declared a National Historic Site in 1929. It commemorates Canada's history of canal construction and the importance of the canal system throughout this country's history. This heritage corridor is enjoyed by more than 1.5 million land and water based visitors every year.

After nearly 100 years, the original waterway mandate of navigation is now challenged to meet the widely varying needs and expectations of modern stakeholders. As a national

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historic site, the waterway must be managed for the protection and presentation of nationally significant cultural resources. Government agencies and environmental organizations expect the system to be managed to provide for the protection of natural values including species at risk; while business organizations and individual business owners strive for contributions to the economic well-being of the area. Municipalities, cottagers and shoreline owners expect it to contribute to the quality of their lifestyles and recreational interests, while ensuring water supplies of adequate quality and quantity.

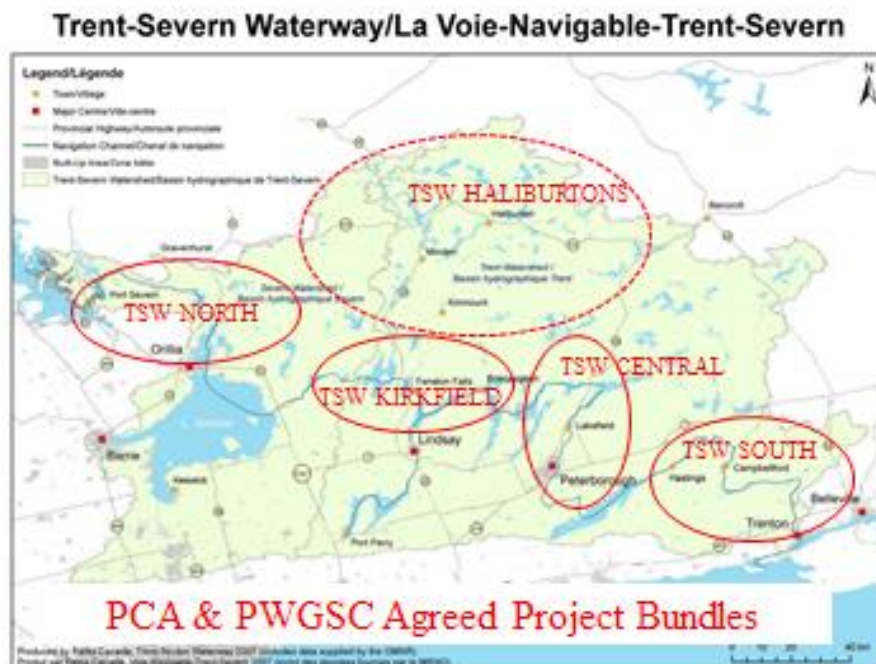
The Central Ontario Field Unit (COFU) of Parks Canada Agency owns and operates, on behalf of Canada, the TSW that extends from the Bay of Quinte on Lake Ontario at the City of Quinte West (Trenton) to Port Severn in the north; located to the south of Georgian Bay (Lake Huron). The waterway traverses two major watersheds, the Trent River Watershed and the Severn River Watershed. The Trent River basin, which drains more than 12,000 km², encompasses some 218 lakes in the Haliburton Highlands region, 47 of which are directly controlled by the TSW. Water from these lakes flows south along either the Gull River, Burnt River, Nogies Creek, Mississagua River, Eels Creek or Jack Creek systems into the Kawartha Lakes. The Kawarthas drain down the Otonabee River into Rice Lake and on to Trenton on Lake Ontario via the Trent River. The Crowe River drains the eastern-most lakes in the Trent Watershed. Lake Scugog drains northward from the Oak Ridges Moraine to Sturgeon Lake. The neighbouring Severn River basin drains an area just over 6,000 km². Included in this watershed are the Canal Lake - Talbot River system, the Holland River, the Lake Simcoe - Couchiching basin, the Black River and the channels of the Severn River below the hamlet of Washago.

The water levels and flows on the waterway are managed by 143 dams which are owned and operated by the COFU of Parks Canada Agency. Of the 143 dams, 100 are located on the Trent River Watershed, including 47 dams and water retaining structures in the Haliburton sub-watershed to control various reservoir lakes and rivers feeding the waterway. The remaining 43 dams and water retaining structures associated with the waterway are located in the Severn River Watershed.

1.3 Project Delivery

The projects along the TSW include a whole range of different types of projects, from bridge repair, lock rehabilitations, earthwork refurbishing to dam replacement. The project has been subdivided into four geographical groupings, South, Central, Kirkfield and North Bundles each with a number of sites.

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- The TSW South Bundle includes concrete repair work in Trenton, Glen Ross, and other areas; Dam rehabilitation in Glenn Miller area; and some mechanical system modernization in Campbellford and Crowe Bay areas.
- The TSW Centre Bundle is generally around the city of Peterborough. The major projects include at least two dam replacement projects and major work in the Peterborough Lift Lock as well as some other minor concrete repair work.
- The TSW Kawartha Bundle includes mainly concrete rehabilitation work and a major dam replacement in Burleigh Falls.
- The TSW North Bundle is relatively smaller when compared with the previous three areas. One major project is the possible replacement and/or major rehab work for Pretty Channel Dam at Lock #44.
- There is also a fifth area referenced as the TSW Halliburton area. However, these projects are relatively small, and most of these will be delivered by PCA internal staff.

Complexities of this work is the need for large staging areas; construction of coffer dams and diversion system and/or other strategies to allow for in-water access during construction; protection of the environment as well as neighbouring tourism industry and other related business in the area.

In order to achieve the project objectives PSPC has engaged the services of a number of Design Consultants to undertake investigations, define the extent of the work, design the final installations and prepare construction documentation. PSPC has also retained

Construction Managers for each of the four Bundles to provide construction related advice during design, procurement of subcontractors to undertake the Work and act as General Contractor and Constructor during the Work.

All site work will be undertaken under the authority of the Construction Manager. The Construction Manager will retain subcontractors as required to complete the work including temporary protection for in-water works such as coffer dams. The work will be publically tendered once design of the permanent installations is complete. Cofferdam design, installation, operations, maintenance and removal may be packaged separately for each site per Bundle however the Construction Manager(s) may choose to combine sites if determined to be more effective.

1.4 Constraints

There are a number of challenges associated with the Work in addition to cost and time constraints including:

1. The Work being undertaken on a navigable public waterway normally operational between the middle of May to the end of October;
2. There are significant implications and construction restrictions associated with the waterway navigational, operation and maintenance requirements;
3. Much of the Work being undertaken with the public being immediately at hand as waterway users and owners/operators of adjacent properties;
4. Public safety;
5. Heritage nature of the various structures;
6. The project is to be implemented in an environmentally responsible manner using recognized strategies to minimize the environmental impact of the Work.
7. In-water and close-to-water activity restrictions are significant including:
 - a. Compliance with Ministry of Natural Resources (MNR) guidelines, “*Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat*”, which limits shoreline disturbance affecting aquatic wild life. Work in the water is restricted between March 15 and July 15 yearly;
 - b. Fish spawning activities may need to be accommodated for in-water work construction;
 - c. Potential for disturbing species at risk;
8. The number of potential stakeholders extending beyond the immediate area of the work, both upstream and downstream;
9. Potential for significant environmental impact including risk of excessive waterway drainage and possible flooding;

10. Restricted site access and local traffic impedence to large equipment and construction traffic. It may be necessary to get access through adjacent private property;
11. Restricted laydown areas for site facilities, equipment, materials and supplies;
12. Work will be impacted by weather conditions and may be severely curtailed during winter freeze and spring thaw; and
13. Some of the Work may be subject to aboriginal interest.

1.5 Environmental Assessments (EA)

Environmental stewardship of the project includes exploring the opportunities available to reduce the environmental impact of the project, operations and maintenance, and improve the nearby aquatic and terrestrial environment.

An Environmental Assessment will be undertaken by PCA for each active site and the EA report will be made available to all stakeholders. Design and construction is to be compliant with the final EA reports.

1.5.1 Species at Risk

The Ontario Ministry of Natural Resources (MNR) determines an allowable range of flow rates in April/May to support fish spawning run along the waterway. The waterway authority is obliged to maintain on a “best efforts” basis the established water level target ranges from the beginning of spawning to the conclusion of egg incubation period.

Department of Fisheries and Oceans review and Ministry of Natural Resources of Ontario work permits may be required to perform some of the Work.

1.6 Operations

1.6.1 Navigation

Operations at the dams are typically limited to the navigation season of May to October to provide a minimum draft of 1.8 m for navigational requirements.

Water levels are controlled along the waterway gradually lowered in the fall following navigation to accommodate snowmelt. This lowering is achieved by removing the stop logs at strategic dams. During the spring melt, stop logs are reset based on depth of flow over the stop log. The amount of spring runoff is assessed using snow pack information collected in the area. Sufficient runoff must be captured to bring the waterway up to the operating level for the navigation season.

In order to ensure continuity of operations the construction of elements below lake level are to be undertaken ‘in the dry’ to the extent possible while maintaining a discharge capacity to assure the effective and safe water management.

1.6.2 Flood Control

A key objective of this project is to provide an effective water management and enhanced safety for people, and protection of property along the waterway. The project is to be delivered while maintaining, at all times, a discharge capacity to ensure the water management in a safe manner. Management of the operational facilities at the work site as well as any upstream and downstream adjustments will remain with PCA.

1.6.3 Site Investigation Reports

Extensive site studies and investigations during Requirement Analysis phase including Dam Safety Reviews, Aerial Imagery, Water Level Records, Water Management Studies, Hydrometeorological Conditions Studies, Geotechnical and Bathymetry Studies and Analysis, and Landscape Study.

2 Project Administration

2.1 Roles and Responsibilities

2.1.1 Public Services and Procurement Canada

PSPC administers the project on behalf of Canada and exercises continuing control over the project during all phases of development. This project is to be organized, managed and implemented in a collaborative manner. Under the leadership of the Departmental Representative, all team members are responsible for establishing and maintaining a professional and cordial relationship.

2.1.1.1 Departmental Representative

The PSPC Project Manager assigned to the project is the Departmental Representative (DR). The DR is the overall Project Technical Authority, providing direction in all project matters. The DR will coordinate with the Design/Prime Consultant, the Construction Manager, the Project Team, the technical Resource Team and PCA to ensure the Project Team is provided with all required information in a timely manner.

2.1.2 Client Department

Parks Canada Agency (PCA) is the Client Department for this project, and will participate and provide input to deliverable reviews and acceptance processes. PCA will work closely with the Departmental Representative to define the project requirements, facilitate access to the site and support the Project Team.

2.2 Design and Prime Consultants

Design and Prime Consultants have been retained directly by PSPC to undertake investigations, define the extent of the work, design the final installations and prepare construction documentation and attend the site to verify that construction proceeds and is complete in accordance to design intent. The Design Consultants will provide design services only whereas the Prime Consultants may provide design services as well as PSPC support during construction including administrative support and design compliance verification.

PSPC reserves the right to re-assign and/or retain additional Design and Prime Consultants as may be required to effectively deliver the project.

2.3 Construction Managers

Construction Managers have been retained directly by PSPC for each of the four Bundles to provide services to PSPC as follows:

1. Subject Matter Expert – constructability feedback, and construction input during the design phase
2. Construction Contracting Authority during the tender phase for construction services, and
3. General Contractor and Constructor during the site investigations, construction and post-construction phases.

PSPC reserves the right to re-assign and/or retain additional Construction Managers and/or contractors as may be required to effectively deliver the project.

2.4 General Contractors, Contractors and Subcontractors

Contractors and subcontractors will be contracted directly with the Construction Managers to undertake construction work at the sites in compliance with construction documents prepared by the Design and/or Prime Consultants.

PSPC reserves the right to tender and award separate construction contracts directly as may be required to effectively deliver the project.

2.5 Constructor

The Constructor is the contractor assigned to have care and custody of the construction site. The Construction Manager, where employed, will be designated the Constructor. Where there is no Construction Manager the General Contractor or other major contractor will be designated the Constructor with care and custody of the specific site.

2.6 Media Relations

The Departmental Representative will manage all external communications related to the Work and/or the Project. No project participant, including Consultant and CM staff, sub-consultants, subcontractors, suppliers or other related staff and/or persons, are to communicate with anyone external to the project, including stakeholders, project site neighbours, special interest individuals/groups, and the media, unless instructed to do so by the Departmental Representative. If contacted by reporters or others, the project participant must refer them to the Departmental Representative immediately. Project participant must not share, distribute, post/publish or agree to have published for marketing or any other reason information on or related to this Project without the prior written approval of the Departmental Representative.

2.7 Public Relations

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The construction work will be undertaken in close proximity to the public use of the waterways and associated facilities. The public may also have a general interest in the Work and ask for information related to the Work.

All project participants are to work hand-in-hand with the Departmental Representative and the Construction Manager in all matters dealing with public relations. All dealings with the public will be professional and courteous. Any actual, perceived or anticipated conflicts are to be brought to the attention of the Departmental Representative in a timely manner.

2.8 Presentation

This Industry Engagement Day session is open to all interested suppliers and associations in this industry. Canada will engage industry in a discussion on the project history, current scope, specific site conditions, constraints and requirements, presentation documentation including reports and construction document and review possible options to facility in-water works for the TSW projects. Canada will be looking for feedback from industry in regards to ideas related to the current approach that might results in efficiencies and cost savings to Canadians. Industry will be provided two-weeks to provide feedback.

2.9 Schedule

Sign-in to the event begins at 9:00 A.M.

PSPC will be holding an Industry Engagement Day for interested contractors on Thursday, August 30, 2018 from 9:30 A.M. to 3:00 P.M.

2.10 Location

Naval Association Meeting Room
Peterborough Naval Association
24 Whitlaw Street
Peterborough, ON
K9J K9

2.11 Industry Engagement Day Expenses

Attendees are responsible for their own transportation, accommodation, meals and parking. Canada will not reimburse any attendee from expenses incurred in attending, participating, and/or responding to any part of these industry engagement activities.

2.12 Language

The Industry Engagement Day will be held in English.

Interested participants must register their representatives by providing in an e-mail the pre-registration information identified below to:

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Day

Ambreen Dhillon
Public Works and Government Services Canada
Real Property Contracting Services, Ontario Region
4900 Yonge Street, 12th Floor
Toronto, ON M2N 6A6
E-mail: ambreen.dhillon@pwgsc-tpsgc.gc.ca

Pre-registration Information:

First Name of Participant
Last Name of Participant
Company Name (Legal and Operating)
Participants Email Address
Phone Number including Area Code

By providing the pre-registration information, the participant consents to the release of their information, and that of their company, to the public.

Attachment A

Site Specific Information

The information and photographs presented are general in nature and provided for easy reference only. The current conditions of the structures are subject to further investigation. The scope of the work may change based on those investigations, budget constraints and revised requirements. Additional and updated information will be provided at the workshop.

There are four Bundles; South, Central, Kirkfield and North with a number of sites within each. Sites may be removed or added at the sole discretion of Canada.

South Bundle

Site A: Dam 1 at Lock 1 – Trenton:

Description: The dam is a 222m long structure and is between 6.5 to 8.5 meters in height. 168m of the dam is the spillway structure, which is equipped with eighteen 7.62m wide stop log bays to control the upstream water of the Trent River. A 40.5m and 13.5m concrete retaining structures at either sides of the spillway structure extends the dam into the east and west river banks respectively. Lock 1 is a 74.4 m long concrete structure, with a 53.5 m long by 10.1 m wide and 9.1 m deep lock chamber, equipped with timber mitre gates spanning between concrete monoliths located at both upstream and downstream end of the chamber.



Scope: The demolition and replacement of the entire existing dam structure, including but not limited to the deck, piers, abutments, spillways, downstream apron, including the rehabilitation of the upstream west training wall.

Site B: Glen Miller Dam 3 at Lock 3

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Description: The concrete dam has a total length of approximately 158 m and consists of ten (10) stoplog weirs with nine (9) logs per weir, and four (4) stoplog weirs with twelve (12) logs per weir, operated with an Atlas Polar log lifter. The dam has a total height of approximately 7.5 m (from record drawings) and retains a reservoir height of approximately 6.28 m.



Scope: The demolition and replacement of the entire existing dam structure and restore and construct an erosion control mitigation and backfill embankment to restore the original profile.

Site D: Meyers Dam 8 at Lock 9

Description: The Meyers Dam 8 was built in 1913 and originally consisted of a concrete sluiceway with fourteen sluices. The dam abuts the east retaining wall that extends 100m from the OPG generating station to the west upper lock approach wall and consists of a concrete retaining wall with an earthfill embankment.



Scope: Improve operational effectiveness and modifications to prevent overflow, repairs to sills and piers, increase elevation of west and east approach walls.

Site E: Dam 9 at Lock 10 Hagues Reach (Deferred)

Description: Dam 9 is a concrete gravity dam originally built in 1915 with fifteen 6096 mm wide stoplog sluices. The concrete dam has a total length of 117 m and the outflow has been divided between two channels by a 'river' wall immediately downstream of the dam.



Scope: Improve operational effectiveness and modifications to prevent overflow, repairs to sills and piers, increase elevation of west and east approach walls, reconstruct the river wall as and where required and construction of an access bridge upstream of the radial gates.

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Site G: Dam 10 at Lock 11 and 12 Ranney Falls

Description: Ranney Falls Dam is a concrete gravity and has a total length of 70 m with six (6) 10 m wide, gate controlled sluices. The gates are vertical steel roller gates and are operated by an electric motor with a backup hand crank.

Scope: The main objective to increase discharge capacity at Ranney Falls Dam 10 in order to reduce risk associated with hydraulic capacity by way of modifications to the deck, gates, sills to increase capacity, construction of a bypass spill way. Final options to be identified after further investigative work and concept design.



Site F: Ranney Falls Locks 11 and 12, Lock Gate and Valve Rehabilitation

Description: The locks were built in 1912 and the chamber walls and gate monolith structures are concrete gravity retaining walls founded on bedrock. The lock chamber valves of Locks 11 and 12 are the original design from 1912 and while they have been repaired over the years, major rehabilitation or replacement is required.

Scope: The scope will include the replacement of the six existing valves for Lock 11 and 12 with new valves and the associated works related to the installation. The scope will also include removal of existing gate hinges from the lower steel gates of Lock 11 and 12 and replacement with new as well as localized concrete repair and/or concrete design changes to anchor the new hinges into place. The lock gate gudgeon anchors (gate hinges) of the lower gates on Lock 11 and 12 will also be replaced



Site G: Dam 10 at Lock 11 and 12 Ranney Falls

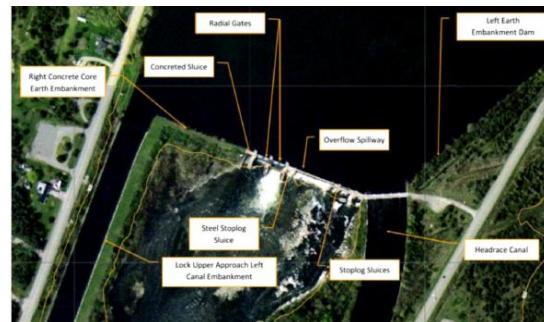
Description: Ranney Falls Dam is a concrete gravity and has a total length of 70 m with six (6) 10 m wide, gate controlled sluices. The gates are vertical steel roller gates and are operated by an electric motor with a backup hand crank.

Scope: The main objective to increase discharge capacity at Ranney Falls Dam 10 in order to reduce risk associated with hydraulic capacity by way of modifications to the deck, gates, sills to increase capacity, construction of a bypass spill way. Final options to be identified after further investigative work and concept design.



Site H: Campbellford Dam 11 and Lock 13

Description: Dam 11 is a concrete gravity structure, consisting of four wooden stoplogs spillway, an overflow spillway and two radial gates, in addition to two blocked sluices. The overall dam length is 142 m. The overall height of the dam is 11.2 m from bedrock to the top of the dam deck. Lock 13, is also a concrete gravity structure equipped with manual upper gates and mechanized lower gates. The lock is a single chamber of 53.3 m long by 10 m wide. The depth of the lock, from coping to floor is 10.8 m.



Scope: A comprehensive rehabilitation of the dam, lock and associated structures at Campbellford Dam 11 and Lock 13 are required including reconstruction of spillways, steel stoplog sluice, concrete repairs, rehabilitation of the left and right embankment earth dam and lock upper approach canal earth embankment and repair upstream and downstream lock concrete approaches.

Site I: Crowe Bay Dam 12 and Lock 14

Description: Both dam and lock have undergone major work including repairs and upgrades since initial construction in 1913. Dam 12 is a concrete gravity structure, consisting of four wooden stoplogs spillway, an overflow spillway and two radial gates, in addition to two blocked sluices. The overall dam length is 142 m. The overall height of the dam is 11.2 m from bedrock to the top of the dam deck.



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Scope: The comprehensive rehabilitation of the dam, lock and associated structures at Crowe Bay. Work will also include the conversion of the overflow spillway of the dam into mechanical gates in order to reduce the risks of dam failure due to overtopping to a level as low as possible given site characteristics and downstream dam capacities, construction of downstream tailrace wall along lock embankment, repair of upstream and downstream approach walls, and modification of embankments between lock 14 and the dam.

Site J: Southern Sector Concrete Repairs

Description: The Healey Falls Locks and the chamber walls and gate monolith structures are concrete gravity retaining walls founded on bedrock.

Scope: Repairing the lock structure of Lock 16, 17 and the remaining portion of Lock 15 by repairing the concrete walls, tunnels, chambers and coping, replace the existing valves for Locks 16 and 17, remove and replace Lock 17 gate hinges, remove and replace the downstream wood gates of Lock 16, remove and replace all intake chamber and tunnel walls of Lock 15.



3 Centre Bundle

Site A: Dam at Lock 22 – Nassau Mills (Deferred)

Description: The concrete regulating gravity dam was built approximately in 1933. The concrete dam has a total length of approximately 71 m and consists of nine (9) stop log weirs 6.1 m wide and one (1) log chute 2.4 m wide. The stop log weirs are operated by a hydraulic log lifter mounted on rails. The dam has a total height of between 7 m and 11 m (bedrock to top of deck) and retains a reservoir height of between 5.5 m and 9.5 m.

Scope: Replace the entire existing dam structure, including but not limited to the deck, piers, abutments, stop logs, spillways, upstream and downstream wing walls, and east and west approach slabs.



Site B: Dam at Lock 23 – Otonabee

Description: The concrete regulating gravity dam was built in 1927. The concrete dam has a total length of approximately 74 m and consists of eight stop log weirs 6.1 m wide and one log chute 2.4 m wide. The stop log weirs are operated by a hydraulic log lifter mounted on rails. The dam has a total height of approximately 8.4 m (bedrock to top of deck) and retains a reservoir height of approximately 7.3 m.

Scope: Replace the entire existing dam structure, including but not limited to the deck, piers, abutments, stop logs, spillways, upstream and downstream wing walls, east and west approach slabs.



Site C: Dam at Lock 24 – Douro

Description: The concrete regulating gravity dam was built approximately in 1930. The concrete dam has a total length of approximately 74 m and consists of nine (9) stop log weirs 6.1 m wide and one (1) log chute 2.4 m wide. The stop log weirs are operated by a hydraulic log lifter mounted on rails. The dam has a total height of approximately 8 m (bedrock to top of deck) and retains a reservoir height of approximately 5.2 m.

Scope: Replace the entire existing dam structure, including but not limited to the deck, piers, abutments, stop logs, spillways, upstream and downstream wing walls, and east and west approach slabs.



Site D: Dam at Lock 25 – Sawyer Creek

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Description: The concrete regulating gravity dam was built approximately in 1932. The concrete dam has a total length of approximately 71 m and consists of nine (9) stop log weirs 6.1 m wide and one (1) log chute 2.4 m wide. The stop log weirs are operated by a hydraulic log lifter mounted on rails. The dam has a total height of between 6.8 m and 9 m (bedrock to top of deck) and retains a reservoir height of between 5.3 m and 7.5 m.



Scope: Replace the entire existing dam structure, including but not limited to the deck, piers, abutments, stop logs, spillways, upstream and downstream wing walls, and east and west approach slabs.

Site E: Dam at Lock 19 – Scott's Mills

Description: The dam is L-shaped, +/-80 m long and 6.5 to 7.5 m high, with seven (2 N-S + 5 E-W) 7.6 m wide stoplog sluices, one 4.9 m wide log chute, and a concrete deck installed sometime after dam's original construction. The stoplog sluices are primarily operated by a rail-mounted hydraulic log-lifter, with manual winches used for the two side sluices. The lock is an historic stone masonry lock of high cultural significance, built circa 1901/06. The lock has filling/discharge valves integrated within timber gates to manage water levels within the lock.



Scope: Replace the entire existing dam structure, including but not limited to the deck, piers, abutments, spillways, upstream and downstream wing walls, and east and west approach slabs. Downstream bottom erosion issues to be addressed by installation of aprons and dissipaters. Embankment and approach walls deterioration to be addressed including possible extensions. The existing stone masonry walls of the lock are to be fully rehabilitated. The upstream and downstream concrete approach walls are to be fully rehabilitated through extensive concrete re-facing or complete wall replacements. Coping levels of downstream walls on both sides of the canal are to be raised.

Site F: Burleigh Falls Dams

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Description: Includes two dams, Dam at Lock 38 and Perry's Dam 1: The concrete regulating gravity dam at Lock 38 has a total length of approximately 240 m and consists of twelve (12) stop log weirs 6.1 m wide. The stop logs are operated by a hydraulic log lifter mounted on rails. The combined concrete regulating gravity dam and bridge, Perry's Creek Dam 1, was built in approximately 1932. The concrete dam has a total length of approximately 18.9 m and consists of three (3) stop log weirs 4.57 m wide. The stop logs are operated by manual 2 ton Beebe brother winches mounted on rails.



Scope: The entire existing dam structure at Lock 38 will be rehabilitated subject to specific conditions and design determinations, including but not limited to the deck, piers, abutments, spillways, south wing-wall and north wing-wall.

Site G: Peterborough Earth Dams

Description:

1. Thompson Bay Dam embankments: the length of the Left and Right earth embankments are approximately 140 meters and 80 meters, respectively. The maximum height of the embankment is estimated at 3.35 meters.
2. Hurdons Dam is an earth embankment dam approximately 1000 meters long; 6.32 m high (crest elevation is 213.80 m) and retains 1,500,000 m³ of water at maximum normal operating level (MNOL) of 212.58 m. The dams are earth embankment dams with riprap and stone filled gabion baskets.
3. The Curtis Creek East and West Dams are 7.83 m and 8.15 m high, respectively, with a crest elevation of 213.50 m and retains 1,500,000 m³ of water at maximum normal operating level (MNOL) of 212.58 m. The lowest top of dam on the Curtis Creek East Dam is at 213.30 m, and 213.39 m on the Curtis Creek West Dam.
4. The Curtis Creek Culvert passes underneath the dams and canal to allow water from Curtis Creek proper to flow underneath the dams, in a south westerly direction towards the Otonabee River. The culvert is a steel pipe with an approximate diameter of 1500 mm.

Scope: rehabilitate the Peterborough Earth Dams to improve the assets' condition from poor to good with a service life of 80 to 100 years for the rehabilitated structures. Subject to supplementary investigations and variations between sites, the scope of the work includes:

1. Erosion protection,
2. Ponding and seepage repairs,
3. Raise low points,

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4. Overflow protection,
5. Slope stabilization,
6. Vegetation rehabilitation,
7. Landscape improvements, and
8. Pedestrian trails

Site H: Guard Gate – Trent Canal

Description: The existing Nassau Guard Gate is a submerged flat gate consisting of a steel frame structure with timber planks, which is 15.8 m (52 feet) long. It is operated using a manual winch with a rack and pinion mechanism to lower and raise the gate into position. The gate has not been used for a long period of time and is currently inoperable.

Scope: Replace the entire existing gate with a new gate including all related installations, demolish and remove from site the existing gate and ancillary structures.

Kirkfield Bundle

Site A: Dam at Lock 38 (Talbot Dam):

Description: The Talbot Dam at Lock 38 is a concrete gravity dam founded on rock. It was built in 1908 and has two 7.6 m sluices with stop logs, and two 6.1 m wide overflow weirs on the north (right) side of north sluice and one 6.1 m wide overflow weir on the south (left) side of the south sluice. At the south end of south overflow weir and north end of the north overflow weir is a 20.4 m wide and 11.9 m wide concrete bulkhead, respectively. The south bulkhead is tied into the river bank and the north bulkhead is tied to the lock wall through the earth embankment between the dam and the lock. The dam has a total length of approximately 75 m. The dam height is approximately 8.1 m retaining a reservoir depth of approximately 7 m. The stop log sluices are operated with a set of two manually operated crab winches.



Scope: A comprehensive rehabilitation or replacement of the dam to extend the service life to 80-100 years, and rectify specific deficiencies identified in the 2015 Dam Safety Report (DSR) within the Cultural Resource Management (CRM) process and constraints.

Site B: Dam at Lock 39 (Talbot River Dam)

Description: The Talbot River Dam is a concrete gravity dam and is operated to maintain the navigation water levels on the TSW, provide water control of the watershed and to provide minimum flows for the Talbot River fishery. The dam was built in 1908 and has two sluices with stop logs and a set of two manually operated crab winches. This structure is flanked by north and south concrete gravity bulkhead structures that incorporate 6.1 m wide overflow spillways. It has a total length of approximately 48 m and the two sluices are each 7.6 m wide while the gravity section of the bulkheads are 6.7 m long. The dam has a total height of approximately 8.0 m and retains a reservoir depth of around 6.3 m.



Scope: A comprehensive rehabilitation or replacement of the dam to extend the service life to 80-100 years, and rectify specific deficiencies identified in the 2015 Dam Safety Report (DSR) within CRM process and constraints.

Site C: Talbot Canal Earth Embankments and Culvert

Description: Includes a number of embankments, canal shoreline and one culvert.

1. The earth embankment located to the right of the Talbot River Dam consists of earth with a concrete core measuring 114 m long and an additional 14 m long end section with a sheet pile core.
2. There are two embankments from the Talbot River Dam to Portage Lock 39 that are referred to as the North-West and South-East embankments.



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- a. The North-West embankment is 1400 m long in total with the first 12 m from the concrete dam consisting of a concrete core and the remainder a clay core puddle up to the Lock.
- b. The South-East Embankment is 1400 m long with a clay core puddle starting from the entrance of the canal to Lock 39. There is a low area at the end of the South-East embankment that may be a concern for water impoundment of this reach.



- c. The embankments from Lock 39-41 (Lock 40 shown) reportedly have sink holes and other deficiencies.
3. The shoreline of the canal is lined with gabion baskets that were installed in approximately 1959. Today many of these have rotated or their wire baskets have broken that prompted the TSW to install steel sheet piling along the crest of the embankments.
 4. There is a culvert that runs under the canal about halfway on the canal between Lock 39 and entrance of the canal at the Talbot River which is reportedly in poor condition above the water line.

Scope: The primary objectives for the Talbot Canal Earth Embankments are: to rectify specific deficiencies identified in the 2015 DSR and the rehabilitation of the existing embankment by raising the concrete core walls and modification of the slopes to establish the crest elevation from the Talbot River to Lock 39 to an Inflow Design Flood (IDF) level with 0.3 meter of freeboard. The earth embankment dams have been identified for rehabilitation or upgrades that may include: repairs to wash-outs, removal of vegetation undermining their strength, height increases, sheet pile extensions, and slope protection.

Site D: Concrete Repairs at Locks 37, 38, 39, 40, 41, 42 and 43

Description: Locks 37 through 42 (Lock 41 shown) are reinforced mass concrete locks with timber gates, The lock channels have approach walls from 50 m to 100m long. Lock 43 (Swift Rapids) is a reinforced mass concrete lock with steel mitre gates on its downstream side and steel sector gates on its upstream side.

Scope: Ongoing site investigations will determine the extent of concrete repairs. Any work within the up and down stream gates can be achieved with closing the gates and pumping. Repairs outside the gates may require temporary measures for access.



North Bundle

Site F: Dam A, Port Severn Area

Description: Dam A is a concrete faced backfilled structure, approximately 43 m long, with an approximate height of 1.4 m. A 3 m wide man-made breach currently exists in the dam that extends about 1 m below top of dam. The concrete structure is founded on bedrock.

Scope: Replace the existing structures through the design and construction of new structures complete with all ancillary installations, operator safety features, fencing for public safety, shoreline stabilization and protection, landscape and embankment works, commissioning, demolition and/or removal of replaced installations and site restoration.



Site G : Dam C, Port Severn Area

Description: Dam C is a 119 m long retaining wall of concrete founded on bedrock with an earth embankment. The approximate height of the structure is 2.4 m. There are sinkholes or possible burrows on the crest of the embankment along the length of the wall. Pooling of water downstream of the embankment may be due to either seepage through the dam or lack of site drainage of the adjacent terrain.



Scope: Repairs of joints and cracks using grout or other suitable methods for the concrete wall. Concrete patch repairs (minimum 200mm deep) in areas of degraded (spalled) surfaces is required. At the earth embankment, eroded soil material of the sinkholes is to be replaced by similar material and well compacted. Organic erosion control of the steepest section of the dam (approximately 15m length) is to be provided. This protection is to extend to the downstream slope.

Site H: Dam D, Port Severn Area

Description: Dam D is located at the east end of the Main Dam and is a 70 m long concrete faced embankment dam. A recent survey indicated it to be 1.96 m tall, with a crest elevation at 181.39 m. The dam is founded on bedrock. There are Minor cracks on the top of wall, significant concrete spalls along the length of the wall in the drawdown zone, a large crack located at the junction of Dam D and the Main Dam, there are two 0.2 m diameter sinkholes on the downstream side of the dam, located 1.5 m and 0.3 m away from the concrete wall, and the compactness of the embankment is loose.



Scope: The scope of work includes concrete repairs for the majority of the length of the wall in areas of deep spalls which are located at low water levels (ice line).

Site I: Dam E, Port Severn Area

Description: Dam E is 35 m long with a single 6.1 m wide sluice and a left and right concrete gravity wall. The surveyed elevation of the dam is 4.93 m, with a top of deck elevation of 181.95 m. The dam can hold up to nine logs, and is manually operated with winches. The dam has two decks: a deck for stop log operations and a 5.5 m wide vehicular deck on the downstream side of the dam. The end section of the right bank wall is cut by a crack and has moved slightly upstream, three pieces of concrete have broken away in the drawdown zone of the right and left wall, the concrete surface is deteriorated in the drawdown zone, the concrete on the deck is deteriorated around the winch anchors, a large vertical crack is noted on the right sluice side wall, and cracks have been observed at the top of the wall, at the construction joints and in the drawdown zone.



Scope: Replace the existing structures through the design and construction of new structures complete with all ancillary installations, operator safety features, fencing for public safety, shoreline stabilization and protection, landscape and embankment works, commissioning, demolition and/or removal of replaced installations and site restoration.

Site J: Dam G, Port Severn Area (Little Chut)

Description: Dam G is 137 m long, and consists of a central 2.44 m wide sluice and a left and right concrete wall. The surveyed height of the dam is 4.26 m with a top of deck elevation of 181.36 m. The sluice can hold up to seven stop logs, which are operated with manual winches. The dam deck is made of reinforced concrete with an added narrow cantilevered steel frame and wood platform.



Scope: Replace the existing structures through the design and construction of new structures complete with all ancillary installations, operator safety features, fencing for public safety, shoreline stabilization and protection, landscape and embankment works, commissioning, demolition and/or removal of replaced installations and site restoration.

Site K: Lock 45, Port Severn Area

Description: Lock 45 is a non-reinforced, mass concrete gravity structure with an overall 25.6 m length, 3.76 m depth, and a guaranteed 1.64 m draft. Inspection results indicate the following: significant and problematic leakage has been observed through the common wall. The leakage can be attributed to deep cracks and construction joints. The leakage has also caused ice jacking of the staircase resulting in cracking and some separation from the common wall, a large crack (5 mm) is noted at the top of the left staircase, the remainder of the lock walls is in good condition.



Scope: Repair the leakage through the common wall of the main dam pier #1 and the East lock wall as well as replace the lower staircase on the East side of the lock. Repair to the concrete cracks, spalls and delamination of upstream and downstream approach walls. Possible Construction of an extension of the lower entrance walls and/or construction of energy dissipating system or barriers,

Site L: Main Dam, Port Severn Area

Description: Main Dam is a concrete gravity structure build in 1916 and founded on bedrock. It has an overall length of 71.32 m with a surveyed elevation of 10.55 m from top of deck to bedrock. There are 9 sluiceways with timber stop logs that are operated with a hydraulic log lifter. The top of dam includes an upper concrete service deck and a downstream roadway deck. Each sluice is 6.1 m wide with piers that are 1.83 m wide.



Scope: Complete replacement or rehabilitation of the dam is required subject to further studies. Rehabilitation would include the following: concrete re-facing of all piers and sills, crack injection and installation of cross-tie reinforcement in the concrete core of the piers as required, installation of post-tension anchors to increase the stability of the dam to resist winter loading conditions. Replacement would include the following: new piers, abutments, sill and service deck for a complete installation.

Site M: Main Fixed Bridge, Port Severn Area

Description: The fixed bridge consists of a concrete deck with nine equal spans, integrated with four concrete beams. The total length of the fixed bridge is 69.5 m between the outside faces of the west abutments and east abutment (Pier 1 and 10, respectively). The roadway deck has an exposed concrete surface and a clear width of 4.67 m that carries a single lane of bi-directional traffic over the Dam. Integral 1.219 m high cast-in-place barriers are on each side of the bridge. There are no sidewalks on the fixed bridge. The bridge deck is simply supported on the Dam piers, which consists of 1.83 m thick unreinforced mass concrete founded on bedrock



Scope: Replace the existing structures through the design and construction of new structures complete with all ancillary installations, operator safety features, fencing for public safety, shoreline stabilization and protection, landscape and embankment works, commissioning, demolition and/or removal of replaced installations and site restoration.

Attachment B

List of Sites with Summary Information

Bundle	Site/Location	Nature of work	In-water works (Y/N)	Coffer dam (Y/N)	Size	Maximum water depth ⁽¹⁾ (M)	Anticipated Construction Period	Special Conditions	Design Consultant	Construction Manager	Anticipated Work Period
South	Site A/Trenton	Dam 1 at Lock 1 Reconstruction and Lock 1 Rehabilitation	Yes	Yes	222 m long	80.47	04/09/19 to 27/11/19	Lack of control of downstream water conditions due to it lying on Lake Ontario.	SNC-L	Maple Reinders CDB JV	02/07/19 to 23/02/22
	Site B	Glen Miller Dam 3 at Lock 3 Rehabilitation;	Yes	Yes	158 m long dam with 14 stoplog weirs.	94.94	16/07/19 to 11/09/19		SNC-L	Maple Reinders CDB JV	03/06/19 to 01/04/21
	Site C	Frankford Dam 6 at Lock 6 Rehabilitation	N/A	N/A	N/A	N/A	N/A	Project has been descope.	SNC-L	Maple Reinders CDB JV	N/A
	Site D	Meyers Dam 8 at Lock 9 Rehabilitation;	Yes	N/A	N/A	N/A	N/A	Metrebags and stop logs.	SNC-L	Maple Reinders CDB JV	N/A
	Site E	Dam 9 at Lock 10 Hagues Reach Rehabilitation;	No	N/A	N/A	N/A	N/A	Project has been descope.	SNC-L	Maple Reinders CDB JV	N/A
	Site F	Ranney Falls Locks 11 and 12 – Lock Gate and Valve Rehabilitation;	Yes	No	N/A	N/A	N/A	Stoplog cofferdam.	SNC-L	Maple Reinders CDB JV	N/A
	Site G	Dam 10 at Lock 11 and 12 Ranney Falls Rehabilitation	Yes	Yes	70 m with 6 gates.	147.03	03/07/19 to 02/10/19		SNC-L	Maple Reinders CDB JV	04/06/19 to 15/09/20
	Site H	Campbellford Dam 11 and Lock 13 Rehabilitation	Yes	Yes	142 m with 5 stoplog spillways, 2 gates and 2 blocked sluices.	154.35	10/03/19 to 14/03/19		Stantec	Maple Reinders CDB JV	09/01/19 TO 13/09/20
	Site I	Crowe Bay Dam 12 and Lock 14 Rehabilitation	Yes	Yes	158 m with 5 gates.	161.48	09/07/18 to 27/07/2018		Stantec	Maple Reinders CDB JV	26/06/18 to 17/09/18
	Site J	Southern Sector Concrete Repairs.	Yes	No	N/A	183.69	N/A	Stoplog cofferdam.	HCEW	Maple Reinders CDB JV	N/A

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Bundle	Site/Location	Nature of work	In-water works (Y/N)	Coffer dam (Y/N)	Size	Maximum water depth ⁽¹⁾ (M)	Anticipated Construction Period	Special Conditions	Design Consultant	Construction Manager	Anticipated Work Period
Central	Site A	Dam at lock 22	Yes	Yes	150	5.0	Deferred	The total dam heights are approximately 8.5m high.	SNC-L	Maple Reinders	n/a
	Site B	Dam at lock 23	Yes	Yes	150	5.0	Oct-18	approximately 8.5m high.	SNC-L	Maple Reinders	24 months
	Site C	Dam at lock 24	Yes	Yes	150	6.0	Oct-18	5.0m or 6.0m cofferdams	SNC-L	Maple Reinders	24 months
	Site D	Dam at lock 25	Yes	Yes	150	5.0	Jul-19	required.	SNC-L	Maple Reinders	24 months
	Site E	Dam at lock 19	Yes	Yes	170	6.0	Jul-19		SNC-L	Maple Reinders	36 months
		Burleigh Falls dam	Yes	Yes	At repair locations +/- 200m			Cofferdams at nosing repairs may be re-used in a phased operation.			
	Site F					5.0	Jul-19		SNC-L	Maple Reinders	21 months
	Site G	Peterborough earth dams									
		Thompson's Bay Dam	Yes	No	220	3.4	Jul-18	Design dam water heights.	SNC-L	Maple Reinders	10 months
		Hurdon's dam	Yes	Yes-part	1000	6.3	Jul-18	Water depths may have reduced due to siltation.	SNC-L	Maple Reinders	10 months
		Curtis Creek East dam	Yes	No	475	7.8	Jul-18		SNC-L	Maple Reinders	10 months
		Curtis Creek West dam	Yes	No	330	8.1	Jul-18		SNC-L	Maple Reinders	10 months
	Site H	Nassau Guard gate	Yes	Yes	200	4.3	Jan-18		SNC-L	Maple Reinders	16 months

Bundle	Site/Location	Nature of work	In-water works (Y/N)	Coffer dam (Y/N)	Size	Maximum water depth ⁽¹⁾ (M)	Anticipated Construction Period	Special Conditions	Design Consultant	Construction Manager	Anticipated Work Period
North	Site B	Six Mile Lake Dam	Y	Y	45	4.3	N/A		CIMA		Fall 2018
	Site C	Hungry Bay Dam	Y	Y	65.3	4	N/A		CIMA		Fall 2018
	Site D	Crooked Bay Dam	Y	Y	42.4	3.7	N/A		CIMA		Fall 2018
	Site E	Pretty Channel Dams	Y	Y	94	4.6	N/A		CIMA		Fall 2018
	Site F	Dam A	Y	Y	43	1.4	N/A		AECOM	Maple Reinders	N/A
	Site G	Dam C	Y	Y	119	1.5	Dec-18		AECOM	Maple Reinders	Dec-18
	Site H	Dam D	Y	Y	70	2	Summer 2021		AECOM	Maple Reinders	Summer 2021
	Site I	DamE (Bayview)	Y	Y	35	4	Dec-18		AECOM	Maple Reinders	Dec-18
	Site J	Dam G (Little Chute)	Y	Y	140	3.5	Summer 2021		AECOM	Maple Reinders	Summer 2021
	Site K	Lock 45	Y	Y	71.3	3.5	Fall 2019		AECOM	Maple Reinders	Fall 2019
	Site L	Main Dam	Y	Y	71.3	6	Fall 2019		AECOM	Maple Reinders	Fall 2019
	Site M	Main Fixed Bridge	Y	Y	71.3	6	Summer 2021		AECOM	Maple Reinders	Summer 2021

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Bundle	Site/Location	Nature of work	In-water works (Y/N)	Coffer dam (Y/N)	Size	Maximum water depth ⁽¹⁾ (m)	Anticipated Construction Period	Special Conditions	Design Consultant	Construction Manager	Anticipated Work Period
Kirkfield	Site A	Dam at lock 38 (Talbot Dam)	Y	Y	120m	8 m	Fall 2018	N/A	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Fall 2018
	Site B	Talbot River dam	Y	Y	80m	5 m	Underway	N/A	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Underway
	Site C	Talbot Canal earth embankment	Y	Y		3 m	Fall 2018	N/A	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Fall 2018
		Talbot Canal culvert						Cancelled	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	
	Site D	Concrete Repairs at locks 37						Cancelled	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	
		Lock 38						Cancelled	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	
		Lock 39	Y	Y	10 m	3 m	Fall 2018		KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Fall 2018
		Lock 40	Y	Y	10 m	3 m	Fall 2018		KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Fall 2018
		Lock 41	Y	Y	10 m	3 m	Fall 2018		KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	Fall 2018
		Lock 42						Cancelled	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	
		Lock 43						Cancelled	KONTZAMANIS GRAUMANN SMITH	Ellisdon Civil Ltd, Chant Ltd (joint venture)	