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Amendment #3

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**Parks Canada Agency
 Mailroom
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Title-Sujet Replacement of Horseshoe Lake Dam and Twelve Mile Lake Dam, Trent-Severn Waterway National Historic Site		Date 20 December , 2018
Solicitation No. - No. de l'invitation 5P201-18-0092/B	Client Ref. No. - No. de réf du client. 352 and 1361	
GETS Reference No. - No de reference de SEAG PW-18-00835782		
Solicitation Closes L'invitation prend fin - at - à 02:00 PM on - le 2019-01-08	Time Zone Fuseau horaire - Eastern Standard Time (EST)	
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AMENDMENT #3

THIS ADDENDUM IS TO POST QUESTIONS AND ANSWERS, CLARIFICATIONS AND TWO REVISED DRAWINGS

QUESTIONS AND ANSWERS

Question 1. Are there any requirements for penstock pipe or any new valves on this project?

Answer 1. There are no requirements for penstock or any new valves in this project.

Question 2. Has a contractor been awarded the project to begin construction?

Answer 2. The Horseshoe and Twelve Mile Lake Dam Replacement project is currently out for tender on buyandsell.gc.ca. No final bid has been selected.

Question 3. Some Drawings are not shown properly (eg. Twelve Miles Lake Drawing 108 & Horseshoe Lake Drawing 105).

Answer 3. Refer to the revised Twelve Mile Lake Drawing 108 and Horseshoe Lake Drawing 105.

Question 4. Provide the related specification section to item 13 in Lump-sum Table – Twelve Mile Dam.

Answer 4. Refer to Section 05 50 00 for detailed specifications of the winches and its associated components. The relevant clauses include:

- Clause 2.1.9 – 2.1.12
- Clause 2.2.5
- Clause 2.4.3.2
- Clause 3.2.2
- Clause 3.2.8 – 3.2.10 & 3.2.12 – 3.2.13

Refer to Twelve Mile Lake Drawing 113 for further deck equipment details.

Question 5. Item 14 Specification Reference 05 50 00 Supply and Installation of New Steel Box: Specifications did not specify the thickness of the box, please provide.

Answer 5. The material is to have a gauge of 4mm and the dimensions of the box are to meet the required dimensions listed in clause 1.1.2.5 in referenced specification section 05 50 00.

Question 6. Can you please specify what size of material should be bid under lump sum item 51 – Rip Rap?

Answer 6. The rip rap will be heavy 300-500mm caliber rip-rap. Refer to Section 31 37 00 Section 2.1.2.



Question 7. Section 31 05 16 Page 1 Part 1.2.1 describes measurements for payment being by the cubic meter. Please confirm that payment will be made according to the unit of measure indicated on Appendix a Revise Price Form. (Granular A & B).

Answer 7. Payment will be made according to the unit of measure (T) indicated on Appendix 1 Revised Price Form (Granular A & B)

Question 8. We wish to submit as equivalent to the specified aggregate embedded bitumen waterstop bands our STOPO type 3, model # 37040, for BFL Matrix 40/70R, and our STOP type 4, model # 47040 for BFL Matrix 40/70R4

Answer 8. This substitution is acceptable provided the waterstop can be sealed to the uneven rock surface as shown on the drawings.

Question 9. For Horseshoe Lake Dam, reference section 01 11 00, item 1.3.4 – please confirm the location of Canada’s shop?

Answer 9. The address for delivery and pick-up of the crab winches will be 2155 Ashburnham Drive, Peterborough ON for both the Horseshoe Lake Dam and 12 Mile Lake Dam projects.

Question 10. For Horseshoe Lake Dam, reference section 01 11 00, item 1.3.4 – Please confirm who is responsible for transporting the existing crab winches to and from Parks Canada’s shop?

Answer 10. The Contractor is responsible for transporting the existing crab winches to and from 2155 Ashburnham Drive, Peterborough.

Question 11. For Horseshoe Lake Dam, reference section 01 11 00, item 1.3.4 – Please confirm who is responsible for transportation and installation of temporary winches?

Answer 11. The Contractor is to pick up temporary winches from PCA Haliburton shop (1011 Paradise Cove Road, Haliburton, Ontario K0M 1S0) and install for sluice no. 1 to the direction of PCA operations. Operation of sluice no.1 logs is by Parks Canada water management only.

Question 12. For Horseshoe Lake Dam, reference section 01 22 01, item 1.5.2.16 – Dewatering System included in Lump Sum Item #1 – Item 1.5.4 – Lump Sum Item No. 3 – Dewatering Works – Please confirm dewatering costs are to be carried in Lump Sum Item #3 only?

Answer 12. The dewatering costs are to be carried in Lump Sum Item #3

Question 13. For Horseshoe Lake Dam, reference section 01 22 01, item 1.5.7.5 – Install new Gauge G2 – Who is responsible for supplying this gauge?

Answer 13. PCA will supply this gauge for installation by the contractor. To clarify the scope of Lump Sum Item No. 6, the removal of existing level gauge G1, existing flow gauge G2, and existing gauge G3 has been completed previously so no removal or storage of these existing gauges is required. Installation of PCA supplied gauges will be required upstream and downstream as indicated on drawing 106.



Question 14. For Horseshoe Lake Dam, reference section 01 52 00 – item 1.8 – Security – Please confirm that full time site security person is required to be on site after working hours and during holidays for the duration of the project?

Answer 14. The Contractor is responsible for providing the means deemed necessary by the Contractor to maintain the security of the site.

Question 15. For Horseshoe Lake Dam, reference section 01 52 00 – item 1.9.8 – Who is responsible for payment of monthly invoices for bell and internet charges for Departmental Representative?

Answer 15. The Contractor is responsible for providing and paying invoices for internet for the trailer of the Departmental Representative.

Question 16. For Twelve Miles Lake Dam, reference section 01 11 00, item 1.3.2.7 – Reference is made to 2 Tonne Winches here, but side view elevation on drawing 113 indicates 2 Ton winch. Please confirm required capacity of the winches?

Answer 16. The required capacity for the winches is 2 ton. Winches shall be hand winches complete with breaker, wire rope, & handle:

- 2 ton capacity on first layer, reduced capacity on subsequent layers
- Lever type hand crank
- Cast steel drum and spur type gearing
- Cast steel frame and steel load bearing components
- Replaceable bronze bushings
- Spring loaded holding dog with release handle
- Drum has 4” dia. Smooth core and 10” between drum flanges
- Frame has feet and holes for mounting
- Winch is painted with blue marine duty paint
- Submit shop drawings for engineer’s review
- Wire rope shall be 30 ft. long 7/16” dia. 6x37 IWRC improved plow steel

Question 17. For Twelve Miles Lake Dam, reference section 01 11 00, item 1.5.5 – The 12 Mile Lake Dam must be operational by no later than the date specified for such in Section 01 14 00 ... – Section 01 14 00 does not specify an operational date? – Please confirm required operational date?

Answer 17. The Twelve Mile Lake Dam reconstruction project must be complete by September 2020.

Question 18. For Twelve Mile Lake Dam, reference section 01 52 00 – item 1.8 – Security – Please confirm that full time site security person is required to be on site after working hours and during holidays for the duration of the project?

Answer 18. Refer to Question 14.

Question 19. For Twelve Mile Lake Dam, reference section 01 52 00 – item 1.9.8 – Who is responsible for payment of monthly invoices for bell and internet charges for Departmental Representative?

Answer 19. Refer to Question 15.



Question 20. Is there any Specifications, and Details available for Item 10- Lump-Sum Table Twelve Mile Dam: Supply and Install Dam Signage and Safety Measures?

Answer 20. The public safety measures plan which includes the location of signage and the safety boom is shown on drawing 117. The details of the safety boom and anchorage is shown on drawing 118. The signage details and specifications are shown on drawing 120-123.

Question 21. For 12 Mile Lake Dam Reconstruction, item 6 in Lump Sum Table – Removal for Salvage and reuse by PCA of components of Existing Data collection, storage and Transmission system, please determine the location of the transmission system on the drawings, provide more details, and the related specification Section (e.g. 13 or 16), as it shows Division 2 on the referred table.

Answer 21. Refer to response to question 13 for clarification on item 6.

Question 22. For Item 13- Supply and Installation of New Winches and Support Frames- the shown Specification Section is Division 5. We believe it should be Division 14; which is not shown in the Tender documents. Please clarify, and the Manufacturer requires more details in drawings, and the approved make.

Answer 22. Refer to Section 05 50 00 and the response to Question 16 in QA#2 for clarification.

Question 23. For Item 6- Removal and/or Replacement of Components of the Existing Data Collection, Storage and Transmission System- Lump-Sum Table of Horseshoe Dam & Twelve Mile Dam referred to Section 01 11 00 Work Summary: This Section Specification should be either 11 or 16, and we can't find this item on the drawings. Please clarify

Answer 23. Refer to response to question 13 for clarification on item 6.

Question 24. For Item 1-Concrete Removal-Unit Price Table – Horseshoe Lake Dam Reconstruction- You mentioned three sections of Specifications 03 30 00(this related to form and Pour concrete), 02 41 16(Demolition which is okay), and 31 23 33.01(which is related to Rock Excavation); please clarify.

Answer 24. Refer to Specification 02 41 16.

Question 25. Horseshoe Lake Dam Specifications: Section 35 49 25 – Turbidity Curtain was/is not included in the specifications, nor is there a unit price item identified for this project. Are we to assume we are not to use turbidity curtains for in-water work areas for this project?

Answer 25. The means and methods of the environmental protection plan (EPP), including sediment controls, are part of the Contractor's scope and the EPP must be approved by PCA Environmental Assessment Officer. As per the specifications Section 35 42 19 Clause 1.3.7, turbidity curtains are to be installed to prevent sediment from construction activities from entering the watercourse and being transported beyond the approved work area. As stated, this will only be feasible for certain situations and flow conditions. The EPP should consider the proposed staging plan developed by the contractor and resulting expected flow conditions in determining whether turbidity curtains are feasible and/or required to meet environmental requirements. Note that Environmental Procedures, including control work to provide effective environmental, waterbody, and fish habitat protection, are included under Lump Sum Item #1 General Site Work as per 01 22 01 Clause 1.5.2.14.



Question 26. Page 134 of the Document states the cast in place concrete shall have a minimum of 30% Type S Slag. In order to meet the slag requirement, we would need to have our cement supplier deliver it pre-mixed as the Haliburton Plant has a single cement silo. We have priced this in the past and found it to be quite expensive. Is there any other option?

Answer 26. The minimum slag content is included in the design requirement to control the heat of hydration and minimize the potential for cracking during the early curing of concrete. The minimum content shall be included into the bidder's price and that may include supplying premixed cement or consideration of other suppliers in the area that are able to deliver the specified mix within the time limitations set out in the specifications.

Question 27. For Item 9-12 Mile Dam Lake: Remove PCA Safety Boom: Should we remove the existing Anchor completely, or just cut flushed on the bedrock surface? As we consider breaking through the rock may be environmental issue. Please clarify.

Answer 27. The existing anchor is to be cut flush and smooth on the bedrock surface, with no burs or sharp edges.

Question 28. For Item 13-12 Mile Dam Lake: Supply and Installation of New Winches and Support Frames - Do you require one Winch on each Bay? Or one Movable Winch?

Answer 28. Four support frames are required (two per bay) as show on drawing 108. Four winches are required (one for each support frame).

Question 29. You stated in Section 01 14 00-Work Restriction- Sub-Item 1.4 Special Requirements- Horseshoe Dam- that The restriction period for in-water work is May 1 to July 15; which is logic , and we understand it; however: You stated in Section 01 14 00-Work Restriction- Sub-Item 1.4 Special Requirements- Horseshoe Dam- that The restriction period for in-water work is October 31 to May 31; which takes the Fall, Winter, and the next spring out of work. Is this a Typo? Or you meant it?

Answer 29. This reference to the October 31 to May 31 restriction period for in-water work is in the Twelve Mile specifications, Section 01 14 00 – Work Restriction – Item 1.4.1 and this is correct.

Question 30. How many steel half logs are required?

Answer 30. Two steel half logs are required.

Question 31. Section 03 30 00, item 2.4.1.2 states the cast in place concrete shall have a minimum of 30% Type S Slag. The Haliburton Plant only has a single cement silo, so they are not able to blend at the plant. The only alternative would be to get a pre-mixed cement from our supplier. They have priced this in the past, and found it to be very expensive. As the project is scheduled to run through next summer, they would need to use this pre-mix for all of their retail customers as well. Please confirm the requirement for 30% slag in the mix?

Answer 31. Refer to the response to question 25.

Question 32. Section 05 50 00- Part 2 Products- .9 Stoplog winch: WINTECH two (2) ton spur gear hand winch equipped with ten (10) inch drum length and disc brake handle:

1. Do you require the winch to have a circular wheel type crank or lever type crank?



2. Do you require standard marine duty paint? Or the marine coating option added for additional corrosion protection?
3. What the required length of cable to you want installed on the winch?
4. What end effect is required on the cable? (plain end, thimble eye, closed spelter socket, open spelter socket, etc...)

Answer 32. For responses to 1., 2., and 3. refer to response to question 16. The required end effect is to provide wire rope clamps with the thimble/teardrop insert at the lope after receipt of the owner supplied hooks.

Question 33. Horseshoe Dam: 31 11 00: To open access at the East and west sides, it requires to cut the existing trees; clearing and Grubbing. Is it what you described the work under this Section of Specifications?

Answer 33. Yes, clearing and grubbing may be required for access particularly on the east side at Horseshoe Lake Dam. Note that all clearing and grubbing will also need to meet environmental requirements described in the Basic Impact Assessment which will be distributed to the successful bidder.

Question 34. Section 03 30 00-2.4 CONCRETE MIX: 4 Additional mixes as required for hot weather concreting, cold weather concreting and low heat of hydration mix to meet the requirements of Table 20 and Clause 8.5.5 of CSA A23.1 Low shrinkage requirement. It is not clearly stated in the specifications.

- 1) Is it required to meet 0.04? If so, this does drive up the cost quite significantly on the 20mm mixes and we want to be clear whether this is the requirement.
- 2) Must a low-alkali cement be used or would a blend of Type GU and Slag to produce low-alkali equivalent be acceptable?
- 3) Air Range: Could we get the reasoning behind the maximum 6% air specified? CSA C1 specifies 4-7% and 5-8% with 40MM and 20MM aggregates, respectively. With the restriction, the acceptable ranges of 4-6% and 5-6% would be too tight and thus we wouldn't be able to guarantee this.
- 4) Could you clarify if the 35 MPa and RCP rating are both required at 28 days? Primary reasoning for this inquiry is due to the fact that the faster the requirement is to be met, it would result in an increased heat of hydration, which would not be preferable, especially in the case of mass concrete.

Answer 34. The concrete 'Class C-1 (modified)' mix was designed with accordance to CSA A23.1 and ACI 350M for the specific exposure conditions of a water retaining structure subject to erosion, wetting and drying, and freezing and thawing.

- 1) The concrete must meet the specified 0.04% shrinkage requirement.
- 2) A blend of Type GU and slag is acceptable. Use of slag must include minimum 30% content in order to reduce the heat of hydration during the initial curing stage of concrete.
- 3) The maximum air content specified in 03 30 00 Clauses 2.4.3.6 is required as per ACI 350M Clause 4.6 Protection Against Erosion. The code requirement specifies that a maximum air content of 6% is provided for concrete subjected to erosion. Additional requirements for erosion protection of concrete are specified in 03 30 00 Clauses 2.4.3.1, 2.4.3.5 and 2.4.3.7.
- 4) The 35 MPa and RCP rating are both required at 28 days. Test results must be provided for approval. Mass concrete requirements (for sections thicker than 500mm) are listed in Section 03 30 00 and include 40 mm nominal maximum aggregate size and minimum 30% type S slag. Depending on the construction schedule and temperatures during pours, to prevent shrinkage or high heat of hydration in the elements, the contractor may need to take other measures to lower initial placement temperature, to pour at night, and/or to cool aggregates. The contractor is



responsible for monitoring conditions and implementing additional measures during pours or during the curing period as necessary to meet the requirements specified.

Question 35. Horseshoe Lake Dam & Twelve Mile Lake Dam General Conditions:

- 1) Reference GC5.10 – Assessments and Damages for Late Completion – Please confirm the total daily dollar amount the Contractor would be charged for late completion for both of:
 - Horseshoe Lake Dam? and
 - Twelve Mile Lake Dam?

Answer 35. The finite daily costs cannot be calculated until such time of an occurrence due to the unknown costs that will be expensed. What would be considered the contractors responsibility would include, but not be limited to, the consultants' costs to administer the extended contract and oversee the construction with the site resident; land lease costs and any other costs associated with the lessor and their property use that may be affected.

Clarifications

Clarification 1. The in-water work for the Horseshoe Lake Dam project is to begin the week of July 22 as there will be a canoe race taking place at the site from July 16 to July 21. The Contractor can begin site preparation, tree removal, or trailer drop-off prior to that week.

Clarification 2. As is indicated in the specification in section 01 11 00, 1.5.1., the Contractor is to construct the sluice no. 2 cofferdam in such a manner that it can be operated through a control structure. Drawing 103 note no. 3 indicates that a flow of 90 cms must be passed through the site (sluice 1 and sluice 2 control structure) in a controlled manner including when the sill and pier 3 are demolished and are being constructed. The sluice 2 control structure will be needed should sluice no. 1 not be sufficient to handle the flow (1:20 event per drawing 103 note 6.). Volume control of flow is required. The contractor would be responsible for operating this if/when required and have provisions in place to open with 24 hours' notice.

REVISED DRAWINGS IN ATTACHMENTS

Named:

12M Drawing 108_Rev D

HLD Drawing 105_Rev D

ALL OTHER TERMS AND CONDITIONS OF THE ITT REMAIN UNCHANGED