

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

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**
11 Laurier St. / 11 rue Laurier
Place du Portage, Phase III
Core 0A1/Noyau 0A1
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

**THIS PROCUREMENT CONTAINS A SECURITY
REQUIREMENT**

Title - Sujet Latchford Dam Replacement Project	
Solicitation No. - N° de l'invitation EP731-130368/A	Date 2012-07-05
Client Reference No. - N° de référence du client R.009740.503	
GETS Reference No. - N° de référence de SEAG PW-\$\$FE-171-60795	
File No. - N° de dossier fe171.EP731-130368	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-08-16	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Searchwell, Suzette	Buyer Id - Id de l'acheteur fe171
Telephone No. - N° de téléphone (819) 956-6645 ()	FAX No. - N° de FAX (819) 956-8335
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Latchford, Ontario	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Consultant Services Division/Division des services
d'experts-conseils
11 Laurier St./11 Rue Laurier
3C2, Place du Portage
Phase III
Gatineau, Québec K1A 0S5

Delivery Required - Livraison exigée See Herein	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

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SI1 INTRODUCTION

1. Public Works and Government Services Canada (PWGSC) intends to retain an individual consulting firm or joint venture to provide the professional services for the project as set out in this Request for Proposal (RFP).
2. This is a single phase selection process. The nature of the requirement and the anticipated limited number of response by the industry leads PWGSC to believe that this approach will not unduly force a large number of firms to expend an overall unreasonable amount of effort in response to PWGSC. The strict time frames to implement this project do not allow sufficient time to conduct the usual two phases selection process.
3. Proponents responding to this RFP are requested to submit a full and complete proposal. The proposal will cover not only the qualifications, experience and organization of the proposed Consultant Team, but also the detailed approach to the work, and the pricing and terms offered. A combination of the technical and price of services submissions will constitute the proposal.

SI2 PROPOSAL DOCUMENTS

1. All instructions, general terms, conditions and clauses identified in the RFP by number, date and title, are hereby incorporated by reference into and form part of this solicitation and any resultant contract.

All instructions, general terms, conditions and clauses identified in the RFP by number, date and title, are set out in the Standard Acquisition Clauses and Conditions Manual (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) issued by Public Works and Government Services Canada.

2. The following are the proposal documents:
 - (a) Supplementary Instructions to Proponents (SI);
R1410T (2011-05-16), General Instructions to Proponents (GI);
Submission Requirements and Evaluation (SRE);
 - (b) the general terms, conditions and clauses, as amended, identified in the Agreement clause;
 - (c) Project Briefl;
 - (d) the document entitled "Doing Business";
 - (e) the **Security Requirements Check List (SRCL)**;

- (f) any amendment to the solicitation document issued prior to the date set for receipt of proposals; and
 - (g) the proposal, Declaration/Certifications Form and Price Proposal Form.
3. Submission of a proposal constitutes acknowledgment that the Proponent has read and agrees to be bound by these documents.

SI3 QUESTIONS OR REQUEST FOR CLARIFICATION

Questions or requests for clarification during the solicitation period must be submitted in writing to the Contracting Authority named on the RFP - Page 1 as early as possible. Enquiries should be received no later than ten (10) working days prior to the closing date identified on the front page of the Request for Proposal. Enquiries received after that date may not be answered prior to the closing date of the solicitation.

SI4 CANADA'S TRADE AGREEMENTS

This procurement is subject to the provisions of the North American Free Trade Agreement (NAFTA), the World Trade Organization - Agreement on Government Procurement (WTO-AGP).

SI5 CHANGES TO CLAUSE R1410T (2011-05-16) General Instructions to Proponents (GI)

Section "GI Code of Conduct for Procurement" is deleted and replaced with the following:

GI1 Code of Conduct and Certifications

1. Proponents must comply with the Code of Conduct for Procurement. Furthermore, in addition to the Code of Conduct for Procurement, proponents must respond to bid solicitations in an honest, fair and comprehensive manner, accurately reflect their capacity to satisfy the requirements stipulated in the bid solicitation and resulting contract, submit bids and enter into contracts only if they will fulfill all obligations of the Contract. To ensure fairness, openness and transparency in the procurement process, the following activities are prohibited:
 - (a) payment of a contingency fee to a person to whom the Lobbying Act (1985, c. 44 (4th Supp.)) applies;
 - (b) corruption, collusion, bid-rigging or any other anti-competitive activity in the procurement process.
2. By submitting a proposal, the Proponent certifies that except for those offences where a criminal pardon has been obtained or leniency granted, neither the Proponent nor any of the Proponent's parent, subsidiaries or other affiliates has ever been convicted of a criminal offence in respect of

the activities stated in (a) or (b) above or is the subject of outstanding criminal charges in respect of such activities filed subsequent to September 1, 2010.

3. Proponents further understand that the commission of certain offences will render them ineligible to be awarded a contract. By submitting a proposal, the Proponent certifies that except for those offences where a criminal pardon has been obtained, neither the Proponent nor any of the Proponent's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges in respect of an offence under any of the following provisions:

section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud committed against Her Majesty*) or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or under paragraph 80(1)(d) (*False entry, certificate or return*) subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*.

4. For the purpose of this section, business concerns, organizations or individuals are Proponent's affiliates if, directly or indirectly, 1) either one controls or has the power to control the other, or 2) a third party has the power to control both. Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the charges or convictions contemplated in this section which has the same or similar management, ownership, or principal employees as the Proponent that is charged or convicted, as the case may be.
5. The Contracting Authority will declare non-responsive any proposal in respect of which the information contained in the certifications contemplated above is determined to be untrue in any respect by the Contracting Authority.
6. In circumstances where a proponent or any of the Proponent's parent, subsidiaries or other affiliates has pled guilty of an offence contemplated in subsections 1 and 3, the Proponent must provide with its proposal, a certified copy of confirming documentation from the Competition Bureau of Canada indicating that leniency has been granted, or a certified copy of confirming documentation from the National Parole Board indicating that a criminal pardon has been obtained, in relation to such offences.
7. The Proponent or any of the Proponent's parent, subsidiaries or other affiliates must remain free and clear of any charges or convictions contemplated in subsections 1 and 3 during the period of any resulting contract arising from this bid solicitation.

SI6 SECURITY REQUIREMENT

1. **This procurement contains a Security Requirement as described in the Supplementary Conditions.**
2. **Foreign proponents shall contact the Contracting Authority for a specific Security clause before submitting their proposal.**

SI7 - WEB SITES

The connection to some of the Web sites in the RFP is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Employment Equity Act

<http://laws.justice.gc.ca/en/E-5.401/index.html>

Federal Contractors Program (FCP)

<http://www.hrsdc.gc.ca/eng/labour/equality/fcp/index.shtml>

Certificate of Commitment to Implement Employment Equity form LAB 1168

<http://www.servicecanada.gc.ca/cgi-bin/search/eforms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e>

Code of Conduct for Procurement

<http://www.tpsgc-pwgsc.gc.ca/app-acq/cndt-cndct/contexte-context-eng.html>

Lobbying Act

<http://laws.justice.gc.ca/en/L-12.4/?noCookie>

Contracts Canada

<https://buyandsell.gc.ca/>

Supplier Registration Information

<https://srisupplier.contractscanada.gc.ca>

Consultant Performance Evaluation Report Form

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/2913-1.pdf>

Canadian economic sanctions

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

National Joint Council (NJC) Travel Directive

<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php>

TERMS, CONDITIONS AND CLAUSES

AGREEMENT

1. The Consultant understands and agrees that upon acceptance of the offer by Canada, a binding Agreement shall be formed between Canada and the Consultant and the documents forming the Agreement shall be the following:

- (a) the Front Page and this Agreement clause;
- (b) the General Terms, Conditions and Clauses, as amended, identified as:
 - R1210D (2011-05-16), GC1 - General Provisions
 - R1215D (2011-05-16), GC2 - Administration of the Contract
 - R1220D (2011-05-16), GC3 - Consultant Services
 - R1225D (2011-05-16), GC4 - Intellectual Property
 - R1230D (2011-05-16), GC5 - Terms of Payment
 - R1235D (2011-05-16), GC6 - Changes
 - R1240D (2011-05-16), GC7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2011-05-16), GC8 - Dispute Resolution
 - R1250D (2011-05-16), GC9 - Indemnification and Insurance
 - Supplementary Conditions
 - Agreement Particulars
- (c) Project Brief ;
- (d) the document entitled "Doing Business";
- (e) the Security Requirements Check List (SRCL);**
- (f) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
- (g) the proposal, the Declaration/Certifications Form and the Price Proposal Form.

2. The documents identified above by title, number and date are hereby incorporated by reference into and form part of this Agreement, as though expressly set out herein, subject to any other express terms and conditions herein contained.

The documents identified above by title, number and date are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Web site: <http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>

3. If there is a discrepancy between the wording of any documents that appear on the following list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) any amendment or variation in the Agreement that is made in accordance with the terms and conditions of the Agreement;
- (b) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;

- (c) this Agreement clause;
- (d) Supplementary Conditions;
- (e) General Terms, Conditions and Clauses;
- (f) Agreement Particulars;
- (g) Project Brief ;
- (h) the document entitled "Doing Business";
- (i) the document entitled "**Security Requirement Check List**";
- (j) the proposal.

SUPPLEMENTARY CONDITIONS (SC)

SC1 SECURITY REQUIREMENTS

SECURITY REQUIREMENT FOR CANADIAN SUPPLIER:

1. The Consultant must, at all times during the performance of the Contract, hold a valid Designated Organization Screening (DOS), issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).
2. The Consultant personnel requiring access to sensitive work site(s) must EACH hold a valid RELIABILITY STATUS, granted or approved by CISD/PWGSC.
3. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.
4. The Consultant must comply with the provisions of the:
 - (a) Security Requirements Check List and security guide (if applicable), attached at Appendix E;
 - (b) Industrial Security Manual (Latest Edition).

SC2 LANGUAGE REQUIREMENTS

1. Communication between Canada and the Consultant shall be in the language of choice of the Consultant Team, which shall be deemed to be the language of the Consultant's proposal.
2. The Consultant's services during construction tender call (such as addenda preparation, tenderers' briefing meetings, technical answers to questions by bidders) shall be provided expeditiously in both languages, as necessary.
3. The Consultant's services during construction shall be provided in the language of choice of the Contractor. The successful Contractor will be asked to commit to one or

other of Canada's official languages upon award of the Construction Contract and, thereafter construction and contract administration services will be conducted in the language chosen by the Contractor.

4. Other required services in both of Canada's official languages (such as construction documentation) are described in detail in the Project Brief.
5. The Consultant Team, including the Prime Consultant, Sub-Consultants and Specialists Consultants shall ensure that the services being provided in either language shall be to a professional standard.

SC3 CHANGES TO CLAUSE R1210D (2011-05-16), GC 1 - General Provisions

Sections GC1.3 and GC1.4 are amended as follows:

Title and text of GC1.3 are deleted and the title "Not applicable" is inserted.

Text under subsection GC1.4.2 is deleted and replaced with "An assignment of the Agreement without such consent shall not relieve the Consultant or the assignee from any obligation under the Agreement, or impose any liability upon Canada."

Section GC1.13 Code of Conduct for Procurement is deleted and replaced with the following:

GC1.13 Code of Conduct and Certifications

1. The Consultant agrees to comply with the Code of Conduct for Procurement and to be bound by its terms. Furthermore, in addition to the Code of Conduct for Procurement, the Consultant must comply with the terms set out in this section.
2. The Consultant certifies that except for those offences where a criminal pardon has been obtained or leniency granted, neither the Consultant nor any of the Consultant's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges subsequent to September 1, 2010 in respect of any of the following:
 - (a) payment of a contingency fee to a person to whom the Lobbying Act (1985, c. 44 (4th Supp.)) applies;
 - (b) corruption, collusion, bid-rigging or any other anti-competitive activity in the procurement process.
3. The Consultant certifies that except for those offences where a criminal pardon has been obtained, neither the Consultant nor any of the Consultant's parent, subsidiaries or other affiliates has ever been convicted or is the subject of outstanding criminal charges in respect of any of the following:
 - (a) section 121 (*Frauds on the government and Contractor subscribing to election fund*), section 124 (*Selling or Purchasing Office*), section 380 (*Fraud committed against Her Majesty*) or section 418 (*Selling defective stores to Her Majesty*) of the Criminal Code of Canada, or

- (b) paragraph 80(1)(d) (*False entry, certificate or return*), subsection 80(2) (*Fraud against Her Majesty*) or section 154.01 (*Fraud against Her Majesty*) of the *Financial Administration Act*.

4. For the purpose of this section, business concerns, organizations or individuals are Consultant's affiliates if, directly or indirectly:

- (a) either one controls or has the power to control the other, or
- (b) a third party has the power to control both.

Indicia of control, include, but are not limited to, interlocking management or ownership, identity of interests among family members, shared facilities and equipment, common use of employees, or a business entity created following the charges or convictions contemplated in this section which has the same or similar management, ownership, or principal employees as the Consultant that is charged or convicted, as the case may be.

5. In circumstances pursuant to subsections 2 and 3, where the Consultant or any of the Consultant's parent, subsidiaries or other affiliates has obtained a criminal pardon or is granted leniency in relation to such offences, the Consultant must provide a certified copy of confirming documentation from the National Parole Board or the Competition Bureau of Canada.
6. If the Consultant or any of the Consultant's parent, subsidiaries or other affiliates does not remain free and clear of any charges or convictions mentioned at subsections 2 and 3 during the period of the contract, Canada reserves the right, pursuant to the default provision of the contract, to terminate the contract for default.

AGREEMENT PARTICULARS

The Agreement Particulars will be issued at time of award of contract and will identify the fee to be paid to the Consultant for the services determined in the Price Proposal Form.

APPENDIX A - TEAM IDENTIFICATION FORMAT

For details on this format, please see SRE in the Request For Proposal.

The prime consultant and other members of the Consultant Team shall be, or eligible to be, licensed, certified or otherwise authorized to provide the necessary professional services to the full extent that may be required by provincial or territorial law.

I. Prime Consultant (Proponent - Structural Engineer-Dam Engineering):

Firm or Joint Venture Name:

.....

.....

Key Individuals and provincial professional licensing status:

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.....

.....

II. Key Sub Consultants / Specialists:

Civil Engineer (Hydrology and Hydraulics Specialist)

Firm Name:

.....

.....

Key Individuals and provincial professional licensing status:

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Solicitation No. - N° de l'invitation

EP731-130368/A

Client Ref. No. - N° de réf. du client

R.009740.503

Amd. No. - N° de la modif.

File No. - N° du dossier

fe171EP731-130368

Buyer ID - Id de l'acheteur

fe171

CCC No./N° CCC - FMS No/ N° VME

Geotechnical Engineer

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status:

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.....

Environmental Assessment and Monitoring Specialist

Firm Name:
.....
.....

Key Individuals and provincial professional licensing status:

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Solicitation No. - N° de l'invitation

EP731-130368/A

Client Ref. No. - N° de réf. du client

R.009740.503

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fe171EP731-130368

Buyer ID - Id de l'acheteur

fe171

CCC No./N° CCC - FMS No/ N° VME

APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address:

Mailing Address

(if different than street address)

City:

City:

Prov./Terr./State:

Prov./Terr./State:

Postal/ZIP Code:

Postal/ZIP Code:

Telephone Number:()

Fax Number: ()

E-Mail:

Procurement Business Number:

Type of Organization: _____ Sole Proprietorship _____ Partnership _____ Corporation _____ Joint Venture	Size of Organization: Number of Employees _____ Graduate Architects / Professional Engineers _____ Other Professionals _____ Technical Support _____ Other _____
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APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Federal Contractors Program (FCP) - Certification

Pursuant to GI 12, The Proponent must complete the following certification.

1. The Proponent, or, if the Proponent is a joint venture the member of the joint venture, certifies its status with FCP, as follows:

The Proponent or the member of the joint venture

- (a) ☐ is not subject to the FCP, having a workforce of less than 100 full- time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada,
- (b) ☐ is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c.44;
- (c) ☐ is subject to the requirements of the FCP, having a workforce of 100 or more full time or part-time permanent employees, or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) ☐ is subject to the FCP, and has a valid certificate number as follows:
_____ (e.g. has not been declared an ineligible contractor by HRSDC).

Please check the appropriate item above. Further information on the FCP is available on the HRSDC Web site.

2. If the Proponent does not fall within the exceptions enumerated in 1. (a) or (b), or does not have a valid certificate number confirming its adherence to the FCP, the Proponent must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)

Former Public Servant (FPS) - Certification

Contracts with former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts with FPS, proponents must provide the information required below.

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- (a) an individual;
- (b) an individual who has incorporated;
- (c) a partnership made of former public servants; or
- (d) a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means, in the context of the fee abatement formula, a pension or annual allowance paid under the *Public Service Superannuation Act* (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the *Supplementary Retirement Benefits Act*, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the *Canadian Forces Superannuation Act*, R.S., 1985, c. C-17, the *Defence Services Pension Continuation Act*, 1970, c. D-3, the *Royal Canadian Mounted Police Pension Continuation Act*, 1970, c. R-10, and the *Royal Canadian Mounted Police Superannuation Act*, R.S., 1985, c. R-11, the *Members of Parliament Retiring Allowances Act*, R.S., 1985, c. M-5, and that portion of pension to the *Canada Pension Plan Act*, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

Is the Proponent a FPS in receipt of a pension as defined above?

YES () NO ()

If so, the Proponent must provide the following information:

- (a) name of former public servant;
- (b) date of termination of employment or retirement from the Public Service.

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)**Work Force Reduction Program**

Is the Proponent a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? YES () NO ()

If so, the Proponent must provide the following information:

- (a) name of former public servant;
- (b) conditions of the lump sum payment incentive;
- (c) date of termination of employment;
- (d) amount of lump sum payment;
- (e) rate of pay on which lump sum payment is based;
- (f) period of lump sum payment including start date, end date and number of weeks;
- (g) number and amount (professional fees) of other contracts subject to the restrictions of a work force reduction program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including the Goods and Services Tax or Harmonized Sales Tax.

Certification

By submitting a proposal, the Proponent certifies that the information submitted by the Proponent in response to the above requirements is accurate and complete.

APPENDIX B - DECLARATION/CERTIFICATIONS FORM (CONT'D)**Name of Proponent:****DECLARATION:**

I, the undersigned, being a principal of the proponent, hereby certify that the information given on this form and in the attached proposal is accurate to the best of my knowledge. If any proposal is submitted by a partnership or joint venture, then the following is required from each component entity.

.....
name signature

.....
title

I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

.....
name signature

.....
title

I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

.....
name signature

.....
title

I have authority to bind the Corporation / Partnership / Sole Proprietorship / Joint Venture

During proposal evaluation period, PWGSC contact will be with the following person:_____.

Telephone Number: () _____ Fax Number: () _____

E-mail: _____

This Appendix "B" should be completed and submitted with the proposal, but may be submitted afterwards as follows: if Appendix "B" is not completed and submitted with the proposal, the Contracting Authority will so inform the Proponent and provide the Proponent with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the proposal non-responsive.

APPENDIX C - PRICE PROPOSAL FORM

INSTRUCTIONS: Complete this Price Proposal Form and submit in a **separate sealed envelope** with the Name of Proponent, Name of Project, PWGSC Solicitation Number, and the words "PRICE PROPOSAL FORM" typed on the outside of the envelope. Price Proposals are not to include GST/HST.

PROPOSERS SHALL NOT ALTER THIS FORM

Project Title:

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES, including all related cost, services and deliverables (in Canada's official languages) to complete the services specified in the Project Brief and in the RFP documents:

- ♦ **Fixed Fee** (R1230D (2011-05-16), GC 5 - Terms of Payment)

SERVICES	FIXED FEE
RS 2 - Pre-Design/ Analysis of Project Requirements	\$.....
RS 3 - Design Concept	\$.....
RS 4 - Design Development	\$.....
RS 5 - Construction Documents	<u>\$.....</u>

MAXIMUM FIXED FEES **\$.....**

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

OPTIONAL REQUIRED SERVICES, including all related cost, services and deliverables (in Canada's official languages) to complete the services specified in the Project Brief and in the RFP documents:

The Consultant hereby grants to Canada an irrevocable option to acquire the services specified under sections RS6, RS7 and RS 8, under the same terms and conditions as contained in the Contract, and in accordance with the rates and fees identified below. Canada is not obliged to exercise this option. This option shall only be exercised by the Contracting Authority by providing notification in writing through a formal Contract Amendment.

♦ **Fixed Fee** (R1230D (2011-05-16), GC 5 - Terms of Payment)

SERVICES	FIXED FEE
RS 6 - Tender Call, Bid Evaluation & Construction Award	\$.....
RS 7 - Construction and Contract Administration	\$.....
MAXIMUM FIXED FEES	\$..... (1)

♦ **Time Based Fees** (R1230D (2011-05-16), GC 5 - Terms of Payment)

RS 8 - Resident Site Services During Construction*	ESTIMATED HOURS Column A	HOURLY RATES** Column B	TIME BASED FEE Columns AxB
Resident Engineer	1200	\$.....	\$.....
Resident Inspector	2800	\$.....	\$.....
MAXIMUM TIME BASED FEES			\$.....(2)

*Payment will be based on actual hours spent. Travel time and/or expenses will not be reimbursed separately.

** All inclusive hourly rate is applicable to both normal working hours and any other shift work as required.

TOTAL FEE FOR OPTIONAL REQUIRED SERVICES (1)+(2) \$.....

TOTAL COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

Total Fee for Required Services	\$.....
Total Fee for Optional Required Services	\$.....
Total Evaluated Fee	\$.....

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

The following will NOT form part of the evaluation process

Canada may accept or reject any of the following fees, disbursements and/or hourly rates.
Canada reserves the right to negotiate on these fees, disbursements and/or hourly rates.

DISBURSEMENTS

At cost without allowance for mark-up or profit, supported by invoices/receipts - see clause R1230D (2011-05-16), GC 5 - Terms of Payment, section GC5.12

Disbursements:

Room rental for Environmental Assessment Open-house - RS 2.2	\$ 5,000.00
Reproduction and delivery costs of technical documentation Additional to that specified in the Project Brief with the prior Approval and authorization of the Departmental Representative	\$20,000.00
Equipment rental (barges, drilling equipment, access equipment) - RS 2.2	\$50,000.00
Coring inspection (boreholes) and related laboratory testing - RS 2.2	<u>\$30,000.00</u>
MAXIMUM AMOUNT FOR DISBURSEMENTS	\$105,000.00

Solicitation No. - N° de l'invitation

EP731-130368/A

Client Ref. No. - N° de réf. du client

R.009740.503

Amd. No. - N° de la modif.

File No. - N° du dossier

fe171EP731-130368

Buyer ID - Id de l'acheteur

fe171

CCC No./N° CCC - FMS No/ N° VME

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

THE FOLLOWING HOURLY RATES MAY BE USED FOR FUTURE CONTRACT AMENDMENTS

Principals

Name	\$ per hour
.....	\$.....
.....	\$
.....	\$
.....	\$
.....	\$.....
.....	\$
.....	\$
.....	\$
.....	\$.....
.....	\$
.....	\$
.....	\$
.....	\$
.....	\$
.....	\$
.....	\$
.....	\$
.....	\$

Solicitation No. - N° de l'invitation

EP731-130368/A

Amd. No. - N° de la modif.

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fe171

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R.009740.503

File No. - N° du dossier

fe171EP731-130368

CCC No./N° CCC - FMS No/ N° VME

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

Staff

Name / Position	\$ per hour
.....
.....
.....
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.....
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END OF PRICE PROPOSAL FORM

APPENDIX “E”

Security Requirements Check List



Government of Canada
Gouvernement du Canada

Contract Number / Numéro du contrat

EP731-13-0368

Security Classification / Classification de sécurité
UNCLASSIFIED

SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine		Public Works and Government Services Canada	2. Branch or Directorate / Direction générale ou Direction RPB - Major Crown Project	
3. a) Subcontract Number / Numéro du contrat de sous-traitance			3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant	
4. Brief Description of Work / Brève description du travail Latchford Dam Replacement Project - Engineering Design Services				
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. Indicate the type of access required / Indiquer le type d'accès requis				
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c.) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c.)			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.			<input type="checkbox"/> No Non	<input checked="" type="checkbox"/> Yes Oui
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?			<input checked="" type="checkbox"/> No Non	<input type="checkbox"/> Yes Oui
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès				
Canada <input type="checkbox"/>		NATO / OTAN <input type="checkbox"/>		Foreign / Étranger <input type="checkbox"/>
7. b) Release restrictions / Restrictions relatives à la diffusion				
No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>		All NATO countries Tous les pays de l'OTAN <input type="checkbox"/>		No release restrictions Aucune restriction relative à la diffusion <input type="checkbox"/>
Not releasable À ne pas diffuser <input type="checkbox"/>				
Restricted to: / Limité à : <input type="checkbox"/>		Restricted to: / Limité à : <input type="checkbox"/>		Restricted to: / Limité à : <input type="checkbox"/>
Specify country(ies): / Préciser le(s) pays :		Specify country(ies): / Préciser le(s) pays :		Specify country(ies): / Préciser le(s) pays :
7. c) Level of information / Niveau d'information				
PROTECTED A PROTÉGÉ A <input type="checkbox"/>		NATO UNCLASSIFIED NATO NON CLASSIFIÉ <input type="checkbox"/>		PROTECTED A PROTÉGÉ A <input type="checkbox"/>
PROTECTED B PROTÉGÉ B <input type="checkbox"/>		NATO RESTRICTED NATO DIFFUSION RESTREINTE <input type="checkbox"/>		PROTECTED B PROTÉGÉ B <input type="checkbox"/>
PROTECTED C PROTÉGÉ C <input type="checkbox"/>		NATO CONFIDENTIAL NATO CONFIDENTIEL <input type="checkbox"/>		PROTECTED C PROTÉGÉ C <input type="checkbox"/>
CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>		NATO SECRET NATO SECRET <input type="checkbox"/>		CONFIDENTIAL CONFIDENTIEL <input type="checkbox"/>
SECRET SECRET <input type="checkbox"/>		COSMIC TOP SECRET COSMIC TRÈS SECRET <input type="checkbox"/>		SECRET SECRET <input type="checkbox"/>
TOP SECRET TRÈS SECRET <input type="checkbox"/>				TOP SECRET TRÈS SECRET <input type="checkbox"/>
TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>				TOP SECRET (SIGINT) TRÈS SECRET (SIGINT) <input type="checkbox"/>



Government
of Canada

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EP731-13-0368

Security Classification / Classification de sécurité
UNCLASSIFIED

PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?

Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?

☒ No ☐ Yes
Non Oui

If Yes, indicate the level of sensitivity:

Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?

Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?

☒ No ☐ Yes
Non Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :

Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

- | | | | |
|---|---|---|--|
| <input checked="" type="checkbox"/> RELIABILITY STATUS
COTE DE FIABILITÉ | <input type="checkbox"/> CONFIDENTIAL
CONFIDENTIEL | <input type="checkbox"/> SECRET
SECRET | <input type="checkbox"/> TOP SECRET
TRÈS SECRET |
| <input type="checkbox"/> TOP SECRET- SIGINT
TRÈS SECRET - SIGINT | <input type="checkbox"/> NATO CONFIDENTIAL
NATO CONFIDENTIEL | <input type="checkbox"/> NATO SECRET
NATO SECRET | <input type="checkbox"/> COSMIC TOP SECRET
COSMIC TRÈS SECRET |
| <input type="checkbox"/> SITE ACCESS
ACCÈS AUX EMPLACEMENTS | | | |

Special comments: Only security screened personnel to be utilized.

Commentaires spéciaux :

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.

REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?

Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?

☒ No ☐ Yes
Non Oui

If Yes, will unscreened personnel be escorted?

Dans l'affirmative, le personnel en question sera-t-il escorté?

☒ No ☐ Yes
Non Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?

Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?

☒ No ☐ Yes
Non Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?

Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?

☒ No ☐ Yes
Non Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?

Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?

☒ No ☐ Yes
Non Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?

Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?

☒ No ☐ Yes
Non Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?

Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?

☒ No ☐ Yes
Non Oui



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PART C - (continued) / PARTIE C - (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.

Les utilisateurs qui remplissent le formulaire manuellement doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.

Dans le cas des utilisateurs qui remplissent le formulaire en ligne (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category Catégorie	PROTECTED PROTÉGÉ			CLASSIFIED CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL CONFIDENTIEL	SECRET	TOP SECRET TRÈS SECRET	NATO RESTRICTED	NATO CONFIDENTIAL	NATO SECRET	COSMIC TOP SECRET	PROTECTED PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET
							NATO DIFFUSION RESTREINTE	NATO CONFIDENTIEL		COSMIC TRÈS SECRET	A	B	C			
Information / Assets Renseignements / Biens Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?

La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE?

☒ No ☐ Yes
Non Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?

La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE?

☒ No ☐ Yes
Non Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).

Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquez qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).

SUBMISSION REQUIREMENTS AND EVALUATION

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- SRE 1.2 Calculation of Total Score

SRE 2 PROPOSAL REQUIREMENTS

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- SRE 2.3 Consequence of non-compliance

SRE 3 SUBMISSION REQUIREMENTS AND EVALUATION

- SRE 3.1 Mandatory Requirements
- SRE 3.2 Rated Requirements
- SRE 3.3 Evaluation and Rating

SRE 4 PRICE OF SERVICES

SRE 5 TOTAL SCORE

SRE 6 SUBMISSION REQUIREMENTS – CHECKLIST

SUBMISSION REQUIREMENTS AND EVALUATION

SRE 1 GENERAL INFORMATION

SRE 1.1 Reference to the Selection Procedure

An "Overview of the Selection Procedure" can be found in R1410T General Instructions to Proponents (GI 3).

SRE 1.2 Calculation of Total Score

For this project the Total Score will be established as follows:

Technical Rating x 90%	=	Technical Score (Points)
<u>Price Rating x 10%</u>	=	<u>Price Score (Points)</u>
Total Score	=	Max. 100 Points

SRE 2 PROPOSAL REQUIREMENTS

SRE 2.1 Requirement for Proposal Format

The following proposal format requirements should be implemented when preparing the proposal:

- a) Submit **one (1) bound original plus five (5) bound copies of the proposal.**
- b) Paper size should be - 216mm x 279mm (8.5" x 11").
- c) Minimum font size - 11 point Times New Roman or equivalent.
- d) Minimum margins - 12 mm left, right, top, and bottom.
- e) Double-sided submissions are preferred.
- f) One (1) 'page' means one side of a 216mm x 279mm (8.5" x 11") sheet of paper.
- g) 279mm x 432 mm (11" x 17") fold-out sheets for spreadsheets, organization charts etc. will be counted as two pages.
- h) The order of the proposals should follow the order established in the SRE section of the Request for Proposal (RFP).

SRE 2.2 Specific Requirements for Proposal Format

The maximum number of pages (including text and graphics) to be submitted for the Rated Requirements under SRE 3.2 is forty **(40) pages**.

The following are not part of the page limitation mentioned above:

- a) Covering letter;
- b) Front page of the RFP;
- c) Front page of solicitation amendment(s) to the RFP, if any;

- d) Consultant Team Identification (Appendix A);
- e) Declaration Form (Appendix B); and
- f) Price Proposal Form (Appendix C)

SRE 2.3 Consequence of non-compliance

All pages that extend beyond the abovementioned page limitation, as well as any other attachments, will be extracted from the proposal and will not be forwarded to the PWGSC Evaluation Board members for evaluation.

SRE 3 SUBMISSION REQUIREMENTS AND EVALUATION

SRE 3.1 MANDATORY REQUIREMENTS

Failure to meet the Mandatory Requirements will render the proposal as non-responsive and no further evaluation will be carried out.

SRE 3.1.1 Licensing, Certification or Authorization

The Proponent shall be a Structural Engineer (Dam Engineer), licensed or eligible to be licensed, certified or otherwise authorized to provide the necessary professional dam engineering services to the full extent that may be required by provincial law in the province of Ontario.

SRE 3.1.2 Consultant Team Identification

The Consultant Team must include the following:

- a) **Proponent (Prime Consultant)**
 - structural engineer (dam engineering)
- b) **Key Sub-Consultants and/or Specialists**
 - civil engineer (hydrology and hydraulics specialist)
 - geotechnical engineer
 - environmental assessment and monitoring specialist
- c) **Information Required**
 - Names of firm and of key personnel to be assigned to the project.
 - Indicate current license and, as required, indicate how all other provincial licensing requirements will be met.
 - In the case of a Joint Venture identify the existing or proposed legal form of the Joint Venture (refer to R1410T General Instructions to Proponents GI 9 - Limitation of Submissions).
 - An example of an acceptable format (typical) for submission of the team identification information is provided in Appendix A.

SRE 3.1.3 Declaration/Certification Form(s)

Proponents must complete, sign and submit the following:

- Appendix B, Declaration/Certifications Form as required.

SRE 3.1.4 Industrial and Facility Security Requirements

The Proponent must hold a valid Facility Security Clearance at the level of DOS, issued by the Canadian Industrial Security Directorate (CISD), PWGSC, prior to being issued a contract. Canada will not delay the award to allow proponents to obtain the required security clearance. Verifications will be made through CISD to confirm the security clearance status of the Proponent. Failure to comply with this requirement will render the proposal non-responsive and no further consideration will be given to the Proposal.

SRE 3.2 RATED REQUIREMENTS

Proposals meeting the Mandatory Requirements will be evaluated in accordance with the criteria that follow. The clarity of the proposal writing will form part of the evaluation (use of language, document structure, conciseness and completeness of the response).

SRE 3.2.1 Achievements of Proponent on Projects

Describe the Proponent's accomplishments, achievements and experience as prime consultant on projects.

Select a **maximum** of three (3) projects undertaken within the last ten (10) years. Joint venture submissions are not to exceed the maximum number of projects. Only the first three (3) projects listed in sequence will receive consideration and any others will receive none as though not included.

The Proponent should provide for each project:

- a) A clear indication of how the project is comparable/relevant to the project in this RFP;
- b) A brief description of the project's intent, objectives, scope, budget and schedule, (including engineering and construction, and resident site services);
- c) A brief description of challenges and problems that were encountered during the project;
- d) A brief description of design/construction approaches used to meet project objectives, scope, budget and schedule requirements; and to address challenges and resolve problems;
- e) Final costs (engineering and construction , and resident site services), and an explanation of any variances with the initial project budget/estimates;
- f) Final schedule / completion dates (engineering and construction , and resident site services), and an explanation of any variance with the initial project schedule;
- g) An explanation of any changes in the project scope (engineering and construction , and resident site services) during the project implementation;
- h) An identification of key disciplines involved in the project, the names of the firms (e.g Prime Consultant or Sub-consultant) who provided the expertise and the names of key personnel who provided the services;

- i) If the project was carried out as a Joint Venture, provide the names and description of responsibilities of each of the key firms involved;
- j) Client References including: name, address, phone, fax and e-mail address of client contact at working level. References must be current and complete.

SRE 3.2.2 Achievements of Sub-Consultants / Specialists on Projects

Describe the accomplishments, achievements and experience either as Prime Consultant or in a Sub-consultant capacity on projects.

If the Proponent proposes to provide specialist services (e.g.: civil engineer, geotechnical engineer, environmental assessment and monitoring specialist, etc.) which might otherwise be performed by a Sub-consultant, this should be reflected here.

Select a **maximum** of three (3) projects undertaken within the last ten (10) years per key sub consultant or specialist identified in SRE 3.1.2 b). Only the first three (3) projects listed in sequence (per key sub consultant or specialist) will receive consideration and any others will receive none as though not included.

The Proponent should provide for each project (for each key Sub-consultant / Specialist):

- a) A clear indication of how the project is comparable/relevant to the project in this RFP;
- b) A brief description of the overall project intent, objectives, scope, budget and schedule, (including engineering and construction);
- c) Where services were provided on multi-disciplinary projects, indicate also the portion of the project scope, budget and schedule that was under the responsibility of the Sub-consultant / Specialist;
- d) A brief description of challenges and problems that were encountered by the Sub-consultant / Specialist during the project;
- e) A brief description of design/construction approaches, used by the Sub-consultant / Specialist, to meet project intent, objectives, scope, budget and schedule requirements; and to address challenges and resolve problems;
- f) A comparison between initial project budget and final costs (engineering and construction), under the responsibility of the Sub-consultant / Specialist, and explanation of any variance;
- g) A comparison between initial project schedule and final schedule / completion dates (engineering and construction), under the responsibility of the Sub-consultant / Specialist, and explanation of any variance;
- h) An explanation of any changes in project scope (engineering and construction), under the responsibility of the Sub-consultant / Specialist, during the project implementation;
- i) A summary of knowledge and experience in the design and construction of structures similar to the one involved in the project in this RFP;
- j) Client References including: name, address, phone, fax and e-mail address of client contact at working level. References must be current and complete.
- k) For the Environmental Assessment and Monitoring Specialist: A list of at least three (3) federal level Environmental Assessments, conducted in accordance with the Canadian

Environmental Assessment Act, since 2005 for project similar to the one in this Project Brief.

SRE 3.2.3 Expertise and Experience of Key Personnel

Describe the expertise and experience of key personnel to be assigned to this project regardless of their past association with the current Proponent firm.

This is the opportunity to emphasize the strengths of the individuals on the team, to recognize their past responsibilities, commitments and achievements.

The Proponent should provide, for each key personnel:

- a) Individual's name, title and brief description of current functions; and name of firm;
- b) A description of expertise and experience (with number of years) and demonstration of how they are relevant to the specific needs of this RFP (use references to SRE 3.2.1 and SRE 3.2.2 as appropriate);
- c) A demonstration of roles, responsibilities and degree of involvement on past projects that will corroborate the person's expertise and experience;
- d) Details regarding professional accreditation (province, year, status, etc.)
- e) Involvement in any technical committees and associations;
- f) Special accomplishments / achievements / awards.

SRE 3.2.4 Understanding of the Project

Demonstrate understanding of the objectives of the project and of its functional and technical requirements. Also, demonstrate understanding of important issues, constraints and challenges that will affect the delivery and implementation of the project.

The Proponent should provide:

Identification and brief description of the key elements of each of the following areas, as well as a broad overview of how the Proponent will address them:

- a) Project specific objectives;
- b) Functional and technical requirements;
- c) Important issues, constraints and challenges;
- d) Delivering projects in a government environment (broad government priorities, objectives, regulations, etc. affecting project delivery);
- e) Project Stakeholders.

SRE 3.2.5 Scope of Services:

Demonstrate understanding of the full scope of services for this project. Describe how the Proponent proposes to plan, organize and manage the delivery of all project services and deliverables, through each

and every phase of the project, in a manner that will meet project time, cost, quality and scope objectives and requirements.

The Proponent should provide:

- a) A demonstration of the Proponent's understanding of the full scope of services and deliverables required for this project;
- b) A description of a program for Resident Site Services during Construction;
- c) A Project Work Breakdown Structure (PWBS) including, but not limited to:
 - deliverable-oriented groupings of all project activities, tasks and deliverables through all phases of the project, as outlined in the Project Brief document for this project;
 - allowances for on-going activities such as: risk management; commissioning; quality, schedule and cost control, progress reporting; environmental monitoring; etc.;
 - allowances for all required reviews and approvals;
 - clear assignment of responsibilities for activities, tasks and deliverables to project team personnel in specific areas of expertise, with an estimation of levels of effort in terms of number of hours of all identified resources;
- d) A Project Schedule including, but not limited to:
 - logical sequencing of all project activities, tasks and deliverables through all phases of the project, as outlined in the Project Brief document for this project;
 - cross-references to the elements of the PWBS;
 - start and finish times for all key activities, along with target dates for major project milestones and deliverables associated with each project phase;
 - due consideration for such aspects as proposed design methodology, project implementation strategies, construction staging; seasonal and other constraints etc.;
 - allowances for on-going activities such as: risk management; commissioning; quality, schedule and cost control, progress reporting; environmental monitoring; etc.;
 - allowances for all required reviews and approvals.

SRE 3.2.6 Management of Services:

Describe how the Proponent will set up, organize and manage all resources (i.e. Prime Consultant, the Joint-Venture Consultant(s) (as applicable), the Sub-consultants and other Specialists) to form a project team capable of effectively providing all the required services and deliverables, addressing all issues and constraints, and meeting all the challenges of the project.

The Proponent should provide:

- a) A description of the project team including, but not limited to:
 - names, titles and years of pertinent experience of all team members, as well as a summary of what their roles and responsibilities will be on the project;
 - the firm of origin of the team members (i.e. Prime Consultant, Joint-Venture Consultant, Sub-consultants, etc.) and the number of years with that firm;

- detailed profiles of key positions and of key team members for these positions (use links to SRE 3.2.3 as appropriate);
 - names of personnel who will be committed to the project as back-up to key position, and a brief description of their expertise and experience (with years of experience);
 - overall depth of available back-up resources and expertise.
- b) An Organization Chart that clearly shows:
- name and title of the Proponent's prime contact(s) for the project;
 - names and titles of the project team members;
 - lines of communication and reporting structure;
 - business and reporting relationships between firms forming the project team (i.e. Prime Consultant, Joint-Venture Consultant(s), Sub-consultants, etc.);
 - how the Organization Chart will fit in the overall Project Organizational Structure.
- c) A description of the Proponent's management approach to:
- meeting all project administrative requirements;
 - managing and coordinating all consulting services and deliverables provided by the Prime Consultant, the Joint-Venture Consultant(s), the Sub-consultants, etc.;
 - ensuring continuing and consistent availability, efficiency and assignment of required expertise without omissions, duplications or conflicting responsibilities;
 - ensuring effective communications;
 - meeting project response time requirements outlined in PA 1.4 - Project Response Time.

SRE 3.2.7 Approach / Methodology

Describe the internal processes and methodologies the Proponent has in place to ensure that all project services are delivered on time, on budget, on scope and at the highest level of quality. This should include services and deliverables in both the Consultant contract and the Construction contract.

Identify major challenges that may affect the delivery of services and implementation of the project, and describe the Proponent's proposed approach to effectively deal with these challenges.

The Proponent should provide:

- a) For each of the following areas of project monitoring and control: describe the Proponent's internal process / methodology; identify major challenges specific to the project; and describe the approach to effectively deal with these challenges:
- Time Planning, Scheduling and Control;
 - Cost Planning, Estimating and Control;
 - Quality Assurance and Control;
 - Scope of Work Control;
 - Risk Management (including identification of major risks and remedial action);

Request for Proposals

Submission Requirements and Evaluation

- Health and Safety Protection;
 - Commissioning;
 - Conflict Resolution (consultant contract and construction contract).
- b) For each of the following areas relating to project development and implementation: identify major challenges specific to the project and describe the approach to effectively deal with these challenges:
- Site Studies, Investigations and Engineering Analyses;
 - Work Sequencing and Prioritization;
 - Functional, Technical and Operational Requirements;
 - Design Philosophy and Methodology;
 - Environmental Protection / Sustainable Development;
 - Constructability and Construction Staging.

SRE 3.3 EVALUATION AND RATING

In the first instance, price envelopes will remain sealed and only the technical components of the proposals which are responsive will be reviewed, evaluated and rated by a PWGSC Evaluation Board in accordance with the following to establish Technical Ratings:

Criteria	Weight Factor	Rating	Weighted Rating
3.2.1 Achievements of Proponent on Projects	1.5	0 - 10	0 - 15
3.2.2 Achievements of Sub-Consultants / Specialists on Projects	1.0	0 - 10	0 - 10
3.2.3 Expertise and Experience of Key Personnel	1.5	0 - 10	0 - 15
3.2.4 Understanding of the Project	1.0	0 - 10	0 - 10
3.2.5 Scope of Services	1.5	0 - 10	0 - 15
3.2.6 Management of Services	1.5	0 - 10	0 - 15
3.2.7 Approach / Methodology	2.0	0 - 10	0 - 20
Technical Rating	10.0		0 - 100

Generic Evaluation Table

PWGSC Evaluation Board members will evaluate the strengths and weaknesses of the Proponent's response to the evaluation criteria and will rate each criterion with even numbers (0, 2, 4, 6, 8 or 10) using the generic evaluation table below:

Request for Proposals

Submission Requirements and Evaluation

NON RESPONSIVE	INADEQUATE	WEAK	ADEQUATE	FULLY SATISFACTORY	STRONG
0 point	2 points	4 points	6 points	8 points	10 points
Did not submit information which could be evaluated	Lacks complete or almost complete understanding of the requirements.	Has some understanding of the requirements but lacks adequate understanding in some areas of the requirements.	Demonstrates a good understanding of the requirements.	Demonstrates a very good understanding of the requirements.	Demonstrates expert understanding of the requirements.
	Weaknesses cannot be corrected	Generally doubtful that weaknesses can be corrected	Weaknesses can be easily corrected	No significant weaknesses	No apparent weaknesses
	Proponent lacks qualifications and experience	Proponent does not have minimum qualifications and experience	Proponent has minimum qualifications and experience	Proponent is qualified and experienced	Proponent is highly qualified and experienced
	Team proposed is not likely able to meet requirements	Team does not cover all components or overall experience is weak	Team covers all components and will likely meet requirements	Team covers all components - some members have worked successfully together	Strong team - has worked successfully together on comparable projects
	Sample projects not related to this project's needs	Sample projects generally not related to this project's needs	Sample projects generally related to this project's needs	Sample projects directly related to this project's needs	Leads in sample projects directly related to this project's needs
	Extremely poor, insufficient to meet performance requirements	Little capability to meet performance requirements	Minimum acceptable capability, should meet minimum performance	Satisfactory capability, should ensure effective results	Superior capability, should ensure very effective results

To be considered further, proponents must achieve a minimum weighted rating of fifty (50) points out of the hundred (100) points available as specified above.

No further consideration will be given to proponents not achieving the pass mark of fifty (50) points.

SRE 4 PRICE OF SERVICES

All price proposal envelopes corresponding to responsive proposals which have achieved the pass mark of fifty (50) points will be opened upon completion of the technical evaluation.

An average price is determined by adding together all the price proposals considered responsive and dividing the total by the number of price proposals being opened.

All price proposals which are greater than twenty-five percent (25%) above the average price will be set aside and receive no further consideration.

The remaining price proposals are rated as follows:

- a) The lowest price proposal receives a Price Rating of 100
- b) The second, third, fourth and fifth lowest prices receive Price Ratings of 80, 60, 40, and 20 respectively. All other price proposals receive a Price Rating of 0.
- c) On the rare occasions where two (or more) price proposals are identical, the matching price proposals receive the same rating and the corresponding number of following ratings are skipped.

The Price Rating is multiplied by the applicable percentage to establish the Price Score.

SRE 5 TOTAL SCORE

Total Scores will be established in accordance with the following:

Rating	Possible Range	% of Total Score	Score (Points)
Technical Rating	0 - 100	90	0 - 90
Price Rating	0 - 100	10	0 - 10
Total Score		100	0 - 100

The Proponent receiving the highest Total Score is the first entity that the Evaluation Board will recommend be approached in order to finalize the details of a contractual agreement for the provision of the required services. In the case of a tie, the proponent submitting the lower price for the services will be selected.

SRE 6 SUBMISSION REQUIREMENTS - CHECKLIST

The following list of documents and forms is provided with the intention of assisting the Proponent in ensuring a complete submission.

The Proponent is responsible for meeting all submission requirements. Please follow detailed instructions in R1410T General Instructions to Proponents (GI 16 - Submission of Proposal).

Proponents may choose to introduce their submissions with a cover letter.

- ☐ Team Identification - see typical format in Appendix A
- ☐ Declaration/Certification - completed and signed form(s) - form(s) provided in Appendix B
- ☐ Proposal - (1) original plus five (5) copies of the proposal
- ☐ Front page of RFP - completed
- ☐ Front page(s) of any Solicitation amendment - completed

In a separate envelope:

- ☐ Price Proposal form - one (1) completed and submitted in a separate envelope

PROJECT BRIEF

Information contained in this Project Brief identifies the project requirements and the consulting services required for this project.

The Project Brief is divided into three sections:

- **PROJECT REQUIREMENTS (PR)**
 - **PROJECT ADMINISTRATION (PA)**
 - **REQUIRED SERVICES (RS)**
-

PROJECT BRIEF

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APPENDIX PB-1: REPORT LIST FOR LATCHFORD DAM

PROJECT REQUIREMENTS

PR 1 PROJECT INFORMATION

PR 1.1 General

In accordance with the process specified for the Request for Proposals (RFP), Public Works and Government Services Canada (PWGSC) intends to retain an engineering consulting firm in the capacity of prime Consultant, supported by a multidisciplinary team of Sub-Consultants, for the provision of the services required for this project.

PR 1.2 Project Identification

Project Title:	Latchford Dam Replacement
Location of the Project:	Latchford, Ontario
PWGSC Project Number:	R.009740.503
Client / User:	PWGSC
<u>PWGSC Project Team:</u>	
Project Director:	Martin Lelièvre
Project Manager:	Sylvain Blais
Design Manager:	Doug Murphy
Contract Officer:	Suzette Searchwell

PR 1.3 Project Delivery Approach

PWGSC shall select a Consultant who shall review all of the related documentation with respect to the Latchford Dam, recommend further examination as required, establish design and performance criteria, prepare the design, prepare the plans and specifications in order to tender the construction project and then complete the construction project supervision, inspection and commissioning. Design, plans and specifications shall be produced by the Consultant. The delivery of the Consultant services is anticipated to be a continuous process leading to the preparation of complete bilingual Construction Documents. Once Construction Documents are completed, the project shall need to receive Project Approval (PA) before it can proceed to Tender Call.

Implementation of this project shall be carried out as a single construction contract.

PR 1.4 Estimated Construction Costs

The Class "D" (Indicative) construction budget is estimated at \$19.2 M (2010 dollars) including HST.

The project shall respect the approved budget. It is the Consultant's responsibility to manage the project's scope within this budget.

PR 1.5 Project Schedule

Deliver the project in accordance with the project milestone listing identified below. During work, flexibility is very important in terms of accommodating unanticipated site requirements. The timelines

indicated below include normal PWGSC turnaround time which is specified in the Submission Review and Approval Process section.

a) Pre-Design /Analysis of Project Requirements	2 months
b) Design Concept	3 months
c) Design Development	4 months
d) Construction Documents (66% at 2.5 months) and PA	4 months
e) Tender Call, Bid Evaluation & Construction Contract Award	3 months
f) Construction (22 months) and Contract Administration	26 months

Note that the above time allocations are meant to provide a preliminary time frame of major activities and milestones. The estimated duration periods may vary. The schedule supplied by the Consultant shall be more detailed and representative of the achievable delivery. After contract signature, the successful Consultant and PWGSC shall agree to a final schedule which will prevail

In developing a detailed schedule, the Consultant shall find some activities are not interdependent and therefore can and shall be done concurrently.

PA shall be sought internally under Integrated Investment Planning before tendering for implementation of the project. Upon receiving PA, the plans and specifications produced shall then be used to tender the construction project, which shall allow PWGSC to select a general contractor who shall execute the construction contract.

Because Project Approval require detailed review and substantiation, the scheduling of the approval cannot be determined in advance. However, it is estimated that these approvals require **approximately three (3) months**.

This project shall be completed by March 31, 2016.

PR 2 INTRODUCTION AND BACKGROUND

PR 2.1 Overview

PWGSC is the custodian of a dam on the Montreal River at Latchford, Ontario, approximately 130 kilometres north of North Bay, in the Town of Latchford, Ontario. The closest centre is Temiskaming Shores, Ontario. The dam was constructed between 1910 and 1913 to facilitate a water transport system into the upper reaches of the river. The construction of the dam is considered to have created a navigable water system for logging and mining activity at the time and possibly an alternative northern route into the upper great lakes. At present, the Latchford Dam is no longer used for downstream flow regulation. Instead, its main purpose is to control and maintain water levels in Bay Lake.

The water in the Montreal River (Bay Lake) is utilized by the Town of Latchford for municipal water supply. The Town has an intake for the water supply that is above the dam. A water treatment facility for the town is located immediately downstream of the dam. Current uses for Bay Lake are recreational in nature, specifically boating and fishing. Small recreational tourism businesses such as cottage rental and boat tours are present in the area. They rely on water recreation at Bay Lake as the source of attraction to the area.

The land surrounding Bay Lake is mostly wilderness but offers recreational and access benefits all year round. Surrounding the lake is a provincial park located on the southern end, crown land with designation as a special management area on the northwest side and privately-owned land on the eastern side.

The Town of Latchford borders the dam to the north. It is mainly residential and interspersed with commercial properties. The 2001 census counted the population of Latchford at 363 residents.

Previous dam condition investigations have detailed the poor condition of the Latchford Dam and have, as early as 1992, recommended dam replacement. The latest report, states that “the Latchford Dam has reached the end of its useful life and should be replaced.”

The main problem the Latchford Dam faces is that its structure is subject to alkali-aggregate reactivity (AAR) which is irreversible and continues to degrade the concrete for an extended period of time.

Furthermore, during the review of the dam condition carried out in 2003 it was noted that the dam is not in compliance with the Canadian Dam Association’s standards for seismic loads. Latchford Dam was designed as a gravity structure without a pier-to bedrock anchor or key system, thus making it susceptible to sliding failure in case of high seismic activity. The dam would therefore be vulnerable to create a risk to public health and for loss of property.

Recently, a proposal was submitted to PWGSC by Latchford Community Power Project to install a hydroelectric generating station within the Latchford Dam under a permit from the Ontario Power Authority (OPA). Presently, environmental reviews are being carried out. Lease, operating and technical agreements are being developed by PWGSC for the project. The new Latchford dam will have to be designed in such a way as to accomodate the low-head turbines, and the permit schedule from the OPA.

PR 2.2 Existing Conditions

A hydrologic review in 2006 and 2007 concluded that the Incremental Consequence Classification (ICC) of the dam is Significant. This means that the design flood for the site is the 1:1000 event, and exceeds the existing capacity of the structure now in place.

The major concerns with prolonged use of the dam under the existing state of repair are:

- Aging equipment;
- Flood risk;
- Ongoing deterioration of the concrete abutments and sills due to Alkali Silica Reactivity;
- Risks associated with access to and across the dam.

PR 3 PROJECT OBJECTIVES, ISSUES, CONSTRAINTS AND CHALLENGES

PR 3.1 Objectives

a) Flood Control

A key objective of this project is to provide an effective water management of Bay Lake and enhanced safety for people, and protection of property, located upstream and downstream from the Reservoir. Deliver the project by; maintaining at all times a discharge capacity to ensure the water management of Bay Lake in a safe manner; and by ensuring that the Contractor prepares an Emergency Preparedness Plan specifying measures that shall be taken in the event of an exceptionally large flood occurring during construction work and commissioning to protect persons and property.

Operational management of the dam shall rest with PWGSC. One half of the existing Latchford dam shall also remain in service at all times - half of the old dam in Phase I, and half of the new dam in Phase II. PWGSC staff shall operate the sluices. Any requests for dam operations in support of construction activities shall be made through the Departmental Representative.

b) Health and Safety

PWGSC, recognizes the responsibility to ensure the health and safety of all users of the asset, as well as all persons on Crown construction projects and the entitlement of both federal employees and private sector workers to the full protection afforded them by occupational health and safety regulations.

In keeping with the responsibility and in order to enhance health and safety protection for all individuals on federal construction sites, PWGSC shall voluntarily comply with the applicable provincial/territorial construction health and safety acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.

The project is to be implemented in a manner that shall provide safeguards to protect the health and safety of workers and users and ensure long term safety of the structure.

c) On-Time / On-Budget / On-Scope

Delivering this project on time, on budget and on scope is a high priority for PWGSC.

d) Quality of Work

PWGSC expects the Consultant to maintain a high standard of design, based upon recognized design principles. The design process for all project components, including planning and engineering, shall be fully co-ordinated and adhere to good design principles. The project is to be implemented in an environmentally responsible manner.

Codes, regulations, by-laws and decisions of “Authorities Having Jurisdiction” shall be observed. In cases of overlap, the most stringent shall apply. The Consultant shall identify other jurisdictions appropriate to the project. Provincial environmental acts and regulations shall be considered in accordance with the federal government's ‘Good Neighbour’ policy.

e) Sustainable Development

PWGSC, like all federal departments, is required to have a Sustainable Development Strategy (SDS). PWGSC has developed their Strategic Plan, that sets out principles, goals and actions for integrating sustainable development principles into its policies and operations.

Sustainable Development objectives, in particular Sustainable Project Delivery objectives, shall be addressed throughout the evolution of the project. Sustainable Development is defined in broad terms as a strategy that, throughout the implementation of the project, routinely and consistently includes the consideration of the environmental, economic and societal impact of every decision made for the project.

f) Good Stewardship

The project shall respect the fundamentals of aesthetics in the design of the structure by taking into account its integration into the environment including landscaping. 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.

g) Continuity of operations

Complete all construction of elements below lake level in the dry while maintaining at all time a discharge capacity to assure the effective and safe water management of Bay Lake Reservoir. PWGSC shall remain responsible for the water planning and management of the reservoir and dam.

h) Risk Management

In compliance with Treasury Board Policy, on Investment Planning and on the Management of Projects, PWGSC shall perform Project Complexity and Risk Assessments (PCRA) for all real property capital asset projects exceeding \$1 Million total value. This has been done and resulted in a composite risk level of 3 (which refers to a complex project). In addition, the Department is committed to integrating risk management practices and processes into the management of all its real property projects.

PR 3.2 Issues, Constraints and Challenges

a) Time Constraints

The construction work cannot be started during Spring because of the high probability of a flood occurring during the freshet period and for environmental reasons linked to fish spawning. The most appropriate time to dewater the construction site is Summer and early Fall periods. Work in the dry main continue once dewatering is complete.

b) Risk of Flooding

In order to enhance health and safety protection for all individuals during construction work and commissioning, the Consultant ensure that the contractor prepare:

- an Emergency Preparedness Plan specifying measures that shall be taken in the event of an exceptionally large flood occurring during construction work and commissioning to protect persons and property located along the shores of Bay Lake and the Montreal River; and
- operational and water management requirements (in conjunction with the Latchford Community Power Project).

c) Impact on Local Stakeholders

The replacement of the Latchford Dam is to be implemented in a manner to ensure that work is carried out with minimal disturbance to the stakeholders who will be affected in different ways by the project. Deliver the project utilizing the best practices in support of client/user/environmental/water management needs, respecting approved scope, quality, cost and time.

Local stakeholders include the municipalities, businesses and institutions located up and downstream of the dam, on both Bay lake and the Montreal River. Local stakeholders also include other users who visit the Montreal River including, but not limited to temporary users of W.J.B Greenwood Provincial Park, cottagers and seasonal residents on both Bay lake and the Montreal River. These stakeholders may or may not be aware of local developments as they are made public.

Replacement of the structure will impact the stakeholders at different times and for variable lengths of time. Effective communications shall be maintained with all stakeholders and the public to minimize user disruptions and inconvenience for the duration of the project.

d) Traffic Control

Careful consideration shall be given to the impact that construction staging shall have on all stakeholders including, but not limited to, the general traffic, traffic management operations in communities along access roads to the site, particularly Highway 11., emergency services, police departments, pedestrians, and other recreational, institutional and commercial operators in the vicinity of the dam.

e) Constructability Issues

Constructability may be affected by the amount of work done in the field as opposed to shop controlled fabrication, customized construction as opposed to readily available products and practice, light weight as opposed to heavy weight components, area available for construction workers and equipment as opposed to a restricted work area, nearby traffic, ease of achieving composite action, and others.

f) Operation and Maintenance

The design and construction of the asset shall give careful attention to minimizing long-term maintenance costs and reducing environmental impacts of the operation and maintenance of the asset by encouraging environmentally sound maintenance practices through provision of suitable materials and durable design features.

g) Demolition and Removals

Demolition and removals shall be planned and carried out in a manner that optimizes health and safety, environmental protection, the principles of sustainable development and waste management, as well as careful and efficient coordination with all other site work.

PR 4 TECHNICAL REQUIREMENTS

PR 4.1 Overview

The prime intent of this project is to replace the Latchford Dam through the design and construction of a new dam complete with water control system, sluices, gravity dam and abutments, new inflatable weirs, steel or timber stop logs and gates, machinery and roadway decks, shoreline protection and landscape. The design flows shall be in accordance with the recommendations of "Numerical Modelling of Flows on the Montreal River - Canadian Hydraulics Centre 2006" identified in PR 6.1. The new dam shall control the water levels in conjunction with the generating equipment of the Latchford Community Power Project.

PR 4.2 Scope of Services

The project requires Consultant services in each of the following general project phases and service areas:

- a) Pre-design / Analysis of Project Requirements;
- b) Design Concept
- c) Design Development
- d) Construction Documents
- e) Tender Call, Bid Evaluation and Construction Contract Award

- f) Construction and Contract Administration
- g) Resident Site Services During Construction

Specific and detailed service requirements are presented in the Required Services (RS) Sections of this document.

PR 4.3 Design Principles

- a) The design shall ensure the safety of the new dam and thereby protect persons and property against the risks associated with the presence of the dam.
- b) The dam shall be designed and constructed to provide the required strength, durability, overall stability, safety and serviceability with appropriate safeguards against excessive cracking, fatigue, unacceptable deformation, premature corrosion, deterioration of material, undesirable vibration and deflection commensurate with a design service life of seventy-five (75) years.
- c) The dam shall be designed in a manner that is aesthetically pleasing and harmonious with its environment.
- d) The design shall incorporate an evaluation of high performance construction materials including life cycle costing and environmental sustainability analyses of various design alternatives (e.g. zinc-coated re-bar (galvanized), high performance concrete, etc.). Evaluate and determine performance criteria, functional requirements, and general code compliance
- e) All new structural components installed shall be protected against corrosion. Utilize industry proven materials and avoid experimental materials.
- f) The design shall incorporate, as much as possible, the RPB sustainable development principles and goals outlined in PR 4.6 - Sustainable Development, as well as the guidelines contained in the PWGSC document entitled: "The Environmentally Responsible Construction and Renovation Handbook", which can be found at:
<http://www.tpsgc-pwgsc.gc.ca/biens-property/gd-env-cnstrctn/index-eng.html>

PR 4.4 Performance Requirements

- a) **Discharge Capacity**
 - 1. According to CDA Dam Safety Guidelines, the Incremental Consequence Classification (ICC) of the Latchford Dam would be "Significant" under both flood and non-flood conditions, requiring the new dam to be designed for a one thousand year return flood. The Consultant shall seek to increase the discharge of the dam as a whole to reach this goal.
 - 2. The dam shall be dimensioned to pass flows as per the recommendations of "Numerical Modelling of Flows on the Montreal River - Canadian Hydraulics Centre 2006" identified in PR 6.1, in conjunction with the generating equipment of the Latchford Community Power Project..
- b) **Piers and Sluices**
 - 1. The sluices shall have vertical sides with gains for steel or timber stop logs for regular operation (unless weirs are selected), and upstream and downstream gains for emergency dewatering of the sluices, including those in which generating equipment will be installed by others.

2. The piers shall be shaped to diminish hydraulic turbulence and losses, in accordance with the requirements of the “Design of Small Dams”, document published by U.S. Dept. of the Interior, Washington, while accomodating the installation of low-head turbines.
3. Gains shall be configured to suit a new mechanical lifting device..
4. The sill beam of each sluice shall be machined and ground to fit the stop logs to minimize leakage.
5. A heating system shall provide enough heat to melt ice forming in the gains.
6. The stop logs shall be designed for the hydrostatic and hydrodynamic forces caused by the water at maximum water elevations and flows, for a floating ice load on the upstream side of 36 kN/m of gate width (ice sheet is considered to be 60 cm thick and acting at the expected range of winter water levels) and for a wind pressure of 1.5 kPa on all external parts of the mechanical lifting device.

c) Mechanical Lifting Device

1. A mechanical lifting device shall operate each gate at a speed of approximately 0.45 m/min. In the case of an inflatable weir, equipment shall be capable of fully inflating or deflating the weir within 45 minutes.

d) Embedded Parts

1. Heater ducts shall be provided in the gains to allow for deicing for winter operations.

e) Deck

1. The deck shall consist of a concrete slab and shall be designed to withstand crane loading on the operations deck.
2. The operations deck shall be equipped with concealed power, steam and control cable ducts which shall run the full length of the dam. The 3-phase electric feed, emergency backup generator and steam system for deicing logs for winter operations shall be located on the north side of the Dam.
3. A security fence shall be installed all around the operation deck and a handrail system shall be provided around all gate openings. Provide a pedestrian access with winter access for snowmobiles on the downstream side of the dam., isolated from the operations deck.
4. The operations deck of at least half of the original dam shall remain fully accessible for operational staff for gate operations throughout Phase I.

f) Lighting

1. Luminaires shall be provided along the dam.

g) Piers, Abutments and Sills

1. The overall stability of the dam shall be analyzed to determine the size and configuration of the piers, abutments and sills to withstand all loads configurations including earthquakes. Anchors to bedrock are acceptable to meet the factor of stability against uplift, sliding and overturning and to meet Canadian Dam Association Dam Safety Guidelines for seismic loading.

2. The pier nosing upstream shall be of high-strength concrete or be enclosed in a steel nose plate and shaped to withstand ice impact.
3. The need of a grout curtain in the rock foundation along the full length of the dam shall be investigated.
4. The sill elevation shall not be higher than the existing 272.30 m, nor lower than 270.30 m, to provide adequate discharge capacity to pass the design flow at the design maximum water level.
5. The apron shall be designed and shaped to prevent upstream and downstream erosion and to accommodate the low-head turbines' submergence requirements

h) Dewatering

1. All work on elements below normal water levels shall be performed in the dry. Upstream and downstream cofferdams shall be required.
2. The consultant may utilize the existing dam as one cofferdam if investigation shows its capacity to be adequate.
3. The dewatering work shall be done in two phases.
 - The initial phase shall be the dewatering of one half of the new dam location, for construction of a concrete gravity dam and the construction of half of the planned new sluices.
 - During the initial phase the water shall pass through the opposite half of the existing sluices, which shall control the discharge from the lake..
 - The second phase shall be the dewatering of the second half of the new dam and construction of half of the planned new sluice(s). During that phase the water shall pass through the new sluice(s) built at the initial phase.
4. Once the new dam is commissioned and the services are linked, the existing dam shall be removed. This may require the use of additional dewatering.
5. Dewatering system shall be designed and constructed in accordance with the Environmental Assessment Evaluation requirements and mitigation measures.

i) Aesthetics

1. In addition to the fulfillment of the functional requirements, the Consultant shall give consideration to the fundamentals of aesthetics in the design of the structure.
2. The Consultant shall produce an aesthetically pleasing structure by taking into account such characteristics as:
 - harmonious proportions between the relative sizes, shapes and features that would convey a balanced impression;
 - principles of order in lines and edges of the structure such as limiting the number of directions of lines, utilizing symmetry and repetitiveness, avoiding monotony and unnecessary attachments;
 - surface texture, colour and character;
 - refinement of form by modeling, if necessary, using 3D modeling for selection of shapes, materials and colors; and

- integration into the environment including landscaping.

PR 4.5 Standards, Codes and Specifications

Dam structures have no Canadian codes which cover their design. Design criteria have been developed by the Canadian Dam Safety Association, the Permanent International Association of Navigation Congresses, the Quebec's Dam Safety Act and Regulation, and various sources such as handbooks, manuals and texts of various origins.

Standards, codes and specifications to be used for the design and construction of the asset shall be the latest edition of the following (including all amendments, supplements and revisions thereto). In case of conflict or discrepancy between codes and standards, the most stringent requirement shall apply.

- a) Dam design criteria in accordance with the Canadian Dam Association Guidelines, the Permanent International Association of Navigation Congresses Design Criteria, and the Lakes and Rivers Improvement Act (LRIA) and its associated regulation on dam construction. .
- b) Foundation design in accordance with the Canadian Manual on Foundation Engineering, National Research Council, Canada.
- c) Concrete design in accordance with CAN3-A23.3, steel design in accordance with CAN/CSA-S16.1, and timber design in accordance with CAN3-086.
- d) Environmental loads in accordance with the Supplement to the National Building Code of Canada.
- e) Dam components design of piers and sluices in accordance with the "Design of Small Dams", document published by U.S. Dept. of the Interior, Washington.
- f) Mechanical components design in accordance with the handbooks entitled "Using Industrial Hydraulics" published by Hydraulics & Pneumatics Magazine, Ohio, USA, and "Machinery Handbook" published by Industrial Press Inc., New York, USA.
- g) Electrical components design in accordance with CSA C22.1 and the appropriate provincial safety codes with the underground systems in accordance with CSA C22.3 No. 7.
- h) Deck design in accordance with CAN/CSA-S6, Canadian Highway Bridge Design Code is the primary code which shall be used for design with appropriate live load levels.
- i) Specific reference to the following codes may be required for clarification: AASHTO Standard Specifications for Highway Bridges and Interim Specifications and the National Building Code of Canada.
- j) National Master Specifications to be used with project specific modification as required to suit specific needs and to reflect specific provincial requirements.
- k) Load factors and resistance factors shall be compatible with a target safety Beta index appropriate for ultimate limit states construction design, for a 75 year design service life.

The consultant has the option of consulting other design codes and is expected to utilize new developments in structural engineering whenever they appear appropriate in accordance with proper engineering practice but shall provide documented evidence of suitability satisfactory to the Departmental Representative.

PR 4.6 Sustainable Development and Environmental Protection

The project is to be implemented in an environmentally responsible manner that balances environmental performance, social and cultural sustainability and conservation objectives.

The Real Property Branch (RPB) of PWGSC, has developed a Sustainable Development Strategy that sets out principles, goals and actions for integrating sustainable development principles into its policies and operations.

Throughout the evolution of the project, the Consultant's services and deliverables shall respect the following principles and goals of RPB's Sustainable Development Strategy:

- a) To sustain our natural resources, by ensuring sustainable use of renewable resources and efficient use of nonrenewable resources.
- b) To protect the health of Canadians and of ecosystems, by managing the risks associated with toxic substances, by protecting representative areas, and by developing effective warning and adaptive response capability to both natural and human-caused disasters.
- c) To meet our international obligations, by contributing to the protection of the ozone layer, the reduction of greenhouse gas emissions, and the conservation of biodiversity.
- d) To improve our quality of life and well-being, by fostering improved productivity through environment efficiency, including environmentally friendly maintenance procedures and products, and by supporting innovation towards sustainable development.
- e) To contribute to the prevention, reduction and, where possible, the elimination of negative impacts on humans and the environment in their land and marine / fresh water activities.
- f) To contribute to the prevention, reduction and, where possible, the elimination of negative impacts of contaminated sites on humans and the environment.
- g) To contribute to the use and promotion of more efficient, environmentally friendly alternative sources of energy.
- h) To include the principle of life-cycle management in the analysis of project development options and design solutions.
- i) To actively encourage and support the prevention, reduction and, where possible, the elimination of impacts of toxic or hazardous substances and wastes on human health.
- j) To promote the conservation of renewable and nonrenewable resources through appropriate waste management, including the application of 3R concepts (reduce, reuse, recycle) for the reduction of waste.

PWGSC has also prepared the following guidance documentation outlining sustainable design principles to be included for federal real property projects:

Environmentally Responsible Construction and Renovation Handbook:
<http://www.tpsgc-pwgsc.gc.ca/biens-property/gd-env-cnstrctn/page-1-eng.html>

PR 4.7 Waste Management

Waste Management services involve the preparation and management of the following deliverables during the course of the project. Specific requirements regarding the preparation of these deliverables, and the project phase where they shall be submitted, are outlined in subsequent RS Sections.

- a) A Designated Substance Report identifying the types and locations of materials present at a site that constitute hazardous/dangerous/controlled substances under the applicable regulatory regime and recommends procedures for the proper disposal.
- b) A Waste Audit determining the types and volumes of construction materials that shall be produced as surplus to the project.
- c) A Waste Management Workplan (also known as Waste Diversion Workplan) confirming the project targets set for reduction, reusing and recycling, and describing the procedures to maximize the recovery and the value of those materials identified in the Waste Audit, including on-site practices, procedures and potential destinations for the materials recovered during construction.
- d) A presentation of a mandatory training session to be given prior to the commencement of the work on site and attendance at a midpoint update meeting, convened by the Departmental Representative, to discuss progress and problems of the Waste Management Workplan.
- e) A Waste Management Report - documents the recovered construction materials to ensure that the results anticipated in the Waste Audit and the achievement of targets set in the Waste Management Workplan are realized to the highest degree possible. It records the results at the end of the project.

PR 4.8 Commissioning

The following is an overview of the commissioning services that shall be required over the course of the project. Specific requirements for commissioning services and deliverables, relating to each phase of project development and implementation, are presented in each of the subsequent RS Sections.

All commissioning services and deliverables shall be provided in accordance with the requirements of the latest version of the PWGSC Commissioning Manual, as they apply to this project.

The Manual can be found at:

<http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/bi-rp/tech/miseenservice-commissioning/manual-manual-eng.html>

The Consultant shall provide all necessary commissioning services needed to:

- a) document the design intent of the overall project and the proposed asset systems and components and to verify and demonstrate that all functional, operational and maintenance requirements have been correctly interpreted in the design solution;
- b) demonstrate that the requirements of PWGSC and of Authorities Having Jurisdiction are met during the construction and commissioning phases of the project and support quality control through verification of components and systems;
- c) ensure that responsibilities for meeting the above requirements, and for demonstrating compliance, are clearly defined in the contract documents;
- d) minimize life-cycle operation and maintenance (O&M) costs through the careful selection of design solutions (for economy, reliability, durability, accessibility, maintainability, etc.), construction materials, installation practices and performance verification procedures;
- e) verify that selected design solutions and the resultant built works protect the safety, health and welfare of Users and O&M personnel;

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- f) ensure that the final product meets the specified requirements of the plans and specifications and ensure all systems meet design intent;
 - g) ensure that appropriate start-up and checkout procedures are employed for components, subsystems, including meaningful documentation for and certification of Quality Control reports and techniques;
 - h) verify and demonstrate that all systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget;
 - i) provide comprehensive documentation of the operation and maintenance of the asset;
 - j) identify and ensure availability of all spare equipment, extra material and redundancies needed to operate and maintain the asset during its life expectancy;
 - k) implement a comprehensive O&M training program in order to ensure that the completed works shall be transferred to qualified and trained operators; and
 - l) prepare and submit commissioning documentation, including but not limited to:
 - Commissioning Plan;
 - O&M and Commissioning estimated costs and budgets;
 - Commissioning Specification for construction contract;
 - Product Identification and Performance Verification requirements;
 - Operation and Maintenance (O&M) Manual;
 - Systems Operations Manuals (SOM);
 - Training Plan and Schedule.

PR 4.9 Doing Business with Real Property Branch

The PWGSC document 'Doing Business' is provided as an Appendix to this Request for Proposals and is an integral part of the definition of service requirements. The document specifies the service standards, documentation / submission requirements and policies that shall be met in the performance of services for this project. The Consultant and all members of the Consultant Team shall be completely familiar with the applicable contents of that document.

PR 5 CONSULTING EXPERTISE REQUIRED

The Consultant team for this project shall be capable of providing the following services:

- a) structural engineering (dams)
- b) structural engineering (seismic specialist)
- c) civil engineer (hydrology and hydraulics)
- d) geotechnical engineering
- e) mechanical engineering
- f) electrical engineering
- g) corrosion protection and painting

- h) municipal infrastructure engineering
- i) environmental assessment and monitoring
- j) sustainable development
- k) waste management
- l) risk management
- m) commissioning and O&M
- n) cost planning, estimating and control
- o) time planning, constructability, scheduling and control
- p) bilingual services
- q) 2D modeling of channel flows
- r) emergency preparedness planning (supervision of EPP by contractor)

PR 6 EXISTING DOCUMENTATION

PR 6.1 Existing Documentation Available for Viewing by all Proponents

The following documentation is available to all Proponents and shall be provided on CD-ROM upon request from the Proponent:

- a) Engineering Asset Management Plan, Latchford Dam , Price WaterhouseCoopers, 2010
- b) Comprehensive Inspection Report, Latchford Dam, GENIVAR, 2009
- c) Numerical Modelling of Flows on the Montreal River - Canadian Hydraulics Centre 2006
- d) Latchford Dam - Dam Replacement Feasibility Report, PWGSC, 2010.
- e) Topographic and sounding plans of properties at Latchford Dam (in AutoCAD format)

PR 6.2 Existing Documentation Available to the Successful Proponent

Additional documents shall be made available to the successful Proponent for reproduction at the Proponent's cost. A full list of reports and drawings on the Latchford Dam is available in **Appendix PB-1** to this Project Brief.

It is important to note that, the structure has been repaired and strengthened over time and features may have changed since original construction. The existing drawings and documents, including "as built" records, may not be accurate. Also, not all documents are available in both official languages

PROJECT ADMINISTRATION (PA)

PA 1 GENERAL REQUIREMENTS

PA 1.1 PWGSC Project Manager

- a) The Project Manager assigned to the project is the Departmental Representative.
- b) The Departmental Representative is directly concerned with the project and responsible for its progress on behalf of PWGSC.
- c) The Departmental Representative is the liaison amongst and between the Consultant, PWGSC and the User Department.
- d) PWGSC administers the project and exercises continuing control over the project during all phases of development.
- e) Unless directed otherwise by the Departmental Representative, the Consultant obtains all Federal requirements and approvals necessary for the work.

PA 1.2 Lines of Communication

- a) Unless otherwise directed by the Departmental Representative, conduct all project communication through the Departmental Representative only.
- b) Formal contact between the Consultant and the PWGSC Project Team, which includes Users and Stakeholders, shall be through the Departmental Representative.
- c) Direct communication between members of the PWGSC Project Team on routine matters is required to enable the discussion and resolution of technical issues. However, no communication shall alter the terms of the project scope, budget or schedules unless directed in writing by the Departmental Representative.
- d) During construction tender call, PWGSC conducts all correspondence with bidders and makes the contract award.

PA 1.3 Media

- a) The Consultant shall not respond to requests for project related information or questions from the media. Such inquiries are to be directed to the Departmental Representative.

PA 1.4 Project Response Time

It is a requirement of this project that the key personnel of the Consultant and Sub-Consultant or specialist firms be personally available, or have an acceptable substitute available, to attend meeting or respond to inquiries **within one (1) working day**.

PA 1.5 Project Progress Meetings

- a) The Departmental Representative shall arrange and chair Project Progress Meetings generally **every two (2) weeks** throughout the entire project development and implementation period, for all members of the project team, including representatives from:
 - PWGSC (Departmental Representative, Design Manager, and others as required);

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- Consultant team (including the Resident Site Representative during the construction phase);
 - Contractor and, as required, Subcontractors (during construction phase);
 - Other Stakeholders as required.
- b) Standing agenda items shall include, without being limited to:
- Project Planning Monitoring and Control,
 - Cost,
 - Risk,
 - Quality,
 - Scope,
 - Environment,
 - Health and Safety
- c) The Consultant shall attend the meetings, record the issues and decisions, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting.
- d) These meetings shall be held in the offices of PWGSC in the National Capital Area.

PA 1.6 Other Meetings

- a) The Departmental Representative shall arrange and chair a Project Start Up Meeting at a location to be determined by the Departmental Representative. Details pertaining to this meeting are outlined in Section RS 2 - Pre-Design / Analysis of Project Requirements.
- b) During the course of the project, as specifically outlined in the RS Sections, the Consultant shall be required to arrange and chair meetings such as:
- Design Development review meetings;
 - Construction Document review meetings;
 - Construction progress meetings;
 - Site inspection meetings.

At the discretion of the Departmental Representative, these meetings may be held instead of, or jointly with, the Project Progress Meetings described in PA 1.5.

The Consultant shall record the issues and decisions, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting.

- c) On occasion, the Departmental Representative may be required to call urgent problem-solving meetings. The Consultant shall:
- be available to attend such meetings, in the location specified by the Departmental Representative, within one (1) working day notice;
 - assist the Departmental Representative in organizing the meeting;
 - record the issues and decisions; and

- prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting.

PA 1.7 Official Languages

- a) This project requires services in both official languages.
- b) The Consultant shall prepare all Construction Documents in Canada's two official languages. The languages are considered equal in status; neither is considered to be a translation of the other.
- c) The Consultant shall produce a single set of construction drawings (originals) on which written information is shown in both languages and separate written documents for each language for specifications, record drawings, and operation and maintenance documentation.
- d) Unless specifically directed otherwise in the Required Services (RS) sections of this document or by the Departmental Representative, all other documents produced by the Consultant under the terms of this contract may be in the language of choice of the Consultant.
- e) The Consultant shall be responsible for the accuracy and completeness of translations and the consistency of documents.
- f) Communication, documentation and correspondence relating to Administration of the Construction Contract shall be in the language of choice of the construction Contractor.
- g) Presentation material and all public communications shall be provided in both official languages.

PA 2 AUTHORITIES HAVING JURISDICTION

PA 2.1 Federal Government Authorities

The following are authorities having Federal Government jurisdiction over the project:

- a) Treasury Board of Canada
 - Project and contract approvals
- b) Public Works and Government Services Canada
 - Contracting authority and project delivery
 - Functional design requirements and standards,
 - Multimedia,
 - IT,
 - Security systems
 - Dam operations and water level control in Bay Lake
- c) Human Resources and Skills Development Canada
 - Fire prevention services,

- Life safety
- d) Environment Canada
 - Canadian Environmental Assessment Act and
 - Canadian Environmental Protection Act
- e) National Building Code of Canada (NBCC)
 - Building codes and standards
- f) Transport Canada
 - Navigable Waters Protection Act
- g) Fisheries and Oceans Canada
 - Fisheries Act

PA 2.2 Provincial, Municipal and Other Local Authorities

Although the Federal Government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is required unless otherwise directed by the Departmental Representative.

In some cases, the Federal government may defer to provincial and municipal authorities for specific regulations, standards and inspections. In areas of conflict, the Federal authority prevails.

- a) Ontario Ministry of Labour
 - Employment Standards
 - Construction Health and Safety
 - Workers Compensation
- b) Ontario Ministry of the Environment
 - Ontario Environmental Protection Act: 3R Regulations
 - Disposal of Designated Substances
- c) Montreal River Water Management - OPG
 - OPG operate dams upstream and downstream of the Latchford Dam.
- d) Ontario Ministry of Consumer and Commercial Relations - Elevating Devices Branch
 - Construction Hoists
- e) Ontario Ministry of Transport
 - Codes, standards for design, construction and maintenance of roads and bridges.
 - Regulations for road safety and traffic control.
- f) Municipality/Civic Authorities
 - Local Police and Emergency Services

The Consultant shall, with the assistance of the Departmental representative, identify any other Authorities Having Jurisdiction and endeavour to ensure that all design work meets or exceeds all codes, regulations and standards of these other authorities having jurisdiction.

The Consultant is required to submit project documents to Authorities Having Jurisdiction for review during both the design and the preparation of construction documentation.

The Consultant shall complete negotiations, identify the cost of any required permit, and resolve all permit related issues prior to tender.

PA 3 SUBMISSIONS, REVIEWS AND APPROVALS

PA 3.1 General Submission Requirements for Project Deliverables

- a) Unless otherwise specified, where deliverables and submissions include summaries, reports, cost estimates, schedules, drawings, plans, specifications, the Consultant shall submit six (6) hard copies, as well as one (1) electronic copy in each of the following electronic formats:
 - in Portable Document Format (PDF), and
 - in a non-PDF, editable format (original software of preparation).
- b) Unless otherwise specified, deliverables and submissions are to be provided in the language of choice of the Consultant.
- c) Presentation material and all public communications shall be provided in both official languages.
- d) Electronic deliverables shall be provided in the current PWGSC standard suite of software applications as follows:

<u>Deliverable</u>	<u>PWGSC</u>
Written reports and studies:	Lotus WordPro, or Microsoft Word
Spreadsheets and budgets:	Lotus 123, or Microsoft Excel
Presentations:	Lotus Freelance Graphics or Microsoft Powerpoint
Schedules	Primavera and/or Microsoft Project
Drawings:	AutoCad (*.dwg) version 2009 or later
Specifications:	NMS Edit or MS Word NMS
Web	Adobe PDF
Internet	HTML, Macromedia Flash

- e) Electronic deliverables provided on compact disks (DVDs) shall be fully and professionally labeled; furthermore, the DVD labels shall indicate software and version.
- f) Schedules shall be submitted in a format that shall allow analysis of critical path relationships and milestones and shall comply with the requirements prescribed in the Doing Business document.

- g) All drawings shall be generated and distributed in the format using layering and file transfer protocols as prescribed in the Doing Business document.
- h) Other forms and templates shall follow PWGSC formats, which are available at the following web site:

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

PA 3.2 Acceptance of Project Deliverables

- a) While PWGSC acknowledges the Consultant's obligations to meet project requirements, the project delivery process entitles PWGSC to review work. PWGSC reserves the right to reject undesirable or unsatisfactory work. The Consultant shall obtain Departmental Representative acceptances during each of the project phases.
- b) Acceptances indicate that based on a general review of material for specific issues, the material is considered to comply with governmental and departmental objectives and practices, and that overall project objectives are being satisfied.
- c) The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the contract, and with all applicable codes, standards and regulations.
- d) PWGSC acceptances do not prohibit rejection of work, which is determined to be unsatisfactory at later phases of review. If progressive design development or time / cost / risk updates or technical investigation reveals that earlier acceptances shall be withdrawn, the Consultant is responsible for re-designing work and re-submitting for acceptance at the Consultant's cost.
- e) During each review period, maintain full production on the project, and revise documents as necessary and when review comments are received.
- f) The Consultant shall comply with the approved submissions and direct Sub-consultants to coordinating of their work in accordance with the approved submissions. Acceptances by stakeholders and other agencies and levels of government shall be obtained to supplement PWGSC acceptances. The Consultant shall assist the Departmental Representative in securing all such acceptances and adjust all documentation as required by such authorities when securing acceptance.

PA 3.3 Submission, Review and Approval Requirements

Work in progress is to be reviewed by the Departmental Representative as well as the following:

a) PWGSC Project Senior Management Committee

The project shall be subject to approvals by senior managers of PWGSC as well as other relevant departments and agencies, for the purposes of obtaining final decision authority.

- Submission Formats: reports and presentations;
- Frequency: Submissions are reviewed at key stages of deliverables;
- Expected Turnaround Time: approximately **5 weeks** for each review;
- Number of re-Submissions: until approval received.

b) PWGSC in-house Services

- Submission Formats: reports and presentations;
- Frequency: Submissions are reviewed at key stages of deliverables;
- Expected Turnaround Time: approximately **3 weeks** for each review;
- Number of re-Submissions: until approval received.

c) **PWGSC Health and Safety Committee**

- Submission Formats: reports and presentations;
- Frequency: Submissions are reviewed at key stages of deliverables;
- Expected Turnaround Time: approximately **3 weeks** for each review;
- Number of re-Submissions: until approval received.

d) **Authorities Having Jurisdiction**

- Submission Formats: reports and presentations;
- Frequency: Submissions are reviewed at key stages of deliverables;
- Expected Turnaround Time: approximately **4 to 12 weeks** for each review (outside PWGSC control);
- Number of re-Submissions: until approval received.

Chart of Reviews and Approvals	PWGSC		Authorities Having Jurisdiction	
	R	A	R	A
RS 2 Pre-Design / Analysis of Project Requirements				
Detailed Project Schedule	X	X	X	X
Pre-Design Report	X	X	X	X
Indicative - Class 'D' Estimate	X	X		
RS 3 Design Concept				
Design Options	X	X	X	
Recommended Design Option	X	X	X	X
Class 'C' Estimate(s)	X	X		
RS 4 Design Development				
Design Development Documents	X	X	X	
Class 'B' Estimate(s)	X	X		
RS 5 Construction Documents				
33% Construction Drawings	X	X	X	
66% Construction Drawings and Specs	X	X	X	
99% Construction Drawings and Specs	X	X	X	X
Class 'A' Estimate	X	X		
Final Construction Documents	X	X	X	

R = Review A = Approval

REQUIRED SERVICES (RS)

RS 1 GENERAL SERVICE REQUIREMENTS

The General Service Requirements identified in this Section apply to all other RS Sections in this document. Specific requirements (activities, deliverables, etc) relating to these General Service Requirements at various stages of project development and implementation, are presented in each of the subsequent RS Sections.

RS 1.1 Risk Management

Risk management is an evolving process that will change over the life of the project as risks change throughout different project phases. These project risks are associated with development, technical, implementation, and/or management issues that can affect cost, quality, schedule and/or safety.

The Consultant shall provide support to the Departmental Representative in identifying, assessing and managing risks throughout the project life cycle.

Without being limited to the following, the Consultant shall:

- a) review and build upon the project risk plan prepared by PWGSC;
- b) identify risks and determine which risks are likely to affect the project and document the characteristics of each;
- c) qualify/quantify probability of risk event (Low, Medium, High) and their impact (Low, Medium, High);
- d) develop risk responses including risk avoidance and/or mitigation measures;
- e) implement risk avoidance and/or mitigation measures;
- f) respond to changes in risk over the course of the project;
- g) determine a cost allowance for each risk identified;
- h) Review and update the Risk Management Plan at each project development and implementation phase.

RS 1.2 Time Planning, Scheduling and Control

Time Planning, Scheduling and Control are high priorities with all Federal Government projects and shall be approached as a continuous interactive process involving planning, action, measurement, evaluations and revisions, throughout all stages of the project.

a) Time Management, Planning and Control Specialist

The Consultant's project team shall include a fully qualified and experienced Time Planning, Scheduling and Control Specialist, with a demonstrated record of successful time management on large construction projects.

The Time Planning, Scheduling and Control Specialist shall:

- be conversant with all aspects of time management including, but not limited to: planning, schedule development and analysis, progress monitoring and reporting, risk management and advisory services;

- follow good industry practices for schedule development and maintenance as recognized by the Project Management Institute (PMI).

b) Scope of Services

The Consultant shall:

- provide all Time Planning, Scheduling and Control services and deliverables in accordance with the requirements outlined in the Time Management section of the Doing Business document;
- prepare a Project Work Breakdown Structure, a major Milestones Schedule and a Detailed Project Schedule which, combined with Project Cash flow Projections, shall form the Project Baseline Plan against which the progress of the overall project shall be monitored;
- during the course of the project, update the above documents as required by the Departmental Representative;
- provide a system for documentation and project control throughout the project for approval by the Departmental Representative;
- monitor and report on the progress of the work by the Consultant Team during all stages of project development and implementation;
- monitor and report on the progress of the work based on the schedule provided by the Contractor during the construction stage of the project.

Specific Time Planning, Scheduling and Control requirements relating to the various stages of project development and implementation, are presented in each of the subsequent RS Sections.

c) Monthly Progress Reports

The Consultant shall prepare and submit monthly progress reports including the following sections as defined in the Time Management section of the Doing Business document:

- Executive Summary;
- Narrative Report;
- Variance Report;
- Criticality Report;
- Exception Report;
- Work Breakdown Structure;
- Activity List;
- Milestone List;
- Project Master Schedule with Cash Flow Projections;
- Detailed Project Schedule.

The Monthly Progress Reports shall specifically identify:

- the progress of each activity to the date of the report;
- actual start and finish dates of all activities being monitored;

- all instances where deliverables and deadlines are not being met and an outline of remedial measures being taken;
- any scheduling and logic changes, both historic and planned;
- projections of progress and completion; and
- any potential delays, outstanding issues and concerns, along with options for dealing with any serious planning and scheduling issues.

RS 1.3 Cost Planning, Estimating and Control

Cost Planning, Estimating and Control are also high priorities with all Federal Government projects and shall be approached as a continuous interactive process involving planning, action, measurement, evaluations and revisions, throughout all stages of the project.

a) Cost Planning, Estimating and Control Specialist

The Consultant's project team shall include a fully qualified and experienced Cost Planning, Estimating and Control Specialist, with a demonstrated record of successful cost management on large construction projects.

The Cost Planning, Estimating and Control Specialist shall be conversant with all aspects of construction cost estimating during the project phases including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.

b) Scope of Services

The Consultant shall provide interactive and continuous cost consulting services from the commencement of project design through to construction completion, including but not limited to:

- professional advice on all matters relating to cost planning, estimating and control;
- cost planning and cash flow projection linked to the project Work Breakdown Structure and Schedule;
- cost estimating including engineering, construction and Operation and Maintenance (O&M) costs, as well as risk allowances;
- cost monitoring and cost reporting.

Specific cost planning, estimating and control requirements relating to the various stages of project development and implementation, are presented in each of the subsequent RS Sections.

c) Milestone Reports

At each of the project milestones specified in this document, the Consultant shall provide a complete submission including the required Elemental Summaries, supported by all backup work sheets clearly detailing the process used in preparing the estimate.

The detailed work sheets shall be the prime basis on which estimates shall be reviewed by PWGSC. Cost comparisons and cost reports identifying and explaining the differences between each succeeding cost estimate and their cost effect are also required.

A Milestone Report shall contain:

- Project Estimate Summary;

- Elemental Estimate Summary;
- Basis for escalation, inflation and contingency calculations;
- Detailed measurement and pricing;
- Outline description of estimate basis;
- Description of information obtained and used in the estimate including the date received;
- Listing of notable inclusions;
- Listing of notable exclusions;
- Listing of items/issues carrying significant risk;
- Estimate Reconciliation with last submission and with Construction Cost Plan.

d) Monthly Cost Reports

The Consultant shall prepare and submit Monthly Reports outlining activities during the previous month, identifying areas of concern and new information received etc., along with forecast and proposed revisions to the current estimate. This report shall include:

- Project Estimate Summary;
- Elemental Cost Summary;
- Description of the basis for estimate revision;
- Description of new information used in the estimate including the date received;
- Listing of notable inclusions;
- Listing of notable exclusions;
- Listing of items/issues carrying significant risk.

e) Exception Reports

The Consultant shall provide continuous cost monitoring, timely identification and early warning of all changes that affect or potentially affect the estimated construction costs of the project.

If the estimate falls short of or exceeds the Construction Cost Plan due to such changes, the Consultant team shall advise the Departmental Representative, and shall prepare and submit an Exception Report which shall include sufficient description and cost detail to clearly identify:

- Scope Change: Identifying the nature, reason and total cost impact of all identified and potential project scope changes affecting Construction Cost Estimate.
- Cost Overruns and Underruns: Identifying the nature, the reason and the total cost impact of all identified and potential cost variations.
- Options Enabling a Return to Construction Cost Estimate: Identifying the nature and potential cost effects of all identified options proposed to return the project within Construction Cost Estimate.

RS 1.4 Coordination within the Consultant's Integrated Team

Throughout all phases of the project, the Consultant shall:

- a) assume responsibility for coordinating the work of any Sub-Consultants and specialists retained by the Consultant;
- b) ensure clear, accurate and ongoing communication of concept design, budget, and scheduling issues including changes - as they relate to the responsibilities of all Sub-Consultants and specialists from initial reviews to post construction reports;
- c) co-ordinate the Consultant Team's input for updates to the existing PWGSC Risk Management Plan for this project;
- d) co-ordinate the Quality Assurance process ensuring submissions of Sub-Consultants are complete and signed-off by the designated senior reviewer; and
- e) ensure Sub-Consultants provide adequate site inspection services and attend all required meetings.

RS 2 PRE-DESIGN / ANALYSIS OF PROJECT REQUIREMENTS

RS 2.1 General Requirements

The purpose of this Phase is to have the Consultant:

- a) carry out specific site studies and technical investigations, described herein, in order to obtain essential information needed to complete the project;
- b) review, analyze and report on all aspects of the project requirements;
- c) review and analyze all available existing information;
- d) identify any additional information or studies that shall be needed to deliver the project;
- e) identify and verify all authorities having jurisdiction over the project, as well as all codes, regulations and standards that apply;
- f) develop a project work breakdown structure, a detailed project schedule and project cash flow projections for each stage of the project life cycle;
- g) develop updated indicative (Class 'D') construction cost estimate including risk allowances;
- h) deliver a comprehensive Pre-Design Report covering all of the above elements.

The approved Pre-Design Report shall become the formal project work plan and shall be utilized throughout the project to guide the delivery of services.

RS 2.2 Site Studies and Technical Investigations

The Consultant shall carry out the following Site Studies and Technical Investigations, which are deemed to be included in the scope of services for this project, and shall be included in the Consultant's price proposal for RS 2, as per details provided for each study.

Specific terms of reference, milestones and schedule for conducting these Site Studies and Technical Investigations shall have to be prepared by the Consultant and be submitted to the Departmental Representative for review and approval, before starting the studies.

The Site Studies and Technical Investigations shall be incorporated into the project Work Breakdown Structure and Detailed Project Schedule.

a) Environmental Assessment (EA)

The purpose of the EA is to predict and analyze any beneficial or adverse environmental impacts that may result from the project, as well as any direct effects of these impacts on socio-economic, archaeological and heritage aspects of the study area.

Scope and Conditions:

- Provide all necessary expertise, services and equipment to complete a Screening Level EA by following the guidelines and principles established by the Canadian Environmental Assessment Act (CEAA) and the Canadian Environmental Assessment Agency;
- Provide the services of a qualified EA expert who has conducted at least three (3) federal level Environmental Assessments, in accordance with the Canadian Environmental Assessment Act, since 2005 for projects similar to the one in this Project Brief;

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- Develop and submit, for the Departmental Representative's review and approval, specific terms of reference, milestones and schedule for the EA. The terms of reference shall confirm the scope of the project, scope of the assessment, and scope of the environmental components to be considered; The tasks to be carried out are based on the mandatory requirements of the CEAA and other guidance materials, which can be found at <http://www.ceaa.gc.ca> . The tasks include, but are not limited to:
 - In conjunction with PWGSC, confirm the scope of the project, scope of the assessment, and scope of the environmental components to be considered;
 - Identify other responsible authorities for this project and co-ordinate their involvement in the assessment using written authorization from PWGSC;
 - Organize and hold all necessary public consultations to inform stakeholders and acquire pertinent information regarding environmental and socio-economic impacts;
 - Identify the potential environmental effects which could result from project interactions with environmental components, and vice versa;
 - Determine whether the project is likely to cause significant adverse environmental effects, and determine whether mitigation measures are required to eliminate or reduce environmental effects;
 - Propose/describe all required mitigation measures, develop a plan for their implementation, and a program to monitor their implementation and effectiveness;
 - Prepare the appropriate EA reports;
 - Supply all available documents related to the EA to PWGSC to be included in PWGSC's public registry.
 - Public notice of the beginning of the EA shall be completed by PWGSC through the Canadian Environmental Assessment Registry (CEAR).
 - Public notice of the Decision, at the conclusion of the EA, shall be completed by PWGSC through the CEAR.
 - Provide all information required by PWGSC for inclusion in the Canadian Environmental Assessment Registry (CEAR).
 - Meet all pertinent stakeholders, confirm their requirements, conduct all necessary field investigations and complete the data analysis.
 - Prepare a Draft EA Report using the "EA Template- PWGSC EASPD August 2010" to provide a framework for the results of the analysis. The report shall:
 - sufficiently explain how the assessment arrived at its conclusion;
 - provide a clear description of any proposed mitigation measures, and outline any monitoring requirements that the Consultant believes are necessary;
 - cover the sections described in the EA Report template provided by PWGSC.
 - Amend the Draft EA Report as required and submit the final EA Report, in both official languages, including a detailed Mitigation Measure Monitoring Program.
 - Supply all available documents related to the EA to PWGSC to be included in PWGSC's public registry.

b) Geotechnical Investigation and Analysis.

Scope and Conditions:

- Provide all necessary expertise, services and equipment and take full responsibility for the program to carry out site geotechnical investigations, including a sufficient number of bore holes taken at appropriate locations, to obtain accurate soils and bedrock coefficients and parameters for the complete design of the substructure of the proposed dam;
- Develop and submit, for the Departmental Representative's review and approval, specific terms of reference, milestones and schedule for conducting the investigation and analysis;
- The related analysis shall be for the applicable dam importance category as per the conditions of the Dam Safety Guidelines 2007 of the CDA and any updates;
- Provide the services of a qualified geotechnical engineer to supervise the field investigation, interpret and analyze the results, and make recommendations;
- Produce a report on the findings and analyses including: an Executive Summary, Scope of Work, Methodology, Analysis, Results, Recommendations and Conclusions for discussion and review by PWGSC. The report shall also include records of the field investigations;
- Make all necessary arrangements, conduct complete field investigations, and start data analysis;
- Finalize the investigation, the analyses and the report, as described above, including any recommendations for adjustments to Project Requirements;
- Submit the report, in both official languages, to the Departmental Representative for review and approval.

c) Hydraulic Study and Analysis

Scope and Conditions:

- Provide all necessary expertise, services and equipment to carry out a hydraulic study and analysis of the current flow capacity of Bay Lake and the Montreal River channels at the Latchford dam location, and examine the options for providing sufficient flow capacity through the dam to meet the CDA Dam Safety Guidelines requirements for hydraulic capacity.
- Develop and submit, for the Departmental Representative's review and approval, specific terms of reference, milestones and schedule for conducting the study and analysis.
- Obtain information on flood flow characteristics of the river upstream and downstream of the dam location.
- PWGSC shall provide profiles of the river bed at the dam, upstream and downstream from the dam.
- Construct and calibrate a model of the lake and river bed and flow characteristics to analyze the existing flows and flood levels and to analyze the projected flows and flood levels as is, and with flows meeting the CDA guidelines. Derive calculated water levels, flows, extent of obstructions, possible scouring and other characteristics created by the presence of the new dam.

- Evaluate all advantages and disadvantages of various dam placements and configurations.
- Meet with related stakeholders and obtain restrictions and conditions from authorities having jurisdiction.
- Obtain information on flood flow characteristics (stage and discharge) of the lake and river at the dam location.
- Obtain profiles of the river bed at the dam, upstream and downstream from the dam to build flow model from PWGSC.
- Construct model of the lake and river bed and flow characteristics, calibrate to known conditions, and start the analysis for the range of design conditions.
- Finalize the consultations and the report, including any recommendations for adjustments to Project Requirements, as described above.
- Submit the report, in both official languages, to the Departmental Representative for review and approval.
- Prepare documentation for permits and approval of chosen configurations by authorities having jurisdiction.

RS 2.3 Scope and Activities

In addition to all of the Site Studies and Technical Investigations described in RS 2.2, and the ongoing project activities outlined in Sections PA and RS 1, the scope and activities for the Pre-Design / Analysis of Project Requirements Phase shall include the following:

a) Project Start Up Meeting

Within five (5) days after finalizing the agreement, the Departmental Representative shall arrange a Project Start Up Meeting which shall be held at a time and place to be determined by the Departmental Representative.

The purpose of the meeting is to:

- introduce key stakeholders involved in the project which may include such people as:
 - PWGSC Representatives (e.g. Project Manager, COE Engineer/Design Manager, Property manager, etc.);
 - Consultant Representatives (e.g. Consultant Team Members including any Sub-Consultants, etc.);
 - Representatives from Authorities Having Jurisdiction (e.g. Other federal departments provincial departments, cities/municipalities, etc.);
- establish positive working relationships, which shall maximize the benefits to the project from the knowledge and experience of all stakeholders, while at the same time allowing all stakeholders to maximize their benefits from the project;
- facilitate group discussions of all project requirements, objectives, issues, constraints and challenges to ensure that they are clearly defined and fully understood;
- review and discuss the project scope of work and schedule, using as a starting point the project Work Breakdown Structure and the project Schedule contained in the Consultant's Proposal for this project;

- review and build upon the project Risk Management Plan prepared by PWGSC;
- review the project cost plan/budget for verification that the costs are fair and reasonable.

The Consultant shall record decisions and prepare and distribute minutes within seventy-two (72) hours of the meeting.

b) Project Work Breakdown Structure

Within five (5) working days after the Project Start Up Meeting, the Consultant shall prepare and submit a detailed Project Work Breakdown Structure (PWBS) outlining deliverable-oriented groupings of project elements that organize and define total scope of work of the project, including all required reviews and approvals.

- The PWBS shall be developed in accordance with the requirements outlined in the Doing Business document and in PWGSC's National Project Management System (NPMS). The NPMS can be found at:
<http://www.tpsgc-pwgsc.gc.ca/biens-property/sngp-npms/index-eng.html>
- The PWBS shall be developed through at least six (6) levels: Project, Stage, Phase, Process, Sub-Process and Activity/Work Package. Each descending level represents an increasingly detailed definition of project work.

c) Project Master Schedule / Cash Flow Projections

Within ten (10) working days after the Project Start Up Meeting, the Consultant shall prepare and submit a Project Master Schedule and Cash Flow Projections that account for all major project milestones and deliverables associated with each project phase.

- Unless specified otherwise in this Section, quantified days duration refers to working days, which is based on a five (5) day work week and discounts all statutory holidays (approximately 250 working days per year).
- The original Project Master Schedule and Cash Flow Projections shall be "frozen" to provide an original Project Baseline against which the progress of the overall project shall be monitored.
- The Project Baseline may have to be revised as instructed by the Departmental Representative during the course of the project. All revised Project Baselines shall be reconciled with the original Project Baseline to ensure a continuous audit trail.

d) Detailed Project Schedule

Within twenty (20) working days after the Project Start Up Meeting, the Consultant shall prepare and submit a Detailed Project Schedule.

- The Detailed Project Schedule shall include, as a minimum, all Consultant activities, as well as all necessary reviews and approvals, throughout each and every phase of the project.
- The schedule shall include sufficient details to clearly demonstrate the sequence and interdependency of all activities and to provide a reasonable basis for progress monitoring and coordination all project activities.
- It is understood that, in initial versions of the Detailed Project Schedule, details pertaining to activities in later phases of the project shall have to be approximated. As the work

progresses and the scope of construction work becomes more clearly defined, the Consultant shall develop more detailed schedules and cash flows.

- Activities with no float, which form the "Critical Path" shall be calculated and clearly indicated on the logical network, as being a continuous series of activities through the project. No more than twenty-five (25) percent of the activities shall be critical, or near critical. Near critical is defined as float in the range of one (1) to five (5) working days.

e) Review of Existing Documentation

The Consultant shall:

- Review and assess all available existing documentation related to the project.
- Confirm that all necessary pre-design documentation required for this project is available and confirm that the information is still current.
- Notify the Departmental Representative of any missing information needed to complete the project.
- Prepare and submit, for the review and approval of the Departmental Representative, a report on Review of Existing Documentation, including any recommendations for adjustments to Project Requirements.

f) Analysis of Regulatory Requirements

The Consultant shall:

- Confirm all regulatory or statutory requirements affecting the project and describe their potential impact on the project.
- Identify all Authorities Having Jurisdiction over the project and confirm their technical and regulatory requirements, as well as their review and approval requirements at various project phases.
- Confirm all applicable codes, regulations and standards that shall govern the design and the implementation of the project.
- Prepare and submit, for the review and approval of the Departmental Representative, a report on the Analysis of Regulatory Requirements.

g) Site Surveys and Inspections

Without being limited to the following, the Consultant shall visit and inspect the project site and surrounding areas:

- to conduct all necessary site inspections, surveys, measurements, evaluations, etc., to obtain any additional detailed data that may be required to supplement information contained in existing documentation;
- to become familiar with the site's geographical and hydrological features;
- to correlate the information contained in existing project documentation with actual on-site features and conditions;
- to verify information contained in PWGSC's site plans and record any discrepancies or needed adjustments;

- to identify possible locations for setting up field offices and for mobilization and storage of construction materials and equipment;
- to verify the availability and capacity of local utility services that may have an impact on the project;
- to identify, at the earliest stage, potential traffic issues related to construction;
- to identify any local issues and constraints that may impact the project;
- to identify any designated substances that may have been noticed during inspections;
- to identify any issues and/or opportunities relating to environmental protection, sustainable development or waste management, that may warrant further consideration;
- to consult with local personnel with respect to site specific performance issues and operational requirements.

Prepare and submit, for the review and approval of the Departmental Representative, a report on the findings of the Site Surveys and Inspections, including any recommendations for adjustments to Project Requirements.

h) Additional Site Studies and Investigations

During the course of Site Studies and Technical Investigations, the Review of Existing Documentation, and Site Surveys and Inspections, as described in previous subsections, the Consultant may identify missing pertinent information needed to complete the project.

In such cases, the Consultant shall propose a work plan, terms of reference, schedule and cost estimates for conducting the necessary site studies and investigations to acquire and analyze the missing pertinent information. Also, provide an assessment of the risks to the project of not proceeding with the proposed studies and investigations.

This work would only be carried out if the Departmental Representative grants approval. Should such an approval be granted, the approved work and associated fees and disbursements would then be treated as an amendment to the Consultant contract and be processed accordingly.

i) Analysis of Project Requirements

The Consultant shall:

- Review, analyze and confirm all Project Requirements as outlined in this Project Brief including requirements relating to, but not limited to:
 - project objectives, issues, constraints and challenges;
 - design principles;
 - design and performance;
 - sustainable development;
 - environmental protection;
 - waste management;
 - commissioning and O&M;

- Assess the results and findings of the following activities, when they become available, and make recommendations for any adjustments to the Project Requirements in a report for the review and approval of the Departmental Representative:
 - Review of Existing Documentation;
 - Analysis of Regulatory Requirements;
 - Site Surveys and Inspections;
 - Site Studies and Technical Investigations;
 - Additional Site Studies and Investigations, as applicable.
- Prepare and submit, for the review and approval of the Departmental Representative, a report on the review, analysis and confirmation of Project Requirements, including approved adjustments.
- The approved Project Requirements report, together with the approved report on the Analysis of Regulatory Requirements, shall form the basis for developing and confirming the criteria and parameters that shall govern the design and construction, as well as all other technical aspects of the project.
- It is understood that specific Project Requirements may require further adjustments as the project progresses and new pertinent information becomes available.

RS 2.4 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

The Consultant shall prepare and submit the following deliverables for review and approval by the Departmental Representative.

- a) Minutes of all project Progress Meetings, as per PA 1.5 and Other Meetings, as per PA 1.6;
- b) Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- c) A complete record of decision of the Project Start Up Meeting as per RS 2.3 a);
- d) A Project Work Breakdown Structure as per RS 2.3 b);
- e) A Project Master Schedule and Cash Flow Projections as per RS 2.3 c);
- f) A Detailed Project Schedule as per RS 2.3 d);
- g) An updated project Risk Management Plan;
- h) A report on the Review of Existing Documentation including, but not limited to:
 - A list of all documents that were reviewed;
 - Confirmation that all necessary pre-design documentation required for this project is available and confirmation that the information is still current and up-to-date;
 - Identification of any missing pertinent information to complete the project;
 - Any recommendations for adjustments to Project Requirements, as a result of the review of existing documentation.
- i) A report on the Analysis of Regulatory Requirements including, but not limited to:

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- A list of all regulatory or statutory requirements affecting the project and a summary of their potential impact on the project;
 - A list of all Authorities Having Jurisdiction over the project and description of their requirements in terms of reviews and approvals at various project phases;
 - A list of all applicable codes, regulations and standards that shall govern the design and the implementation of the project.
- j) A report on the findings of the Site Surveys and Inspections covering all the elements outlined in RS 2.3 g);
- k) Site Studies and Technical Investigations reports and other deliverables as outlined for each study identified in RS 2.2;
- l) For each Additional Site Study and Investigation (as applicable), that may be deemed necessary to acquire and analyze the missing pertinent information:
- A proposal including: a work plan, terms of reference, schedule and cost estimates for conducting the proposed site study and investigation. Also, an assessment of the risks to the project of not proceeding with the study and investigation;
 - Obtain the Departmental Representative's approval before proceeding with the study/investigation;
 - Specific requirements regarding scope, schedule and deliverables shall be confirmed by the Departmental Representative.
- m) A report on Project Requirements, including, but not limited to:
- Results of the review and analysis of all elements outlined in RS 2.3 i);
 - Listing and description of all recommendations regarding adjustments to Project Requirements, including those made as a result of other activities in RS 2.2 and RS 2.3;
 - Pertinent details of all approved recommendations for adjustments to Project Requirements;
 - Confirmation of Project Requirements, including approved adjustments.
- n) Report on Consultant's Rebuttal to PWGSC Quality Assurance Reviews including, but not limited to:
- Review and analysis of comments provided by the PWGSC Project Team; and
 - Written response to all comments received, either explaining why comments are being challenged by the Consultant, or confirming how comments were addressed or incorporated into the work.

The Consultant shall also prepare and submit an integrated Pre-Design Report for review and approval by the Departmental Representative.

The Pre-Design Report shall consolidate the deliverables identified in RS 2 - PRE-DESIGN / ANALYSIS OF PROJECT REQUIREMENTS and shall be utilized as the benchmark project control document to monitor progress of the project. The report shall be used as a basis for monthly reporting of progress and shall require supplements and modifications to reflect changes in project parameters as may be identified and accepted throughout the project life cycle.

The Pre-Design Report shall contain the following;

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- a) an Executive Summary;
 - b) the approved Project Work Breakdown Structure;
 - c) the approved Project Master Schedule / Cash Flow Projections;
 - d) the approved Detailed Project Schedule;
 - e) the approved updated Indicative, (Class 'D') Construction Cost Estimate;
 - f) the approved updated project Risk Management Plan;
 - g) key elements of the approved report on the Review of Existing Documentation;
 - h) key elements of the approved report on the findings of the Analysis of Regulatory Requirements;
 - i) key elements of the approved report on the Site Surveys and Inspections;
 - j) key elements of the approved Final Report for each of the Site Studies and Technical Investigations;
 - k) identification of possible Additional Site Study and Investigation that may be required, with overview of scope, schedule, risk and cost estimates;
 - l) key elements of the approved Report on Project Requirements; and
 - m) A summary of all Approved Changes in project scope, cost or schedule, including those that have resulted in amendments to the Consultant contract. Details to be provided on each change shall include, without being limited to:
 - Description of change;
 - Reason for change;
 - Risk assessment;
 - Date of approval;
 - Impact on project scope, cost and schedule;
 - Resulting approved amendment to the contract.

RS 3 DESIGN CONCEPT

RS 3.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to the Design Concept

The Consultant shall review the approved Pre-Design Documents, develop and analyze options and prepare Concept Design Documents in sufficient detail:

- a) to translate the Project Requirements into design criteria and parameters;
- b) to illustrate Design Concepts that optimize the achievement of all Project Requirements and of all design criteria and parameters;
- c) to develop alternative Construction implementation strategies, schedules and associated cost estimates;
- d) to recommend a preferred option to be developed further under RS 4 Design Development;
- e) to prepare a Class “C” Construction cost estimate for the approved option.

RS 3.2 Scope and Activities

a) Design Criteria and Parameters

- Verify and confirm the ongoing validity of the approved Project Requirements Report and the approved Report on the Analysis of Regulatory Requirements, delivered in the RS 2 - Pre-Design and Analysis of Project Requirements phase.
- Recommend, for the Departmental Representative’s review and approval, any adjustments to the Project Requirements that may be deemed necessary as the results of the Studies and Technical Investigations identified in RS 2 become available, or as other pertinent project related data becomes available.
- Revise the Project Requirements as required, to reflect approved adjustments.
- Prepare and submit a Preliminary Commissioning Plan, in accordance with the latest version of the PWGSC Commissioning Manual, including an outline of Operation and Maintenance (O&M) Criteria and sample Product Identification and Performance Verification (PI/PV) forms.
- Based on the latest approved Project Requirements and confirmed Regulatory Requirements, Codes and Standards:
 - develop and describe, with supporting background and technical justification, Design Criteria and Parameters that shall govern the design; and
 - prepare and submit, for the Departmental Representative’s review and approval, a detailed Report on Design Criteria and Parameters.

b) Design Option Development and Analysis

Identify, develop and analyze at least three (3) design options based on: the Pre-Design Documents, the approved Design Criteria and Parameters, the latest Project Requirements and any other pertinent data obtained from Site Studies and Technical Investigations.

For each design option:

- Complete a detailed analysis and describe how the option responds to the latest approved Project Requirements, covering all elements listed in PR 3 & PR 4 including, but not limited to:
 - project objectives, issues, constraints and challenges;
 - design principles, criteria and parameters;
 - principles and goals of Sustainable Development;
 - findings and recommendations from the Environmental Assessment;
 - findings and recommendations from the various Site Studies and Technical Investigations, as they become available;
 - waste management requirements;
 - Commissioning and O&M requirements;
 - all applicable codes, regulations and standards;
- Describe and assess the proposed Construction Implementation Strategies associated with the design option, including such elements as: location and alignment of structure, mobilization, phased construction, demolition, dewatering, traffic control, duration, field office and storage areas, etc.);
- Provide a construction schedule that reflects the proposed Construction Implementation Strategies and assess the impact on the overall project schedule;
- Identify/quantify potential risks associated with the option and recommend risk mitigation measures;
- Provide a breakdown of Class “D” (Indicative) estimated life-cycle costs for the option and quantify any impacts on the overall project cost;
- Recommend one design option for further development with all supporting background and technical justification;
- Prepare and submit, for the Departmental Representative’s review and approval, a detailed Report on the Concept Design Option Development and Analysis covering all the points described above.

c) Presentations

- Submit the presentation material, and supporting documentation, to the Departmental Representative for review and approval.
- Based on the results of the Option Analysis, develop an appropriate combination of handouts, drawings, 3D renderings, electronic slide show, etc., in both official languages, for presentations to PWGSC and, as required, to Authorities Having Jurisdiction.
- Provide sufficient quantities of approved presentation material, organize and deliver the presentations. Keep records of the comments received, changes requested, concurrence with presented material and approval of the recommended option, or decisions to select another option, for further design development.
- Prepare a report on the outcome of each presentation made and submit for the Departmental Representative’s review and approval.

d) Approved Option

Once the preferred option has been selected and approved by PWGSC, the Consultant shall further explore the option in sufficient detail to:

- provide a breakdown of Class “C” estimated life-cycle costs for the option and quantify any impacts on the overall project cost;
- provide additional details on the proposed Construction Implementation Strategies;
- identify specific critical design issues that shall have to be resolved in the design development, with broad recommendations on possible alternative solutions;
- provide additional details on the construction schedule and assess the impact on the overall project schedule;
- prepare and submit, for the Departmental Representative’s review and approval, a detailed Report on Approved Concept Design Option covering all the points described above.

e) Other Required Activities

- Participate in all meetings outlined in PA 1.5 and 1.6, record the issues and decisions, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting;
- Prepare and submit all required Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- Prepare and submit a detailed Designated Substance Report;
- Review and update, as required:
 - the Project Work Breakdown Structure;
 - the Detailed Project Schedule;
 - the Project Cost Estimates and Cash Flow Projections;
 - the Risk Management Plan;

RS 3.3 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

The Consultant shall prepare and submit the following deliverables for review and approval by the Departmental Representative.

- a) Minutes of all project Progress Meetings, as per PA 1.5 and Other Meetings, as per PA 1.6;
- b) Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- c) A report on updated Project Requirements, including, but not limited to:
 - recommended adjustments to Project Requirements made during this phase,
 - details of all approved adjustments to Project Requirements made during this phase,
 - confirmation of the latest Project Requirements, including approved adjustments;
- d) A detailed Report on Design Criteria and Parameters as per RS 3.2 a);

- e) A report on the Preliminary Commissioning Plan, O&M Criteria and sample PI/PV forms;
- f) A detailed Report on the Concept Design Option Development and Analysis covering all the points described in RS 3.2 b);
- g) A copy of all presentation material, and all supporting documents, for presentations to PWGSC and to Authorities Having Jurisdiction, as required, on the Concept Design Options, as per RS 3.2 c);
- h) A report on the outcome of each presentation made and submit for the Departmental Representative's review and approval;
- i) A detailed Report on the Approved Concept Design Option containing a breakdown of Class "C" estimated life-cycle costs, Construction Implementation Strategies and covering all the points described in RS 3.2 d);
- j) A detailed Designated Substance Report;
- k) An updated Project Work Breakdown Structure;
- l) An updated Detailed Construction and Project Schedules;
- m) Updated Project Cost Estimates and Cash Flow Projections;
- n) An updated Risk Management Plan; and
- o) A Report on the Consultant's Rebuttal to PWGSC Quality Assurance Reviews including, but not limited to:
 - Review and analysis of comments provided by the PWGSC Project Team; and
 - Written response to all comments received, either explaining why comments are being challenged by the Consultant, or confirming how comments were addressed or incorporated into the work.

The Consultant shall also prepare and submit an integrated Design Concept Report for review and approval by the Departmental Representative.

The Design Concept Report shall update the Pre-Design Report, consolidate the deliverables identified in this Section and continue to be utilized as the benchmark control document to monitor progress of the project. The Design Concept Report shall also provide direction for the Design Development.

The Design Concept Report shall contain the following;

- a) an Executive Summary;
- b) the approved updated Project Work Breakdown Structure;
- c) the approved updated Detailed Construction and Project Schedules;
- d) the approved updated (Class 'C') Construction Cost Estimate;
- e) the approved updated Project Cost Estimates and Cash Flow Projections;
- f) the approved updated project Risk Management Plan;
- g) a summary of the approved updated Project Requirements, with brief explanation of changes made during this phase and an overview of key Design Criteria and Parameters;
- h) key elements of the approved Preliminary Commissioning Plan and O&M Criteria;

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- i) key elements of the approved Report on Concept Design Option Development and Analysis;
 - j) a summary of the outcome of each presentation made to PWGSC and to Authorities Having Jurisdiction;
 - k) key elements of the Detailed Report on the Approved Concept Design Option containing a breakdown of Class “C” estimated life-cycle costs and Construction Implementation Strategies;
 - l) key elements of the approved Designated Substance Report; and
 - m) A summary of all changes approved in the RS 3 phase, regarding project scope, cost or schedule, including those changes that have resulted in amendments to the Consultant contract. Details to be provided on each change shall include, without being limited to:
 - Description of change;
 - Reason for change;
 - Risk assessment;
 - Date of approval;
 - Impact on project scope, cost and schedule;
 - Resulting approved amendment to the contract.

RS 4 DESIGN DEVELOPMENT

RS 4.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to the Design Development

Based on the approved Design Concept Documents, the Consultant shall further develop the design option selected for refinement at the Design Concept phase and produce Design Development Documents to describe the scope, quality and cost of the project in sufficient detail to:

- a) define the details of design components, systems and materials, for all applicable disciplines, and confirm their compliance with codes, standards and all other Project Requirements;
- b) elaborate the details of construction implementation strategies (e.g. phased construction, demolition, dewatering, traffic control, mobilization, duration, etc.);
- c) identify and assess potential risks, and recommend mitigation measures;
- d) facilitate the reviews, discussions and decisions relating to the design;
- e) develop a Substantive, Class “B” Construction cost estimate;
- f) support PWGSC during the Project Approval process; and
- g) obtain the necessary approvals to proceed to the development of Construction Documents.

RS 4.2 Scope and Activities

- a) **Design Development Work Breakdown Structure and Schedule**
 - Prepare and submit, for the Departmental Representative’s approval, a detailed Design Development Work Breakdown Structure and Schedule outlining:
 - key activities, deliverables and milestones of the Design Development process, as outlined in the sub-sections that follow;
 - key activities, sequence and targets for completing the design of the various major technical elements comprising this project, as described in RS 4.2 d), including all related detailed components, systems, materials and appurtenances; and
 - the milestone dates and degrees of completion at which the Design Development Documents shall be submitted for interim review and approval (at least at 50% stage).
- b) **Project Requirements / Design Criteria and Parameters**
 - Verify and confirm the ongoing validity of the approved Project Requirements, including applicable Regulatory Requirements, Codes and Standards.
 - Recommend, for the Departmental Representative’s review and approval, any adjustments to the Project requirements that may be deemed necessary as the Design Development progresses, or as other pertinent project related data becomes available.
 - Revise the Project Requirements as required, to reflect approved adjustments.
 - Based on the latest approved Project Requirements and confirmed Regulatory Requirements, Codes and Standards:

- further develop, update as required and describe, with supporting background and technical justification, the Detailed Design Criteria and Parameters that shall govern the design development; and
- prepare and submit, for the Departmental Representative's review and approval, a Report on Detailed Design Criteria and Parameters.

c) Commissioning Documents

- Update the Preliminary Commissioning Plan, and prepare and submit a complete Commissioning Plan, in accordance with the latest version of the PWGSC Commissioning Manual, including but not limited to:
 - updated and detailed O&M Criteria;
 - Commissioning cost estimates;
 - O&M cost estimates / budget;
 - factory and on-site testing requirements;
 - final PI/PV report forms;
- Prepare and submit draft Commissioning Specifications based on the detailed design of project components and systems.

d) Design Development Documents

Coordinate the design work of all relevant disciplines and prepare an integrated set of Design Development Documents, using an appropriate combination of drawings, specifications and narrative reports, that shall cover all of the activities and requirements outlined in the paragraphs that follow.

- Clearly describe and substantiate the details of all design components, systems, materials and appurtenances associated with the various major technical elements comprising this project, including but not limited to:
 - the substructure components (including foundation systems and hydraulic features, as applicable);
 - the superstructure components (including inspection access and operational features, as applicable);
 - approaches to the structure including: roads, sidewalks, bicycle paths, municipal utility services, landscaping, signage, etc., and all necessary tie-ins and connections to local municipal/city/provincial networks;
 - mechanical and electrical equipment and systems, including lighting and special operational equipment such as hoists, as applicable;
 - environmental mitigation measures outlined in the EA report;
 - embankment protection, surface drainage, erosion control, sediment control, etc.
- Demonstrate how the design incorporates and responds to the latest approved Detailed Design Criteria and Parameters, and the latest approved Project Requirements covering all elements listed in PR 3 & PR 4 including, but not limited to:
 - project objectives, issues, constraints and challenges;

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- technical and performance requirements;
 - design principles, criteria and parameters;
 - all applicable codes, regulations and standards;
 - principles and goals of sustainable development;
 - findings and recommendations from the Environmental Assessment;
 - findings and recommendations from the various Site Studies and Technical Investigations, as they become available;
 - waste management requirements;
 - commissioning and O&M requirements;
 - Demonstrate how the design incorporates and responds to Construction Implementation Strategies and Requirements including, but not limited to:
 - mobilization;
 - construction staging and scheduling, including lead times for special equipment, components and materials;
 - seasonal and environmental constraints;
 - demolition staging and duration;
 - dewatering (as applicable);
 - traffic control;
 - ongoing operation and functionality of existing assets;
 - construction site access, field office and storage areas.
 - Develop and submit fully coordinated and integrated Design Development drawings at a sufficient level of detail to make design decisions and develop a Substantive Class “B” construction cost estimate.
 - The Design Development drawings shall include all necessary sketches, plans, elevations, cross-sections and perspectives views to ensure effective graphical representation of all design features and Construction Implementation Strategies and Requirements.
 - Ensuring that all design and construction elements, components, systems and materials included in the project are covered, and integrating all applicable disciplines: develop and submit lists and outlines of:
 - all applicable National Master Specifications (NMS) sections to be used (including draft Commissioning Specifications as per RS 4.2 c); and
 - any additional specification sections, not currently covered in the NMS, that shall have to be created (in NMS format) based on manufacturers’ technical information, on provincial specifications or on other information from a recognized technical authority;
 - Describe and submit detailed technical information and support data relating to the Design Development including, but not limited to:
 - a description and explanation of technical and/or operational assumptions that may have been made, and based on which the design was developed;

- design calculations and results of technical analyses;
- design loads, geotechnical / foundation design requirements, hydrologic and hydraulic design requirements, seismic design requirements, traffic control requirements, etc.;
- dimensions, locations, alignments and sizes of all design components in sufficient detail to enable the design to be checked;
- proposed materials and products requiring approval, with all related manufacturers' technical literature and specifications;
- Provide a construction schedule that reflects the design and the proposed Construction Implementation Strategies and Requirements described in an earlier sub-section, and assess the impact on the overall project schedule;
- Identify/quantify potential risks associated with the design and construction. Recommend risk mitigation measures;
- Provide a Substantive, Class "B" Construction Cost Estimate, with a cost breakdown, and quantify any impacts on overall project cost;

e) Presentations

- Submit the presentation material, and supporting documentation, to the Departmental Representative for review and approval.
- Based on Design Development Documents, develop an appropriate combination of handouts, drawings, 3D renderings, electronic slide show, etc., in both official languages, for presentations to PWGSC and, as required, to Authorities Having Jurisdiction.
- Provide sufficient quantities of approved presentation material, organize and deliver the presentations. Keep records of the comments received, changes requested, concurrence with presented material and approvals.
- Prepare a report on the outcome of each presentation made and submit for the Departmental Representative's review and approval.

f) Waste Management Audit and Workplan

In accordance with the guidelines described in the PWGSC *Environmentally Responsible Construction and Renovation Handbook*:

- carry out a Waste Audit to identify the types and quantities of waste material that shall be produced during the project, as well as prepare and submit a Waste Audit Report.
- in collaboration with the Departmental Representative, confirm the project targets set for reduction, reusing and recycling.
- prepare and submit for review and approval, a Waste Management Workplan (also known as Waste Diversion Workplan) including, but not limited to:
 - a list of materials from the Waste Audit identified for reuse; potential diversion options for each of these materials; and a summary of the weight and volume of materials that can be diverted to reuse;
 - a list of materials from the Waste Audit identified as recyclable, potential diversion options for each of these materials including the name, location and description of the

market outlet, and a summary of the weight and volume of materials that can be diverted to recycling;

- on-site practices and procedures to maximize the reuse and recovery of those materials identified in the Waste Audit;
- anticipated costs associated with handling and storage on-site (e.g. bin rental costs), transportation costs (delivery to market or disposal outlets), potential revenues from the sales of materials, etc.

The Consultant shall also review and update, as required, the Designated Substance Report.

g) Other Required Activities

- Participate in all meetings outlined in PA 1.5 and 1.6, record the issues and decisions, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting.
- Prepare and submit all required Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3.
- Review and update, as required:
 - the Project Work Breakdown Structure;
 - the Detailed Project Schedule;
 - the Project Cost Estimates and Cash Flow Projections;
 - the Risk Management Plan; and
 - the Environmental Assessment Report and Mitigation Measure Monitoring Program.

RS 4.3 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

The Consultant shall prepare and submit the following deliverables for review and approval by the Departmental Representative.

- a) Minutes of all project Progress Meetings, as per PA 1.5 and Other Meetings, as per PA 1.6;
- b) Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- c) A Design Development Work Breakdown Structure and Schedule as per RS 4.2 a);
- d) A report on updated Project Requirements as per RS 4.2 b) including, but not limited to:
 - recommended adjustments to Project Requirements made during this phase,
 - details of all approved adjustments to Project Requirements made during this phase,
 - confirmation of the latest Project Requirements, including approved adjustments;
- e) A detailed Report on updated Detailed Design Criteria and Parameters, as per RS 4.2 b);
- f) Updated and new Commissioning Documents as per RS 4.2 c);
- g) Design Development Documents covering all the points described in RS 4.2 d);

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- h) A specific report on Construction Implementation Strategies and Requirements covering the related points described in RS 4.2 d);
 - i) A copy of all presentation material, and all supporting documents, for presentations to PWGSC and to Authorities Having Jurisdiction, as required, on the Design Development Documents as per RS 4.2 e);
 - j) A report on the outcome of each presentation that was carried out;
 - k) A Waste Audit Report and a Waste Management Workplan as per RS 4.2 f);
 - l) An updated Designated Substance Report;
 - m) An updated EA Report and Mitigation Measure Monitoring Program;
 - n) An updated Project Work Breakdown Structure;
 - o) Updated Detailed Construction and Project Schedules;.
 - p) A Substantive, Class “B” Construction Cost Estimate, with a cost breakdown;
 - q) An updated Project Cost Estimates and Cash Flow Projections;
 - r) An updated Risk Management Plan; and
 - s) A Report on the Consultant’s Rebuttal to PWGSC Quality Assurance Reviews including, but not limited to:
 - Review and analysis of comments provided by the PWGSC Project Team; and
 - Written response to all comments received, either explaining why comments are being challenged by the Consultant, or confirming how comments were addressed or incorporated into the work.

The Consultant shall also prepare and submit an integrated Design Development Report for review and approval by the Departmental Representative.

The Design Development Report shall update the Design Concept Report, consolidate the deliverables identified in this Section and continue to be utilized as the benchmark control document to monitor progress of the project.

The Design Development Report shall contain the following;

- a) an Executive Summary;
- b) the approved updated Project Work Breakdown Structure;
- c) the approved updated Detailed Construction and Project Schedules;
- d) the approved Substantive, Class “B” Construction Cost Estimate;
- e) the approved updated Project Cost Estimates and Cash Flow Projections;
- f) the approved updated project Risk Management Plan;
- g) a summary of the approved updated Project Requirements, with a brief explanation of changes made during this phase and an overview of key Design Criteria and Parameters;
- h) key elements of the approved updated Commissioning Documents;
- i) key elements of the approved Design Development Documents covering all the subjects outlined in RS 4.2 d);

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- j) key elements of the approved report on Construction Implementation Strategies and Requirements;
 - k) a summary of the outcome of each presentation made to PWGSC and to Authorities Having Jurisdiction;
 - l) key elements of the approved Waste Audit Report and Management Workplan;
 - m) key elements of the approved updated Designated Substance Report;
 - n) key elements of the approved updated Environmental Assessment Report and Mitigation Measure Monitoring Program; and
 - o) A summary of all changes approved in the RS 4 phase, regarding project scope, cost or schedule, including those changes that have resulted in amendments to the Consultant contract. Details to be provided on each change shall include, without being limited to:
 - Description of change;
 - Reason for change;
 - Risk assessment;
 - Date of approval;
 - Impact on project scope, cost and schedule;
 - Resulting approved amendment to the contract.

RS 5 CONSTRUCTION DOCUMENTS

RS 5.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to the development of Construction Documents.

The objective of the Construction Documents phase is to translate the approved Design Development Documents into construction drawings and specifications to guide and direct the Contractor and Sub-contractors in carrying out their work on the project.

The various stages of Construction Document preparation reflect the degree of completion of the documents and are defined, in broad terms, as follow:

- a) 33% complete: indicates that all technical aspects of the Construction Documents are coordinated and complete;
- b) 66% complete: indicates substantial technical development of the project and well-advanced plans, details, schedules, and specifications for all disciplines. All drawings and specifications are fully coordinated;
- c) 99% complete: is the submission of complete Construction Documents ready for final technical reviews and approvals, and for submission to local authorities for permit purposes. All drawings and specifications are fully coordinated;
- d) Final Submission : incorporates all revisions required in the 99% version and is intended to provide PWGSC with complete Construction Documents for tender call.

RS 5.2 Scope and Activities

Scope and activities at the various stages of Construction Document preparation are very similar. The main differences between stages are the degree of completeness of the Construction Documents as described above.

a) Construction Documents - 33%, 66% and 99% Stages

The Consultant shall, for each stage of Construction Document preparation:

- coordinate the work of all the relevant disciplines and prepare integrated sets of construction drawings and specifications covering all disciplines;
- submit drawings and specifications for PWGSC review and approval;
- attend up to two (2) technical and document production meetings, that may be arranged by Departmental Representative or by the Consultant, for the review of Construction Documents; prepare minutes of the meetings and distribute copies to all participants;
- submit drawings and specifications, at appropriate stages, to Authorities Having Jurisdiction, for review and, as required, for approval. Report to the Departmental Representative any comments received, approvals granted or changes requested;
- provide details and report on Construction Implementation Strategies including such elements as: mobilization, phased construction, demolition, dewatering, traffic control, duration, field office and storage areas, sediment and erosion control, etc.);
- submit for review and approval, any recommended adjustments to Project Requirements. Update the Report on Project Requirements, as required, to reflect approved adjustments;

- assess risks and update, as required, the Risk Management Plan;
- provide updated Substantive Class “B” Construction Cost Estimates (33% and 66%);
- provide Pre-tender Class “A” Construction Cost Estimates, with a cost breakdown (99%);
- provide updated Project Cost Estimates and Cash Flow Projections;
- provide updated Construction and Project Schedules;
- provide Commissioning Documents, as described under RS 5.2 b) (66%);
- provide updated Commissioning Documents (99%);
- as required, develop presentation material, deliver presentations to PWGSC and to Authorities Having Jurisdiction;
- prepare and submit a report on the outcome of each presentation made, including comments received, approvals granted or changes requested;
- prepare, and submit to the Departmental Representative, written response to comments made by PWGSC and by Authorities Having Jurisdiction on the submission reviews, and:
 - include clear indications on drawings and in specifications as to how comments were incorporated, in the subsequent submission; or
 - in cases where comments are being challenged by the Consultant, provide an explanation of the reasons for the challenges;

b) Commissioning Documents

As part of the 66% Construction Document stage, prepare and submit for review and approval the following Commissioning Documents, in accordance with the requirements of the latest version of the PWGSC Commissioning Manual :

- Commissioning Specifications;
- Updated/Final Commissioning Plan including, but not limited to:
 - updated Product Identification and Performance Verification (PI/PV) requirements;
 - confirmation of Contractor’s Commissioning, Performance Verification and Testing Responsibilities;
 - updated Commissioning cost estimates;
 - updated O&M cost estimates / budget;
 - installation / start-up checklists
- Systems Operations Manual (SOM) for all new equipment.

As part of the 99% and Final Construction Document stages, update the Commission Documents as required and submit for review and approval.

c) Project Approval

Assist and support the Departmental Representative in the development of documentation for Project Approval, by preparing Design Development Documents and providing necessary technical and non-technical data in a format that meets specific Integrated Investment Planning and Project Approval requirements. The data shall also include an environmental

impact statement based on the project's specific Environmental Assessment, and a Class 'B' Construction Cost Estimate.

d) Final Construction Documents

The Consultant shall:

- prepare and submit Final Construction Documents, in both official languages, to the Departmental Representative for review and approval, including:
 - complete sets of final drawings and specifications, signed and sealed by respective discipline specialists licensed in the province(s) where the project is being carried out;
 - any appended technical reports (e.g. Geotechnical studies) that shall form part of the Construction Documents, signed and sealed by respective discipline specialists licensed in the province(s) where the work is being carried out.
- as required, submit Final Construction Documents to Authorities Having Jurisdiction for review and to obtain all necessary permits. Report to the Departmental Representative any comments received, approvals granted, permits issued or changes requested;
- as required, develop presentation material, deliver presentations and prepare a report on the outcome of presentations made to PWGSC and to Authorities Having Jurisdiction, including comments received, approvals granted or changes requested;
- prepare, and submit to the Departmental Representative, written response to comments made by PWGSC and by Authorities Having Jurisdiction on the 99% reviews, and:
 - include clear indications on drawings and in specifications as to how comments were incorporated, in the Final Construction Documents; or
 - in cases where comments are being challenged by the Consultant, provide an explanation of the reasons for the challenges;

e) Additional Final Submission Requirements

As part of the Final Construction Document Submission, the Consultant shall also prepare and submit the following documents:

- Terms of Reference for a complete program of Field Quality Control Testing specifying the scope of work, methodology, type, number and frequency and estimated unit costs, as well as total estimated cost, for all testing that shall be required during construction;
- minutes of all Progress Meetings, as per PA 1.5 and Other Meetings, as per PA 1.6;
- Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- a final Report on updated Project Requirements, including, but not limited to:
 - recommended adjustments to Project Requirements made during this phase;
 - details of all approved adjustments to Project Requirements made during this phase;
 - confirmation of the latest Project Requirements, including approved adjustments.
- a final Report on updated Design Criteria and Parameters;
- final updated Commissioning Documents;
- final updated Report on Construction Implementation Strategies;

- an updated Waste Audit Report and Waste Management Workplan;
- an updated Designated Substance Report;
- an updated EA Report and Mitigation Measure Monitoring Program;
- an updated Project Work Breakdown Structure;
- updated Detailed Construction and Project Schedules;
- updated/final Pre-tender Class “A” Construction Cost Estimate, with a cost breakdown;
- updated Project Cost Estimates and Cash Flow Projections; and
- an updated Risk Management Plan.

RS 5.3 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

a) Construction Documents Submissions

Deliverables at the various stages of Construction Document preparation are very similar. The main differences between stages are the degree of completeness of the Construction Documents and of the related supporting documents and reports.

At each stage of Construction Document preparation, the Consultant shall prepare and submit for the Departmental Representative’s review and approval :

- complete sets of fully coordinated and integrated construction drawings and specifications covering all disciplines. The documents shall be developed at a degree of completeness consistent with the submission stage and cover the requirements outlined in RS 5.2;
- all other related documents and reports, as outlined in RS 5.2;
- all necessary advice and documentation input for the preparation for Project Approval as per RS 5.2 c).

b) Construction Document Report

The Consultant shall also prepare and submit an integrated Construction Document Report for review and approval by the Departmental Representative.

The Construction Document Report shall update the Design Development Report, consolidate the deliverables identified in this Section and continue to be utilized as the benchmark control document to monitor progress of the project.

The Construction Document Report shall contain the following:

- an Executive Summary;
- the approved updated Project Work Breakdown Structure;
- the approved updated Detailed Construction and Project Schedules;
- the approved Pre-tender, Class “A” Construction Cost Estimate, and cost breakdown;
- the approved updated Project Cost Estimates and Cash Flow Projections;
- the approved updated project Risk Management Plan;

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- a summary of the approved updated Project Requirements, with a brief explanation of changes made during this phase and an overview of key Design Criteria and Parameters;
 - key elements of the approved updated Commissioning Documents;
 - key elements of the approved updated Report on Construction Implementation Strategies;
 - a summary of the outcome of each presentation made to PWGSC and to Authorities Having Jurisdiction;
 - key elements of the approved Waste Audit Report and Management Workplan;
 - key elements of the approved updated Designated Substance Report;
 - key elements of the approved updated Environmental Assessment Report and Mitigation Measure Monitoring Program; and
 - Summary of all changes approved in the RS 5 phase, regarding project scope, cost or schedule, including those changes that have resulted in amendments to the Consultant contract. Details to be provided on each change shall include, without being limited to:
 - Description of change;
 - Reason for change;
 - Risk assessment;
 - Date of approval;
 - Impact on project scope, cost and schedule;
 - Resulting approved amendment to the contract.

RS 6 TENDER CALL, BID EVALUATION AND CONSTRUCTION CONTRACT AWARD

RS 6.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to Tender Call, Bid Evaluation and Construction Contract Award.

The purpose of this phase is to obtain and evaluate bids from qualified Contractors, and to award a contract for the construction of the project as per the Tender Documents and in accordance with Government Contract Regulations.

RS 6.2 Tender Call

The Consultant shall:

- a) assist the Departmental Representative in organizing and holding a site visit for the purpose of briefing potential bidders on the requirements of the construction contract;
- b) ensure that all Consultant's key project personnel, including the Resident Engineer, participate in the site visit;
- c) record questions and issues raised by bidders, as well as points of clarification and any responses provided;
- d) prepare minutes of the site visit and submit to the Departmental Representative;
- e) advise the Departmental Representative in assessing the need for Addenda to address the questions and issues raised by bidders, or any required corrections or points of clarification;
- f) examine the impact that any Addenda may have on cost and schedule, and advise the Departmental Representative accordingly;
- g) as required, prepare and submit the Addenda, with recommendations, for the Departmental Representative's approval;
- h) assist the Departmental Representative in addressing and responding to any technical inquiries that may have been submitted by bidders, in accordance with the requirements of the RFP, during the tender period.

RS 6.3 Bid Evaluation and Contract Award

In collaboration with all relevant disciplines, the Consultant shall:

- a) review and evaluate the following, and advise the Departmental Representative accordingly:
 - the technical aspects of the low bid;
 - the environmental impact and sustainability aspects of the bids;
 - alternatives and qualifications which may have been included in the bid and assess their impact on the project's budget, schedule, and risk mitigation;
 - unit and/or lump sum costs proposed in the bids as compared against Class 'A' construction cost estimates and indicate if the bid is fair and reasonable;
 - the low bidder's experience and capability to undertake the full scope of work;
 - the availability of adequate equipment to carry out the work.

- b) provide advice and assistance to the Departmental Representative regarding:
 - any pre-award negotiations with the low bidder that may take place;
 - revisions or adjustments to the Construction Documents, or to the scope of work, that may be required as a result of pre-award negotiations with the low bidder;
 - factors and considerations that would influence PWGSC's decision as to whether or not to re-tender the project.

RS 6.4 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

The Consultant shall prepare and submit the following deliverables for review and approval by the Departmental Representative.

- a) minutes of the site visit, as well a record of questions and issues raised by bidders during the site visit, as well as points of clarification and any responses provided;
- b) copies of all Addenda, with supporting documentation;
- c) copies of full notes on all inquiries during the bidding period;
- d) a bid evaluation report summarizing the findings and recommendations covering the points outlined in 6.3 Bid Evaluation and Contract Award;
- e) revisions or adjustments to the Construction Documents made as a result of pre-award negotiations with the low bidder, or in case re-tendering is deemed necessary;
- f) Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
- g) minutes of all project Progress Meetings, as per PA 1.5 and Other Meetings, as per PA 1.6;
- h) as required, an updated:
 - Project Work Breakdown Structure;
 - Project Cost Estimates and Cash Flow Projections;
 - Detailed Project Schedule;
 - Risk Management Plan;
 - Environmental Assessment Report and Mitigation Measure Monitoring Program;
 - Commissioning Documents;
 - Waste Management Workplan and Designated Substance Report.

RS 7 CONSTRUCTION AND CONTRACT ADMINISTRATION

RS 7.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to the Construction and Contract Administration.

- a) The Consultant shall provide the full range of Construction and Contract Administration services required to ensure implementation of the project in compliance with the Contract Documents, and to direct and monitor all approved work changes during construction.
- b) During the implementation of the project, the Consultant acts on the Departmental Representative's behalf to the extent outlined in the Consultant Contract, including this Project Brief document.
- c) The Consultant shall ensure that all communication, documentation and correspondence relating to Administration of the Construction Contract is in the language of choice of the construction Contractor.
- d) With the approval of the Departmental Representative, the Consultant may delegate to the Resident Site Representative some of the responsibilities outlined in this Section.
- e) PWGSC forms and templates to be used for the production of many documents required in this Section can be found at the following web site:

<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

RS 7.2 Construction Briefing Meeting

Within five (5) days of Construction Contract award, the Departmental Representative shall arrange and chair a Construction Briefing Meeting which shall be held at a time and place to be determined by the Departmental Representative.

The purpose of the meeting is to:

- a) introduce and confirm the key functions of the stakeholders involved in the project which shall include the following participants:
 - PWGSC Representatives (e.g. Project Manager/Departmental Representative, COE Engineer/Design Manager, Property Manager, Asset Manager, etc);
 - Consultant Representatives (e.g. Resident Engineer, prime contact at Consultant Office, and Sub-Consultants / Specialists as required);
 - Contractor (mandatory) and, as required, Subcontractors;
 - Representatives from Authorities Having Jurisdiction (e.g. provincial departments, cities/municipalities, etc.), as requested by the Departmental Representative;
- b) confirm project objectives, issues, constraints and challenges to ensure that they are clearly defined, fully understood, and appropriately addressed during construction;
- c) review and discuss the Contractor's proposed Detailed Construction Schedule in conjunction with the latest approved Detailed Project Schedule and identify any adjustments required to meet the project time objectives;
- d) identify and discuss construction related risks and adjust, as required, the overall project risk plan prepared by PWGSC;

- e) review and discuss the Contractor's proposed Construction Cost Breakdown in conjunction with the latest approved Project Cost Plan/Budget to verify that the proposed Construction Cost Breakdown is fair and reasonable.

The Consultant shall record decisions and actions to be taken, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting. This task may be delegated to a Resident Site Representative.

RS 7.3 Construction Progress Meetings

Although the Consultant may decide to delegate the responsibility for the following services associated with Construction Progress Meetings to a Resident Site Representative, with the approval of the Departmental Representative, accountability for these services remain with the Consultant.

The Consultant shall:

- a) arrange and chair Construction Progress Meetings, which shall be held **every two (2) weeks** throughout the entire project construction phase, and shall normally require the participation of the following parties:
 - Consultant or Consultant's Resident Site Representative (mandatory);
 - Contractor (mandatory);
 - Sub-contractors (if requested by Consultant or if invited by the Contractor with the agreement of the Consultant);
 - Consultant Technical Expert and/or Sub-consultants (as required);
 - Departmental Representative;
 - Other PWGSC Representatives (e.g. COE Design Manager, etc), as required;
 - Other Stakeholders may be identified by the Departmental Representative.
- b) verify and confirm the required meeting attendance with the Departmental Representative and ensure that appropriate meeting invitations, with all pertinent documents (e.g. agenda, documents to be reviewed and discussed, minutes from previous meeting, etc.) are sent well in advance to all who shall attend;
- c) hold the meetings in the Consultant's field office at the construction site. In cases where site office facilities at the construction site are not yet ready for holding meetings, the Consultant shall, at no extra cost to PWGSC, make alternate arrangements to accommodate the meetings;
- d) ensure that agenda items for each Construction Progress Meeting include, without being limited to:
 - Review and approval of agenda;
 - Review and approval of previous minutes;
 - Progress on actions items from previous meetings;
 - New business;
 - Construction schedule review and update;
 - Construction budget/cash flow review and update;
 - Changes: Contemplated Change Notices (CCN) in progress, approved Change Orders;

- Status of shop drawings development and review;
 - Site instructions;
 - Environmental issues;
 - Health and safety.
- e) record decisions and actions to be taken, as well as prepare and distribute draft minutes to all participants within seventy-two (72) hours of the meeting.

RS 7.4 Time Planning, Scheduling and Control

The Consultant shall:

- a) **within five (5) days** of Construction Contract award, obtain from the Contractor a Detailed Construction Schedule, with Commissioning components shown separately;
- b) review the proposed Detailed Construction Schedule for conformity with the latest approved Detailed Project Schedule, identify any discrepancies and risks that may affect the achievement of project time objectives, advise the Departmental Representative accordingly;
- c) submit, for the approval of the Departmental Representative, recommendations for:
 - acceptance of the Contractor's Detailed Construction Schedule; or
 - any adjustments that may be required to the Detailed Project Schedule; and/or
 - any adjustments that may be required to the Contractor's Detailed Construction Schedule.
- d) instruct the Contractor to adjust the Detailed Construction Schedule, in accordance with the Departmental Representative's directives, and to resubmit the schedule for review and approval;
- e) once the Contractor's Detailed Construction Schedule has been accepted by the Departmental Representative it shall form the basis for monitoring the progress of the work;
- f) monitor the progress of the work against the approved Detailed Construction Schedule, investigate and record any discrepancies or delays, advise the Contractor in writing and request that remedial action be taken;
- g) should the work continue to fall behind schedule, because of lack of cooperation by the Contractor, or for any other reason, immediately advise the Departmental Representative with recommendations to correct the situation;
- h) only the Department Representative may approve any request for Time Extensions. Approvals shall be issued in writing by PWGSC;
- i) produce and submit Monthly Progress Reports as specified in RS 1.2.

RS 7.5 Cost Planning, Estimating and Control

The Consultant shall:

- a) **within five (5) days** of Construction Contract award, obtain the Contractor's proposed Construction Cost Breakdown;

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- b) review the Contractor's proposed Construction Cost Breakdown in conjunction with the latest approved Project Cost Plan/Budget to verify that the proposed Construction Cost Breakdown is fair and reasonable;
 - c) identify any discrepancies and risks that may affect the achievement of project budget objectives, advise the Departmental Representative accordingly;
 - d) submit, for the approval of the Departmental Representative, recommendations for:
 - acceptance of the Contractor's Construction Cost Breakdown; or
 - any adjustments that may be required to the Project Cost Plan/Budget; and/or
 - any adjustments that may be required to the Contractor's Construction Cost Breakdown.
 - e) instruct the Contractor to adjust the Construction Cost Breakdown, in accordance with the Departmental Representative's directives, and to resubmit the cost breakdown for review and approval;
 - f) once the Construction Cost Breakdown has been approved by the Departmental Representative, it shall form the basis for monitoring construction budget/cash flow and evaluating the progress of the work;
 - g) monitor budget/cash flow requirements and the value of progress of work against the approved Construction Cost Breakdown, record any discrepancies or overruns, advise the Contractor in writing and request that remedial action be taken;
 - h) should the work continue to exceed approved Construction Cost Breakdown, because of lack of cooperation by the Contractor, or for any other reason, immediately advise the Departmental Representative with recommendations to correct the situation;
 - i) provide cost advice during construction;
 - j) Produce and submit the following cost control reports:
 - Milestone Reports, as per RS 1.3 c);
 - Monthly Cost Reports, as per RS 1.3 d); and
 - Exception Reports, as per RS 1.3 e).

RS 7.6 Sub-Contractor Changes

The Consultant shall:

- a) verify that the Contractor is using only the Sub-contractors listed on the Tender Form;
- b) obtain the full list from Contractor **no later than ten (10) working days** after the award of the Construction Contract, review the list and advise the Departmental Representative accordingly;
- c) review all requests from the Contractor for changes of Sub-contractors, and submit recommendations to the Departmental Representative;
- d) Sub-contractor changes can only be authorized by the Departmental Representative. Changes are only considered when they involve no increase in cost and no reduction in product and service quality.

RS 7.7 Labour, Health and Safety Requirements

The Consultant shall:

- a) verify the Contractor's compliance with all applicable codes, bylaws and regulations specified in the Construction Contract and in this Project Brief, including, but not limited to:
 - Canada Labour Code as administered by Human Resources and Skills Development Canada (HRSDC);
 - Canada Occupational Safety and Health Regulations as administered by HRSDC;
 - Provincial and Municipal safety laws and regulations;
 - Fire safety provisions during construction in accordance with applicable FCC Standards.
- b) ensure that a copy of the Labour Conditions for the project is posted in a conspicuous place on site and that they remain on the site throughout the construction contract;
- c) review and verify that the Health and Safety plan is complete, posted and accessible to everybody on the site throughout the contract;
- d) verify that appropriate notices of project have been filed with Ontario Workplace Safety and Insurance Board (WSIB).
- e) verify that the Contractor has provided the Designated Substance Report to the Sub-contractors;
- f) facilitate any site regulatory inspections requested by Authorities Having Jurisdiction, and inform the Departmental Representative of such inspections and their results;
- g) for all cases of non-compliance, instruct the Contractor in writing to take appropriate corrective action in a timely manner, and advise the Departmental Representative and the concerned Authorities Having Jurisdiction accordingly;
- h) verify and confirm that all necessary corrective actions have been taken by the Contractor, provide written acknowledgment to the Contractor and advise the Departmental Representative and the concerned Authorities Having Jurisdiction accordingly.

RS 7.8 Environmental Requirements

The Consultant shall:

- a) verify that an Environmental Emergency Response Plan has been posted and is accessible;
- b) prepare a follow-up program, if recommended in the EA;
- c) verify that all licenses, permits and Certificates of Approval have been obtained and that any conditions contained therein are being complied with;
- d) verify compliance with environmental plans and reports, update if required during the course of the project, including monitoring and follow-up programs (baseline, at critical stages during the work and post-construction site reinstatement);
- e) record any environmental incident, spill, release of toxic substance, property damage and remedial actions taken including notification of appropriate authorities.
- f) verify that a Waste Management Plan has been posted and is accessible to all site personnel;

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- g) prepare and present a mandatory training session on the Waste Management Plan for all site personnel prior to the commencement of the construction work on site;
 - h) convene update meetings, as required, to discuss progress and problems with the implementation of the Waste Management Plan;
 - g) monitor the implementation and record the progress of the solid waste management plan for both hazardous and non-hazardous materials;
 - j) verify that the facilities for solid waste management have been provided as determined by the Waste Management Plan and that appropriate signage has been posted and is visible;
 - k) verify that security of collection area is adequate to prevent contamination of segregated waste.
 - l) prepare and submit for the Departmental Representative approval a Waste Management Report including, but not limited to:
 - a summary of the key elements and targets of the Waste Management Plan;
 - descriptions of difficulties encountered during the implementation of the Plan and of remedial measures taken;
 - descriptions of the recovered construction materials during the course of the project;
 - an assessment of the degree to which the targets and anticipated results outlined in the Waste Audit and Waste Management Plan have been realized.

RS 7.9 Site Visits, Inspections and Testing

The Consultant shall:

- a) provide non-resident inspection and testing services to verify that all aspects of the construction work, commissioning and related environmental remediation measures, are carried out in accordance with the requirements of the contract documents, this Project Brief and accepted construction procedures;
- b) ensure that all testing and inspections required in the contract documents, and in the list of quality control testing approved by the Departmental Representative, are conducted;
- c) when construction contract is awarded, assist the Departmental Representative and the Contractor in briefing testing firms, to be hired by the Contractor, on required testing services, frequencies, quantities, distribution of reports, communication lines, etc.;
- d) in cases where alternate or additional testing firms may be required, the method of selection of inspection services and testing laboratories shall be pre-approved and the final selection confirmed by the Departmental Representative;
- e) evaluate testing firm's invoices for services performed and make recommendations to the Departmental Representative regarding payment of invoices;
- f) establish a written understanding with the Contractor, and the Departmental Representative, as to what stages or aspect of the work are to be inspected prior to being covered up or prior to work proceeding;
- g) verify that the Contractor has provided the agreed advance notice for portions of the work requiring testing and inspecting prior to being covered up or prior to continuing the work;

- h) provide the services of qualified personnel who are fully knowledgeable with technical, environmental and administrative requirements of project;
- i) ensure that the appropriate Consultant technical experts witness all factory and on-site testing, including testing during off-hours;
- j) carry out inspections of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents;
- k) ensure that materials and assemblies are tested, as required by the Construction Documents;
- l) inspect materials and prefabricated assemblies and components at their source or assembly plant, as may be necessary for the progress of the project;
- m) require tests of any material and construction on site that appears of doubtful quality or performance;
- n) advise the Contractor via memorandum of any work deficiencies or unapproved deviations from plans and specifications and request that appropriate remedial action be taken;
- o) report immediately to the Departmental Representative any cases where the Contractor either refuses or neglects to take corrective action in a timely manner;
- p) advise the Contractor via memorandum of any cases where tests have either not been carried out as required, or where test results do not meet specified requirements and request that appropriate remedial action be taken;
- q) notify the Departmental Representative if the test results do not meet the specified requirements or if the Contractor does not have the tests undertaken as required;
- r) immediately notify the Departmental Representative when tests fail to meet specified requirements and corrective work shall affect the project schedule;
- s) facilitate and accompany PWGSC representatives who wish to inspect or visit the construction site, record any requirements, comments or instructions. Request that such requirements, comments or instructions be confirmed in writing by the PWGSC representatives;
- t) facilitate and accompany representatives of Authorities Having Jurisdiction who wish to inspect or visit the construction site, record any requirements, comments or instructions. Request that such requirements, comments or instructions be confirmed in writing by the representatives of Authorities Having Jurisdiction.

RS 7.10 Interpretation and Clarification of Contract Documents

The Consultant shall:

- a) have the responsibility, and authority, to interpret the technical requirements of the Contract Documents;
- b) provide interpretation and clarifications of Plans and Specifications, as required in order that project not be delayed;
- c) provide, at the request of the Departmental Representative, additional detail drawings that may be required to properly clarify or interpret the Contract Documents;

- d) provide interpretations in writing and/or graphic format (as may be required), with reasonable promptness on the written request of either the Departmental Representative or the Contractor;
- e) provide the Departmental Representative with copies of all interpretation and clarification instructions given in writing, or graphically, to the Contractor;
- f) provide written findings within a reasonable time on all claims, disputes, and other matters in question between PWGSC and the Contractor relating to the execution or performance of the Work, or the interpretation of the Contract Documents;
- g) in case of claims or disputes, provide interpretations and findings consistent with the intent of the Contract Documents, showing partiality to neither the PWGSC nor the Contractor.

RS 7.11 Construction Photographs

The Consultant shall:

- a) use photographs to supplement work progress records, including implementation of environmental mitigation measures. All photographs are to be digital with file names that identify the date and time of the photos;
- b) maintain a searchable index of all photographic records including at least: filename of the individual photographs, date of the photographs and a brief description, and provide it to the Departmental Representative;
- c) submit photographs and index updates using File Transfer Protocol (FTP), together with monthly progress reports or payments, to the Consultant's Office and the Departmental Representative;
- d) use video recordings as instructed by the Departmental Representative, particularly in cases where parts of the work progress or construction techniques need to be documented.

RS 7.12 Shop Drawings

The Consultant shall:

- a) provide a list of all shop drawings to be submitted by the Contractor; track submissions and maintain an index, and provide regular updates to the Departmental Representative;
- b) review and take other appropriate action upon Contractor's submittals such as shop drawings, product data, and samples, for conformance with the general design concept of the work as provided in the Contract Documents;
- c) ensure that the Contractor submits shop drawings with enough lead time so that Consultant reviews, and any amendments and resubmission that may be required as a result of the reviews, can be done without harming the approved Construction Schedule;
- d) verify that all shop drawings have been reviewed and stamped "Checked and Certified Correct for Construction" by the Contractor before submission to the Consultant. By applying the stamp of approval, the Contractor warrants that the drawings have been checked and coordinated with the work of all trades, and that they meet all the requirements of the Contract Documents;
- e) review shop drawings and verify that they are clearly detailed and dimensioned, and are not proposing substitution of unacceptable construction or materials.

- f) return promptly to the Contractor rejected shop drawings, with clear indication of reasons for rejection, and ask the Contractor to amend and resubmit shop drawings for approval;
- g) return to the Contractor approved shop drawings stamped "reviewed" by the Consultant;
- h) ensure that the Contractor understands that review of Shop Drawings is aimed at verifying compliance with the general design only and that review by the Consultant shall not relieve the Contractor of responsibility for accuracy, quantities involved, or for meeting the requirements of the Construction Documents;
- i) send one copy of all approved shop drawings to the Departmental Representative. Ensure that shop drawings include the project number and are recorded in sequence;
- j) provide on a weekly basis an up-to-date report from the shop drawing index indicating status of shop drawings (date submitted, date reviewed, date returned etc.).

RS 7.13 Emergency Preparedness Plan

The Consultant shall oversee development by the Contractor of an Emergency Preparedness Plan specifying measures that shall be taken in the event of an exceptionally large flood occurring during construction work and commissioning to protect persons and property located along Bay Lake and along the Montreal River downstream from the Latchford Dam.

References

- Lakes and Rivers Improvement Act, R.S.O. 1990, CHAPTER L.3, and Regulations
- Dam Safety Guidelines, Canadian Dam Association

RS 7.14 Construction Changes

The Consultant shall:

- a) not have authority to change the work or the price of the Contract. All changes which affect project cost, schedule or design concept require Departmental Representative approval in advance;
- b) advise the Departmental Representative of all potential changes to scope for the duration of the construction phase;
- c) provide a full description, justification, cost estimate and recommendation in writing to the Departmental Representative for Contemplated Change Notices;
- d) upon the Departmental Representative's approval of the contemplated change, obtain a detailed quotation from the Contractor including breakdown of costs for all labour and materials, as well as an implementation schedule for extra work;
- e) review Contractor's quotation and promptly forward recommendations of acceptance or rejection to the Departmental Representative;
- f) upon approval of the Contractor's quotation, prepare a Changer Order containing all pertinent details for the approval of the Department Representative, who shall then process the Change Order for issuance to the Contractor;
- g) when Contemplated Change Notice is to be issued based on unit prices, keep accurate account of the work. Record dimensions, locations and quantities;

- h) ensure that all changes, whether additions or deletions, including those not affecting the cost of the project, are covered by Change Orders in order to provide a complete record of variations from the original contract;
- i) review any changes or substitutions proposed by the Contractor regarding materials or equipment, assess compliance with the design intent and construction specifications, make recommendations of acceptance or rejection to the Departmental Representative.

RS 7.15 Contractor's Progress Claims

Each month the Contractor shall submit a progress claim for work and materials as required in the Construction Contract.

The Consultant shall:

- a) prior to formal submission of progress claims, evaluate the amounts owing to the Contractor based on the progress of the work and discuss with the Contractor;
- b) ensure that the Contractor has submitted the progress claims by completing and signing the following documents:
 - Request for Construction Payment, including an appropriate Cost Breakdown and, as required, a Final Certification of Measurement;
 - Statutory Declaration.
- c) In cases where the Contractor requests payment for materials or equipment delivered on site, but not yet incorporated in work:
 - confirm that materials or equipment have been stored in a secure area designated by the Departmental Representative and in accordance with environmental recommendations;
 - obtain and verify a detailed list of materials/equipment with supplier's invoices showing price of each item;
 - include the above information in the progress claim;
 - as these materials and equipment become incorporated into the work, ensure that items in the Cost Breakdown are adjusted accordingly in subsequent Requests for Construction Payment;
- d) if work is based on unit prices, measure and record the quantities for verification of monthly progress claims and the Final Certificate of Measurement;
- e) review the progress claim, make revisions if necessary, and certify value of work done and materials delivered, by signing the Request for Construction Payment;
- f) forward all duly signed progress claim documents to the Departmental Representative for approval and processing in accordance with the terms and conditions of the Construction Contract.
- g) Submit with each progress claim:
 - Monthly Progress Report, as per RS 1.2 c).
 - Monthly Cost Report, as per RS 1.3 d)
 - Summary photographs of the progress of the work.

RS 7.16 Commissioning

a) Confirming Requirements

Upon Construction Contract award, and in collaboration with the Contractor, the Consultant shall review, revise as required, and confirm details of Commissioning requirements including, but not limited to:

- Commissioning schedule;
- Product Information Reports;
- Performance Verification (PV) procedures;
- Installation/Start-up Checklists procedures;
- Operations and Maintenance Manual;
- O&M Training;

The Consultant shall prepare a report summarizing the above confirmed details and submit copies to Contractor and to the Departmental Representative.

b) Commissioning Plan

Throughout the course of the construction phase, the Consultant shall:

- Review and verify that Contractor's work and deliverables, pertaining to Commissioning, are produced in accordance with Contract specifications and with the requirements of the Commissioning Plan;
- Review, and report to the Departmental Representative, the progress of all Commissioning activities and documents, including any problems and recommended courses of action;
- Update the Commissioning Plan, including the schedule, as required to better reflect actual project conditions.

c) Systems Operations Manual

The Consultant shall:

- update the Systems Operations Manual as construction progresses, ensuring that it reflects all approved changes, modifications, revisions and adjustments to the installed equipment and systems;
- Finalize Systems Operations Manual prior to the issuance of the Certificate of Substantial Performance and submit for the approval of the Departmental Representative.

d) Operations and Maintenance Manual

The Consultant shall:

- Review, verify for completeness, relevance and format the Operation and Maintenance Manual produced by Contractor in accordance with project specifications, and ensure that it reflects all approved changes, modifications, revisions and adjustments to the installed equipment and systems;
- submit review comments to the Contractor and to the Departmental Representative;

- Ensure that the Operating and Maintenance Manual is finalized prior to the issuance of the Certificate of Substantial Performance and submit the final document for the approval of the Departmental Representative

e) Testing and Performance Verification

The Consultant shall, in collaboration with the Contractor and the Departmental Representative:

- confirm the requirements and the schedule for conducting all required Testing and Performance Verification;
- confirm the list of all representatives from PWGSC, the Consultant, the Sub-Consultant, the Contractor, the Sub-contractor and, as required, the Manufacturer/Supplier who shall be present during all performance and verification tests;
- make all necessary arrangements to organize and hold the Testing and Performance Verification prior to the issuance of the Certificate of Substantial Performance;

The Consultant shall:

- witness and certify all Performance Verification (PV) procedures and tests;
- provide recommendations during the PV process to address variances from the prescribed requirements;
- review test results and immediately report to the Departmental Representative any situations where test results fail to meet prescribed requirements, along with an assessment of the impact corrective action may have on the project schedule;
- in consultation with the Departmental Representative, instruct the Contractor to rectify all deficiencies identified and recorded during the performance verification, until all systems meet the prescribed requirements. Re-test to verify compliance;
- confirm that each system is completed, safe to operate and ready for start-up;
- assist Departmental Representative in evaluating testing firm's invoices for services performed;
- prepare and submit Testing and Performance Verification Report for the approval of the Departmental Representative.

f) Training

The Consultant shall: coordinate all necessary services to ensure that PWGSC's O&M personnel are properly instructed on the operation and maintenance of all asset components and systems;

- in collaboration with the Contractor, who shall be responsible to deliver training, review the Training portion of the Commissioning Plan and develop a Training Plan including: an agenda, a schedule and proposed location for the training session(s), as well as a list of recommended participants;
- submit the Training Plan to the Departmental Representative for review and approval at least two (2) weeks prior to the proposed training dates;
- make all necessary arrangements to organize and hold the training session(s) in accordance with the approved Training Plan;

- develop training material on the subject of design intent and systems operations, based on the Systems Operations Manual. Present this material at the training sessions;
- ensure that the Contractor has developed suitable training material on the subject of operations and maintenance of components, equipment and systems, based on the Operations and Maintenance Manual. Ensure that the Contractor presents this material at the training sessions;
- prepare a summary of the training sessions, indicating dates, subject matter and all personnel present for training, and submit training summary to the Departmental Representative.

RS 7.17 Project Acceptance Board

The Consultant shall assist the Departmental Representative in setting up a Project Acceptance Board for Interim and Final Inspections of the project. The Board shall consist of, but not be limited to:

- a) Departmental Representative;
- b) PWGSC Design Manager;
- c) PWGSC Asset Manager;
- d) Consultant's Representative;
- e) Resident Site Representative;
- f) Sub-consultants Representatives, as applicable;
- g) Contractor's Representative;
- h) Sub-contractors' Representatives;
- i) Other Stakeholders, as may be requested by the Departmental Representative.

RS 7.18 Substantial Performance (Interim) Inspection

The Consultant shall:

- a) inform the Departmental Representative when satisfied that the project is substantially completed;
- b) assist the Departmental Representative in organizing the Substantial Performance Inspection meeting and convening the Project Acceptance Board to the meeting;
- c) lead the Project Acceptance Board's inspection of the work and record all unacceptable and incomplete work on a designated form;
- d) coordinate all performance verifications and testing of components and systems, in accordance with the Commissioning Plan, and record any deficiencies;
- e) estimate the cost of correcting deficiencies and completing the work, including any work that shall be postponed for operational, climatic or environmental reasons, and request from the Contractor a work plan and a schedule for carrying out all corrective actions in a timely manner;
- f) review the Contractor's work plan and schedule and, if they are found acceptable, submit them to the Departmental Representative for approval;

- g) monitor, inspect and report on the progress of actions against the approved workplan and schedule.

As appropriate, the Project Acceptance Board shall accept the project from the Contractor subject to the listed deficiencies and incomplete works being rectified by the Contractor.

RS 7.19 Certificate of Substantial Performance (Interim)

As a result of the Substantial Performance Inspection and in place of regular progress claim, PWGSC makes payment to the Contractor on the basis of the Certificate of Substantial Performance (Interim).

Payment requires completion and signing, by the parties concerned, of the following documents:

- Certificate of Substantial Performance (Interim), including an appropriate Cost Breakdown and, as required, a Final Certification of Measurement;
- Statutory Declaration (Interim);
- Certificate from the Ontario Workplace Safety and Insurance Board (WSIB);
- Hydro Certificates (Ontario), as applicable.

The Consultant shall:

- a) prepare the Certificate of Substantial Performance (Interim);
- b) verify that all items are correctly stated and all required signatures are obtained;
- c) attach the approved work plan and schedule for correcting deficiencies and completing the work to the Certificate of Substantial Performance (Interim);
- d) ensure that completed documents and any supporting documents are submitted to the Departmental Representative for approval and processing.

RS 7.20 Final Inspection

The Consultant shall:

- a) inform the Departmental Representative when satisfied that all work under the contract has been completed, including all deficiency items identified at the Interim Inspection;
- b) assist the Departmental Representative in organizing the Final Inspection meeting and convening the Project Acceptance Board to the meeting;
- c) lead the Project Acceptance Board's inspection of the work and identify any deficiencies to be corrected by the Contractor before final acceptance of the work can be granted;
- d) coordinate performance verifications and testing of components and systems that had been identified as deficient during the Interim Inspection;
- e) if everything is satisfactory at the time of the inspection, or once all deficiencies have finally been corrected, the Board confirms final acceptance of the project.

RS 7.21 Certificate of Completion (Final)

As a result of Final Inspection and in place of regular progress claim, PWGSC makes payment to the Contractor on the basis of the Certificate of Completion (Final).

Payment requires completion and signing, by the parties concerned, of the following documents:

- Certificate of Completion (Final), including an appropriate Cost Breakdown and, as required, a Final Certification of Measurement;
- Statutory Declaration (Final);
- Certificate from the Ontario Workplace Safety and Insurance Board (WSIB);
- Hydro Certificates (Ontario), as applicable.

The Consultant shall:

- a) prepare the Certificate of Completion (Final);
- b) verify that all items are correctly stated and all required signatures are obtained;
- c) ensure that completed documents and any supporting documents are submitted to the Departmental Representative for approval and processing.

RS 7.22 Take-over

The Consultant shall:

- a) in collaboration with other Project Team members, advise the Departmental Representative on establishing the date of the official take-over of the project. The date of Certificate of Substantial Performance (Interim), signifies commencement of the 12 month warranty period for work completed on the date the certificate, in accordance with the General Conditions of the construction contract;
- b) provide the Departmental Representative with original copy of Contractor's warranties for all materials and work covered by an extended warranty or guarantee, according to the conditions of the specifications;
- c) verify the completeness of Contractor's warranties and the extent of their coverage.

RS 7.23 As-Built and Record Drawings

The Consultant shall:

- a) following the take-over, obtain as-built marked-up hard copies and electronic copies from the Contractor.
- b) verify that As-Built Drawings:
 - are complete and accurate;
 - reflect actual post construction conditions and measurements;
 - incorporate relevant data from approved shop drawings and installed component data;
 - show deviations in construction from the original contract drawings, including changes resulting from Change Orders or from on-site instructions;
- c) produce Record Drawings by incorporating As-Built information into project drawings;
- d) Prepare and submit, for the Departmental Representative's approval a complete set of: signed and sealed:
 - As-Built Drawings;
 - Final Shop Drawings;

- Record Drawings.

RS 7.24 Warranty Reviews

a) General

- All work under the Construction Contract carries a minimum twelve (12) months warranty commencing on the effective date of the Certificate of Substantial Performance. Certain parts of the work may have extended warranties as specified.
- The Contractor is responsible for correcting all defects in the work during the warranty period, except for damage caused by misuse, abuse or neglect by others.

b) Ten-month Warranty Inspection

Sixty (60) days prior to expiration of the warranty period, the Consultant and/or the Consultant's Resident Site Representative shall:

- conduct a Ten-month Warranty Inspection of the project;
- verify the integrity and performance of all constructed components and systems, to ensure that they continue to effectively meet the prescribed requirements;
- review all warranty service callback work performed by the Contractor;
- identify and report deficiencies to the Departmental Representative and to the Contractor for corrective action.

c) Final Warranty Review

Just prior to the expiry of the warranty period, the Consultant and/or the Consultant's Resident Site Representative shall:

- conduct a final warranty review with the Departmental Representative;
- verify whether all deficiencies identified at the Ten-month Warranty Inspection have been corrected, and confirm any outstanding work;
- identify any other deficiencies that might have developed since the Ten-month Warranty Inspection;
- report all deficiencies to the Departmental Representative and to the Contractor for corrective action;
- do a follow-up inspection when the Contractor has corrected all deficiencies;
- inform the Departmental Representative in writing when all deficiencies listed on the Final Warranty Review deficiency list have been corrected.

RS 7.25 Deliverables

Unless otherwise specified, all deliverables shall be provided in accordance with the requirements outlined in PA 3 - SUBMISSIONS, REVIEWS AND APPROVALS.

The Consultant shall prepare and submit the following deliverables for review and approval by the Departmental Representative:

- a) Minutes of the Construction Briefing Meeting, held as per RS 7.2, including a record decisions and actions to be taken;

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- b) Meeting Agenda, list of proposed participants and minutes Construction Progress Meetings, including a record decisions and actions to be taken, as per RS 7.3;
 - b) Copy of the Contractor's Detailed Construction Schedule, along with comments and recommendations for either acceptance or for any adjustments that may be required;
 - d) Copy of the Contractor's proposed Construction Cost Breakdown , along with comments and recommendations for either acceptance or for any adjustments that may be required;
 - e) Monthly Progress Reports as per RS 1.2 and all Cost Reports as per RS 1.3;
 - f) Environmental Requirements:
 - progress report on the environmental mitigation monitoring and follow-up program, including details regarding any environmental incident and remedial action taken;
 - training session on the Waste Management Plan;
 - Waste Management Report as described in RS 7.8.
 - g) Site Visits, Inspections and Testing:
 - recommendations regarding alternate or additional testing firms may be required, the method of selection of inspection services and testing laboratories;
 - evaluation of testing firm's invoices for services performed and recommendations regarding payment of invoices;
 - written notification of cases where:
 - the Contractor does not have the tests undertaken as required;
 - tests fail to meet specified requirements;
 - the Contractor either refuses or neglects to take corrective action in a timely manner;
 - corrective work shall affect the project schedule.
 - written reports from site visits including lists of persons involved.
 - h) Interpretation and Clarification of Contract Documents:
 - additional detail drawings that may be required to properly clarify or interpret the Contract Documents;
 - copies of all interpretation and clarification instructions given in writing, or graphically, to the Contractor;
 - written interpretation and findings on all claims, disputes, and other matters in question between PWGSC and the Contractor relating to the Construction Contract;
 - i) Shop Drawings:
 - a list of all shop drawings to be submitted by the Contractor and shop drawing index;
 - one copy of all approved shop drawings, ensuring that shop drawings include the project number and are recorded in sequence;
 - up-to-date weekly reports from the shop drawing index indicating status of shop drawings (date submitted, date reviewed, date returned etc.).
 - j) An Emergency Preparedness Plan, as per RS 7.13.

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- k) Construction Changes:
- a full description, justification, cost estimates and recommendation for Contemplated Change Notices;
 - a copy of the Contractor's detailed quotations for extra work, including cost breakdown and implementation schedule, along with recommendations to approve or reject;
 - Changer Orders, prepared as required, containing all pertinent details.
- l) Contractor's Monthly Progress Claims prepared and verified in accordance with RS 7.15, including all required supporting documents;
- m) Commissioning:
- a report summarizing and confirming the details of Commissioning requirements outlined in RS 7.16 a)
 - updated Commissioning Plan as required,
 - the Systems Operations Manual, finalized prior to the issuance of the Certificate of Substantial Performance;
 - the Operating and Maintenance Manual prepared by the Contractor, finalized prior to the issuance of the Certificate of Substantial Performance;
 - Commissioning Testing and Performance Verification Report;
 - Commissioning Training including:
 - training plan;
 - training material on the design intent and systems operations, based on the Systems Operations Manual, to be presented by the Consultant at the training sessions;
 - a summary of the training sessions, indicating dates, subject matter and all personnel present for training.
- n) Substantial Performance (Interim) Inspection and Certificate:
- a record all unacceptable and incomplete work;
 - the verified Contractor's work plan and schedule for correcting deficiencies and completing the work;
 - duly completed and signed Certificate of Substantial Performance (Interim);
 - all duly completed and signed supporting documents as per RS 7.19.
- o) Final Inspection and Certificate of Completion:
- a record all unacceptable and incomplete work;
 - the verified Contractor's work plan and schedule for correcting deficiencies and completing the work;
 - duly completed and signed Certificate of Completion (Final);
 - all duly completed and signed supporting documents as per RS 7.21.
- p) A complete set of signed and sealed As-Built Drawings, Final Shop Drawings and Record Drawings;

- q) Warranty Review:
 - original copies of Contractor's warranties or guarantees, duly verified as to completeness and extent of coverage;
 - deficiency list from Ten-month Warranty Inspection;
 - report on Final Warranty Review.
- r) Updates, as required to:
 - the Project Work Breakdown Structure;
 - the Project Master Schedule and Cash Flow Projections;
 - the Detailed Project Schedule;
 - Project cost estimates (engineering and construction);
 - Risk Management Plan.

RS 8 RESIDENT SITE SERVICES DURING CONSTRUCTION

RS 8.1 General Requirements

The Consultant shall obtain written authorization from the Departmental Representative before proceeding with the services related to the provision of Resident Site Services During Construction.

- a) The Consultant shall provide full-time, Resident Site Services to inspect, co-ordinate and monitor all aspects of the site work, from the start of the project construction phase through the completion of commissioning, and to liaise with the Contractor, PWGSC, the Consultant's office and other agencies as appropriate to the work.
- b) Depending on the specific requirements of the project (e.g. hours of construction), the Consultant shall likely have to assign more than one person to properly cover the needs for full-time Resident Site Services.
- c) Consultant personnel assigned to the provision of Resident Site Services shall be generally referred to as the Resident Site Representative in this document.
- d) Subject to mutual agreement with the Consultant, the Departmental Representative may require the Resident Site Representative to carry out additional responsibilities.
- e) With the approval of the Departmental Representative, the Consultant may also delegate to the Resident Site Representative some of the responsibilities outlined in RS 7 - CONSTRUCTION AND CONTRACT ADMINISTRATION that are not specifically covered in this Section.
- f) Ultimately, the Consultant remains accountable for all Construction Contract Administration services and deliverables, including Resident Site Services During Construction .
- g) The following provides details on the roles and responsibilities of the Resident Site Representative, which are essentially aimed at supporting the provision of services and deliverables outlined in RS 7 - CONSTRUCTION AND CONTRACT ADMINISTRATION.

RS 8.2 Qualifications, Experience and Knowledge

Personnel assigned to the Resident Site Services Team shall be fully qualified, experienced and knowledgeable in providing construction site supervision, inspection and monitoring on projects involving major civil engineering structures/assets.

The Consultant shall submit résumés, confirming the qualifications and experience of proposed Resident Site Services personnel, and obtain the approval of the Departmental Representative before assigning the personnel to the project.

Qualifications of the various Resident Site Services personnel shall be as in the following sub-sections.

a) Qualification and Experience

The **Resident Engineer** shall:

- be a Professional Engineer licensed in the Province(s) where the work is to be carried out;
- have a minimum of ten (10) years of recent and pertinent experience in providing Resident Site Services during construction on projects involving assets similar to the one covered in this Project Brief;

- have spent at least five (5) of the above mentioned years in a lead role fully responsible for coordinating, assigning responsibilities, supervising and monitoring the work of a Resident Site Services Team;
- have recent experience relating to the implementation and monitoring of environmental mitigation measures for projects near water.

The **Resident Inspector** shall:

- be a qualified Civil Engineering Technologist;
- have a minimum of ten (10) years of recent and pertinent experience, under the supervision of a Professional Engineer, in providing Resident Inspection Services during construction on projects involving assets similar to the one covered in this Project Brief;
- have recent experience relating to the implementation and monitoring of environmental mitigation measures for projects near water.

b) **Knowledge**

The Resident Site Services Team shall become thoroughly familiar with:

- the requirements of the Contract Documents including, but not limited to: plans, specifications, any amendments, approved shop drawings, testing and quality control requirements, etc.;
- the requirements outlined in this Project Brief;
- the issues, constraints and challenges related to this project, as well as the agreed approach and methodology to deal with them;
- the latest versions of the project and construction schedules;
- the latest versions of the construction budgets and cash flows;
- the approved list of quality control testing to be done, details of any arrangements made with inspection and testing organizations;
- any advance notice requirements to be provided by the Contractor for portions of the work requiring quality testing prior to being covered up or prior to continuing the work;
- the authorities and key responsibilities of project team members and of other stakeholders including, but not limited to: the Departmental Representative, the PWGSC Design Manager, the Consultant and Sub-consultants, the Contractor and Sub-contractors, the Asset Operators, etc.;
- Provincial and Municipal standards for the health and safety of construction workers;
- Conditions related to traffic management during construction;
- Conditions related to permits issued by authorities having jurisdiction or to any agreements between them and PWGSC;
- Public safety response procedures related to inter-provincial bridges.

RS 8.3 Communication and Liaison

The Resident Site Representative shall:

- a) ensure constant communication amongst the Departmental Representative, the Consultant's Office, the Contractor and Sub-contractors, the Regional Fire Commissioner, the Provincial Departments of Labour and other stakeholders, as requested by the Departmental Representative;
- b) communicate formally with the Contractor via memorandum only and immediately file copies of communications with the Departmental Representative, and the Consultant's Office;
- c) not deal directly on formal business with the Contractor's foreman or tradesmen, or interfere with the progress of the work;
- d) have informal discussions about the project with Contractor and Sub-contractor personnel, only with the agreement of the Contractor,
- e) convey Consultant's Office clarifications or instructions regarding the required standards of workmanship to the Contractor;
- f) contact the Consultant's Office immediately when information or action is required that is beyond the Resident Site Representative's levels of responsibility or authority (e.g. approvals of samples or shop drawings, interpretation of specific technical details, drawings and specifications, etc.;
- g) ensure that Departmental Representative and the Consultant's Office are notified promptly when key pieces and/or components of materials and equipment are delivered, so that necessary arrangements can be made for the appropriate inspection prior to installation;
- h) verify the Contractor's proposed scope of work, approach and schedule involving any temporary or permanent connections into existing utility or operational systems; obtain approval in writing prior to the work being carried out;
- i) advise the Departmental Representative of any interruption of normal services and provide a minimum 24 hours advanced notice prior to the work being undertaken;
- j) provide a prior notice of four (4) days for works requiring modifications to traffic flow.

RS 8.4 Construction Meetings

- a) Construction Briefing Meeting
 - Within five (5) days of Construction Contract award, the Departmental Representative shall arrange and chair a Construction Briefing Meeting which shall be held at a time and place to be determined by the Departmental Representative, as per RS 7.2.
 - The Resident Site Representative shall participate in the Construction Briefing Meeting and shall record decisions and actions to be taken, as well as prepare and distribute minutes to all participants within seventy-two (72) hours of the meeting.
- b) Construction Progress Meeting
 - The Resident Site Representative shall be responsible for all services and deliverables associated with Construction Progress Meetings, as outlined in RS 7.3.

- Construction Progress Meeting shall be held **every two (2) weeks** throughout the entire project construction phase.

RS 8.5 Time and Cost Control

a) Time Planning, Scheduling and Control

The Resident Site Representative shall:

- be responsible for all services and deliverables associated with Time Planning, Scheduling and Control, throughout the entire project construction phase, as outlined in RS 7.4 ;
- seek advice and assistance, as required, from the Consultant's Time Planning, Scheduling and Control Specialist.

b) Cost Planning, Estimating and Control

The Resident Site Representative shall:

- be responsible for all services and deliverables associated with Cost Planning, Estimating and Control, throughout the entire project construction phase, as outlined in RS 7.5 ;
- seek advice and assistance, as required, from the Consultant's Cost Planning, Estimating and Control Specialist.

RS 8.6 Interpretation of the Contract Documents

The Resident Site Representative shall:

- a) be generally responsible for providing on-site interpretation of Contract Documents and instructing the Contractor accordingly;
- b) obtain interpretation of Contract Documents from the Consultant's Office in cases where:
 - technical details or specifications are beyond the recognized capacity of the Resident Site Representative; or
 - the interpretation of the Resident Site Representative is disputed by the Contractor.
- c) communicate in writing to the Contractor any interpretation of Contract Documents received from the Consultant's Office.

RS 8.7 Inspection and Testing

The Resident Site Representative shall:

- a) provide full time inspection services to verify that all aspects of the construction work, and related environmental remediation measures, are carried out in accordance with the requirements of the contract documents, this Project Brief and accepted construction procedures;
- b) make observations and spot checks of the site work to determine whether the work, materials and equipment conform with the contract documents and supplementary conditions;
- c) ensure that all testing and inspections required in the contract documents, and in the list of quality control testing approved by the Departmental Representative, are conducted;

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- d) establish a written understanding with the Contractor, and the Departmental Representative, as to what stages or aspect of the work are to be inspected prior to being covered up or prior to work proceeding;
 - e) verify that the Contractor has provided the agreed advance notice for portions of the work requiring testing and inspecting prior to being covered up or prior to continuing the work;
 - f) observe all testing and inspections, and report the results in the daily log and in the weekly reports, which are described further in RS 8.14 and RS 8.15;
 - g) advise the Contractor via memorandum of any work deficiencies or unapproved deviations from plans and specifications and request that appropriate remedial action be taken;
 - h) report immediately, to the Consultant's Office and the Departmental Representative, any cases where the Contractor either refuses or neglects to take corrective action in a timely manner;
 - i) advise the Contractor via memorandum of any cases where tests have either not been carried out as required, or where test results do not meet specified requirements and request that appropriate remedial action be taken;
 - j) notify the Consultant's Office and the Departmental Representative if the test results do not meet the specified requirements or if the Contractor does not have the tests undertaken as required;
 - k) arrange for the Consultant's structural, geotechnical, traffic, electrical and other technical specialists to make the periodic inspections required by the Consultant's contract, and for conducting these inspections at a time and in a manner that does not unduly impede the progress of the work;
 - l) facilitate and accompany PWGSC representatives who wish to inspect or visit the construction site, record and report to the Consultant's Office any requirements, comments or instructions issued by PWGSC representatives. Request that such requirements, comments or instructions be confirmed in writing by the PWGSC representatives;
 - m) facilitate and accompany representatives of Authorities Having Jurisdiction who wish to inspect or visit the construction site, record and report to the Consultant's Office and the Departmental Representative any requirements, comments or instructions issued by the Authorities Having Jurisdiction. Request that such requirements, comments or instructions be confirmed in writing by the representatives of Authorities Having Jurisdiction;
 - n) assist in the preparation of all deficiency reports, in collaboration with the Departmental Representative and Consultant's representatives, during Interim and Final Inspections, as well as Commissioning and Warranty Reviews;
 - o) be responsible for the measurement of all work to be done on a unit-cost basis;
 - p) ensure that the construction site health and safety plan is adhered to at all times during construction, record updates and changes as required.

RS 8.8 Review and Processing of Contractor's Submissions

The Resident Site Representative shall:

- a) review all submissions (and re-submissions, as required) provided by the Contractor and submit comments to the Consultant's Office and the Departmental Representative, retaining a copy for record purposes;
- b) monitor and record the progress of shop drawing review. Review, discuss, record problems and identify remedial action;
- c) review shop drawings as they become available from the Contractor and provide comments to the Consultant's Technical Specialists who shall be responsible for confirming approval of the shop drawings;
- d) verify that the materials delivered to site and the construction procedures utilized are consistent with the approved shop drawings and that the Contractor is not proposing substitutions of unacceptable construction materials or methods;
- e) report to the Consultant's Office and the Departmental Representative if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.

Reviews by the Resident Site Representative do not relieve the Consultant's technical specialists of professional responsibility for checking the work of the Contractor;

RS 8.9 Environmental Protection

The Resident Site Representative shall:

- a) monitor the implementation and record the progress of Environment Mitigation Measures and Monitoring Program;
- b) contact the EA practitioner for possible revisions to the Environment Mitigation Measures and Monitoring Program as may be required by changes during construction;
- c) monitor the implementation and record the progress of the solid waste management plan for both hazardous and non-hazardous materials;
- d) record any environmental incident, spill, release of toxic substance, property damage and remedial actions taken including notification of appropriate authorities.

RS 8.10 Hazardous Construction Operations

The Resident Site representative shall:

- a) examine all site conditions and methods to be used by the Contractor when undertaking hazardous operations;
- b) verify that all necessary precautions and actions are taken by the Contractor to safeguard the life safety of the workers and to ensure the protection of property; in accordance with the Site Safety Plan;
- c) when fully satisfied that all necessary precautions and actions are being taken, give written authorization, including any specific instructions and requirements, to the Contractor to proceed with the hazardous operations;

- d) have the written authority document countersigned by the Contractor to confirm the Contractor's agreement to all conditions, instructions and requirements, and keep the countersigned copy in the Site Records;
- e) inspect the areas where hazardous work is under way to ensure that the Contractor is maintaining the agreed safety standards. Any infractions may result in the Resident Site Representative having to issue a stop work order;
- f) report all infractions, or work stoppage orders, in writing and verbally to the Consultant's Office and the Departmental Representative.

RS 8.11 Emergencies

- a) In the case of emergencies where safety of persons or damage to property is concerned; or where work activities are endangered by the actions of the Contractor or the elements, the Resident Site Representative shall:
 - give immediate written notice to the Contractor of the possible hazard;
 - contact the Consultant's Office and the Departmental Representative immediately for further instructions;
 - if necessary, stop the work or give orders for necessary remedial action to protect the safety of the workers or Crown property, followed up with written confirmation.
- b) In the case of traffic related or other types of public security emergency incidents, the Resident Site Representative shall immediately contact local public security and emergency services, and follow their instructions.

RS 8.12 Changes in the Work

The Resident Site Representative shall:

- a) not authorize or order any change in the work which shall constitute a change in design or in the value of the contract except as directed in writing by the Departmental Representative;
- b) consider and evaluate any suggestions or modifications to the work proposed by the Contractor and immediately report these, with comments, to the Consultant's Office and the Departmental Representative;
- c) assist the Consultant's Office in the evaluation of changes in the work, where knowledge of job conditions is required;
- d) monitor and record the progress of Contemplated Change Notices, quotations, reviews and issue dates of Change Orders;
- e) where the Departmental Representative has granted written approval to proceed with work changes, pending issue of a Change Order, accurately record time and materials expended.

RS 8.13 Limitations

The Resident Site representative shall not:

- a) authorize or order any deviations from the contract documents;
- b) conduct tests;
- c) approve shop drawings or samples;

- d) accept any work, or portions of the work, as being substantially of finally completed;
- e) enter into the area of responsibility of the Contractor's Field Superintendent;
- f) stop the work, except in cases of :
 - infractions to established safety standards relating to hazardous construction operations, as per RS 8.10; or
 - emergencies, such as those described in RS 8.11.

RS 8.14 Daily Log

The Resident Site Representative shall keep a daily log recording such information as:

- a) weather conditions, particularly unusual weather relative to construction activities in progress;
- b) manpower on site and hours worked;
- c) major material and equipment deliveries;
- d) daily activities and major work done;
- e) start, stop or completion of activities;
- f) presence of inspection and testing firms, tests taken, results, etc;
- g) unusual site conditions experienced;
- h) significant developments, remarks, etc;
- i) special visitors on site;
- j) approvals given Contractor to undertake certain or hazardous works;
- k) environmental incidents;
- l) site instructions given to Contractor;
- m) reports, instructions from Appropriate Authorities Response Actions.

The log is the property of the Resident Site Representative. Copies of the log book, certified as copies, are to be provided to the Departmental Representative and to the Consultant at the end of the project.

Copies of the log may be filed electronically at the option of the Consultant if the provenance can be proven.

RS 8.15 Weekly Reports

The Resident Site Representative shall prepare and submit weekly reports for the Departmental Representative including, but not limited to:

- a) work progress relative to schedule showing major activities commencing or completed during the week, as well as main activities currently in progress;
- b) up-to-date status of shop drawings (date submitted, date reviewed, date returned etc.);
- c) major deliveries of materials and/or equipment;
- d) description of site instructions given and of the impact the site instruction may have had on project cost and schedule or the environment;

- e) record of Contractor's acknowledgment of receipt of all site instructions;
- f) difficulties which may cause delays in completion, including weather related problems;
- g) materials and labour needed immediately;
- h) cost estimates of work completed and materials delivered (cost plus contracts);
- i) outstanding information or action required by Consultant or PWGSC;
- j) details regarding Contractor's work force;
- k) accidents on site;
- l) life safety or hazards caused by the work, the Contractor or his agents;
- m) photographs as detailed in RS 7.11.

RS 8.16 Construction Photographs

The Resident Site Representative shall comply with the requirements regarding Construction Photographs as outlined in RS 7.11.

RS 8.17 Site Records

The Resident Site Representative shall maintain orderly and updated files at the site for the use of PWGSC Representatives, other Consultant team members and him(her)self.

Site Records shall include, without being limited to:

- a) contract and tender Documents;
- b) the latest approved construction progress schedule, as well as all previous versions and updates or amendments;
- c) a reproduction of the original contract drawings carefully preserved and kept marked up to date with all addenda, change orders, site instructions, details, as-built conditions, etc., issued subsequent to the award of the contract;
- d) approved shop drawings, and shop drawings awaiting approval
- e) approved samples, and samples awaiting approval;
- f) site instructions and contractor's acknowledgment of receipt of all site instructions;
- g) Contemplated Change Orders (CCN) and Change Orders;
- h) memoranda and other project correspondence;
- i) test results and deficiency reports;.
- j) minutes of meetings;
- k) photographs;
- l) names, addresses, telephone numbers (also home telephone numbers in case of emergencies) of key project personnel including, but not limited to:
 - PWGSC Departmental Representatives, COE Design Manager, Property Manager, etc.;
 - Consultant Team Members including Sub-consultants;

- Contractor and Sub-contractor representatives;
- local Police and Emergency Services;
- Other stakeholders as required..

RS 8.18 Site Security

- a) Special precautions shall be taken at all times to prevent unauthorized entry to the site. The Resident Site Representative is to ensure that all contractor-made openings and means of access, are firmly secured when the Contractor leaves the site.
- b) The Resident Site Representative shall liaise closely with the Consultant's Office and the Departmental Representative on all security and/or safety problems that may arise due to the Contractor's operations.

APPENDIX PB-1

Report list for Latchford Dam

Title	Author	Date (y/m/d)
Latchford Dam Stakeholder and Socioeconomic Impact Study of the Latchford Dam (Phases 1 and 2)	Pricewaterhousecoopers LLP	2010/12/10
Phase II Latchford dam engineering asset management plan	Pricewaterhousecoopers LLP	2010/07/15
Phase I Latchford dam engineering asset management plan	Pricewaterhousecoopers LLP	2010/03/01
Comprehensive detailed inspection of the Latchford dam	Genivar	2009/01/01
Latchford dam investigation	Halsall Associates Limited	2007/11/01
Latchford dam investment analysis report	Halsall Associates Limited	2007/11/01
Environmental and socio-economic pre-feasibility study	Jacques Whitford	2007/03/30
Preliminary socio-economic study	Jacques Whitford	2007/03/26
Preliminary wildlife and wildlife habitat survey and impact study	Jacques Whitford	2007/03/23
Preliminary fish and fish habitat survey and impact study	Jacques Whitford	2007/03/22
Preliminary water and sediment quality survey and impact study	Jacques Whitford	2007/03/21
Archaeological and heritage resources impact study	Jacques Whitford	2007/03/19
Numerical Modelling of Flows in Montréal River, in the absence of the Dam at Latchford, Ontario	Canadian Hydraulics Centre	2006/11/01
Option to remove the Latchford dam on the Montreal river and bay lake at Latchford, Ontario	Pwgsc-Tpsgc	2006/04/01
Detailed strategic environmental assessment reconstruction of Latchford dam part 2-1	Jacques Whitford	2006/03/31
Latchford dam removal detailed scoping for environmental and socioeconomic pre-feasibility report	Jacques Whitford	2006/03/24
Reconnaissance géotechnique reconstruction du barrage Latchford riviere Montreal, Latchford, québec	Qualitas Outaouais	2005/07/01
Rehabilitation of the Latchford dam iar report	Genivar	2005/05/01
Latchford dam removal environmental scoping assessment	Jacques Whitford	2005/03/01
Rehabilitation of the Latchford dam final report	Genivar	2004/05/01

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Numerical Modelling of Breach Scenarios on the Montréal River at Latchford, Ontario	Canadian Hydraulics Centre	2004/04/01
Supplemental Phase II Environmental Site Assessment and Sediment Quality Assessment Two Waterfront Properties Latchford, Ontario	Trow Consulting Engineers Ltd.	2004/03/01
Detailed inspection report Latchford dam project no. 454555	Remisz Consulting Engineers	2003/12/01
Comprehensive detailed inspection of the Latchford dam	Remisz Consulting Engineers	2003/10/31
Phase I and II Environmental Site Assessment Three Properties Latchford, Ontario DRFP#11671	Trow Consulting Engineers Ltd.	2003/02/01
Latchford dam diving inspection report	Ods Marine	2002/10/01
Log hoist studies at Angliers, Latchford and Laniel dams (draft)	Kathleen Murphy & Luc Beriault	2002/01/15
Latchford dam reconstruction and hydroelectric phase ii project design report	Cumming Cockburn Limited	2001/10/01
Latchford dam reconstruction and hydroelectric project, environmental screening report	Cumming Cockburn Limited	2001/10/01
Chariot-treuil pour poutrelles de vannage manuel d'utilisation et d'entretien pour le barrage de Latchford, Latchford, Ontario	Kathleen Murphy & Robert Laporte	2001/03/31
Barrage Latchford, Latchford, Ontario - rapport d'inspection sous-marine	Spg Hydro International Inc.	2000/06/01
Aquatic Investigations In Support of the Proposed Latchford Dam Re-development and Mini-Hydroelectric Project	Dillon Consulting Ltd.	1999/10/01
Environmental audit of Latchford dam	Arcturus Environmental Ltd.	1994/03/01
Latchford dam inspection report	Mie Consulting Engineers Ltd.	1992/09/01
Report of a Site Investigation Latchford Dam, for MIE Consulting Engineers	Ogs Inc.	1992/03/01
Latchford dam, Latchford, Ontario general report 1991-1992	Youssef Hamze	1992/01/01
Latchford dam, Latchford, Ontario general report	Youssef Hamze	1992/01/01
Montreal river basin hydraulic design review lower notch dam and generating station dsp no. 410.1-41.035-5	Acres International Ltd.	1991/12/01
Latchford dam inspection report	Mie Consulting Engineers Ltd.	1991/12/01
Latchford dam inspection report	Mie Consulting Engineers Ltd.	1991/12/01
Latchford dam, Latchford, Ontario, inspection 1991	Roch Berube & Youssef Hamze, Public Works	1991/10/23
Latchford dam, Latchford, Ontario inspection	Public Works	1991/06/01
Latchford dam, Latchford, Ontario, inspection 1989	Public Works	1989/01/01

Flood control dam, Latchford, ont.	Keil Dive Ltd.	1972/07/18
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