

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works & Government
Services Canada/Réception des soumissions Travaux
publics et Services gouvernementaux Canada
1713 Bedford Row
Halifax, N.S./Halifax, (N.E.)
B3J 1T3
Halifax
Bid Fax: (902) 496-5016

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

| | |
|--|---|
| Title - Sujet SWING BRIDGE REPLACEMENT | |
| Solicitation No. - N° de l'invitation EB144-150508/A | Date 2014-08-25 |
| Client Reference No. - N° de référence du client EB144-15-0508 | |
| GETS Reference No. - N° de référence de SEAG PW-\$PWA-115-5118 | |
| File No. - N° de dossier PWA-4-72016 (115) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-10-06 | Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT |
| 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: Allen (PWA), Tanya | Buyer Id - Id de l'acheteur pwa115 |
| Telephone No. - N° de téléphone (902) 496-5142 () | FAX No. - N° de FAX (902) 496-5016 |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA SEE HEREIN Canada | |

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

Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.E.)
B3J 3C9
Halifax
Nova Scot

| | |
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| 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 |

Solicitation No. - N° de l'invitation

EB144-150508/A

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

EB144-15-0508

Amd. No. - N° de la modif.

File No. - N° du dossier

PWA-4-72016

Buyer ID - Id de l'acheteur

pwa115

CCC No./N° CCC - FMS No/ N° VME

PROJECT BRIEF

Description of Project

- PD 1 Project Information
- PD 2 Project Identification
- PD 3 Project Background
- PD 4 Existing Documentation
- PD 5 Program
- PD 6 Project Objectives
- PD 7 Issues
- PD 8 Consultant Services

Description of Services

- PA 1 Project Administration

Required Services

- RS 1 Analysis of Project Requirements
- RS 2 Design Concept
- RS 3 Design Development
- RS 4 Construction Documents
- RS 5 Tender Call, Bid Evaluation & Construction Contract Award
- RS 6 Construction and Contract Administration
- RS 7 Commissioning the Facility
- RS 8 Risk Management

Additional Services

- AS 1 Functional Programming
 - AS 2 Resident Site Services During Construction
-

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This Project Brief is divided into two sections:

- **Description of Project**
- **Description of Services**
 - Project Administration
 - Required Services
 - Additional Services

For standards relating to the service provisions herein please refer to the document "Doing Business with A&ES". The standards in "Doing Business with A&ES" must be adhered to in conjunction with this scope of services.

DESCRIPTION OF PROJECT

PD 1 PROJECT INFORMATION

Public Works and Government Services Canada (PWGSC) intends to retain a firm of civil/structural bridge engineers with multi-disciplinary engineering capability for the provision of the services required for this project.

- 1.1 PWGSC Project Title:** Relacement of the St. Peter's Canal Swing Bridge
- 1.2 Location of the Project:** St. Peter's Canal National Historic Site, Cape Breton, Nova Scotia
- 1.3 PWGSC Project Number:** R.069956.001
- 1.4 Client / User:** Parks Canada Agency (PCA)
- 1.5 PWGSC Project Manager:** Terry Walsh

PD 2 PROJECT IDENTIFICATION

2.1 Description

The services of a bridge engineering firm will be required to undertake the full planning; site inspection; conceptual design and design development; preparation of construction documents; technical assistance during tender and post tender period; construction and contract administration services; resident engineering services during the construction and warranty period; inspection and commissioning services; and post-construction services for the replacement of the St. Peter's Canal Swing Bridge.

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The successful engineering firm will provide a full consulting team including the required expertise in moveable (swing) bridges: structural engineering, mechanical engineering, electrical engineering, transportation engineering, hydraulics specialist, controls specialist, cost specialist, legal and topographical surveying (including Canada Land surveying certifications), and geotechnical.

The User Department, referred to throughout the Project Brief, is Parks Canada Agency (PCA).

The St. Peter's Canal Bridge is located 20 meters east of Deney's Street on Highway 4 in St. Peter's, Nova Scotia. The spans lengths are 24.4m and 15.5m for the east span (over canal) and the west span respectively. The width of the bridge from the center to center of the trusses is approximately 5.8m. The bridge accommodates a single traffic lane and a sidewalk on the south side.

The bridge is a single lane steel through truss swing bridge with an open steel grating deck, except at the end panel of the counterweight span, where a concrete slab was installed. The structural steel floor system consisted of deck grating support beams overlying longitudinal stringers supported on transverse floor beams. The bridge was constructed circa 1936 and rehabilitated in 1982, 1991 and 1997/1998. The 1982

rehabilitation included the installation of new decking and steel beam guide rails on the bridge. The decking consisted of concrete slab at the counterweight span and open steel grating at the remaining sections. In 1991, the structural steel was cleaned and coated.

A sidewalk was added to the south side of the bridge. Construction year of the sidewalk is unknown as there are no known rehabilitation drawings. At the time when the new sidewalk was added, concrete counterweights were added to the bottom chord of the north truss to provide transverse balance to the new sidewalk.

The most recent bridge inspection work was completed by McCormick Rankin Corporation (MRC) in 2009 as a follow up to their inspection recommendation in 2007 that a follow up inspection be completed. The 2009 work included structural, mechanical and electrical disciplines. The MRC reports (2007 and 2009) are available for review by Proponents.

2.2 Cost

The construction budget is not finalized at the present time. It will depend on a number of factors which are yet to be determined. Specifically, it will vary depending on whether a separate temporary bridge structure is required for a detour or if the existing structure will be used during construction and the new bridge built in a different location than the existing. It is expected that these issues will be fully analyzed during conceptual design, and decisions based on recommendations by the selected Consultant. Construction costs would then be finalized based on the options selected.

2.3 Schedule

The project will be completed in two phases: Phase I) Inspection / Conceptual Design, and Phase II) Design, Tender Development and Construction Administration

Project completion date is estimated for May 15, 2017.

Phase I) Inspection / Conceptual Design (RS1 and RS2) completion date: January 31 2015

Phase 2) Design and Tender Development (RS3 and RS4) completion date: January 31 2016

PD 3 PROJECT BACKGROUND

The project background information has been included in other sections of this document.

PD 4 EXISTING DOCUMENTATION

4.1 Existing Documentation - available for all proponents

1. Highway Bridge Evaluations for Parks Canada in Atlantic Provinces
St. Peter's Canal Historic Site
Bridge Evaluation Report by McCormick Rankin Corporation (Volume 1 and 2)
February 2007
2. Electrical, Mechanical and Structural Steel Inspection of St. Peter's Canal Bridge
By McCormick Rankin Corporation

January 2010

PD 5 PROGRAM

This Section is Not Applicable

PD 6 PROJECT OBJECTIVES

6.1 Quality

6.1.1 Design Principles - General

1. The Department expects the Consultant to maintain a high standard of bridge design, based upon recognized contemporary design principles. All design elements, planning, engineering and commissioning must be fully coordinated, and consistent in adherence to good design principles.
2. The project is to be implemented in an environmentally responsible manner.
3. Quality of materials and construction methods shall be commensurate with the type of bridge and the budget. Avoid experimental materials. Take into account the total life-cycle costs and activities for maintenance and operation of the bridge.
4. The structure shall be of high quality and high performance by ensuring innovative concept development, design and construction while respecting budget and project limitations.
5. Achieve:
 - a. 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 to extend the overall service life of the bridge.
 - b. Aesthetically pleasing and harmonious with its environment.
 - c. Minimize long-term maintenance costs through provision of suitable corrosion prevention and durability features.
 - d. Design requirements shall be consistent with the latest Canadian Highway Bridge Design Code (CHBDC) and standards and practices, and shall incorporate the current state of knowledge in the industry.
 - e. Ease of implementation taking into consideration site and project time restraints.

6.1.2 Design Codes, Standards and Regulations

1. The standards, codes and specifications to be used for the design and construction of the bridge shall be the latest edition of the following (including all amendments, supplements and revisions thereto):
 - a. CAN/CSA-S6 Canadian Highway Bridge Design Code
 - b. Federal and Provincial Environmental Regulations
 - c. AASHTO Standard Specifications for Highway Bridges and Interim Specifications
 - d. AASHTO LRDF Movable Highway Bridge Design Specifications
 - e. American Iron and Steel Institute (AISI) Handbook of Steel Drainage & Highway Construction Products
 - f. National Building Code of Canada
 - g. Transport Canada - Navigable Waters Protection Act
 - h. Canada and Provincial Occupational Health and Safety Regulations
 - i. Fire Commissioner of Canada Standards
 - j. Canada Labour Code (including latest revisions of all regulations)

- k. Provincial and Municipal Traffic Acts and Regulations
2. The CAN/CSA-S6 Canadian Highway Bridge Design Code is the primary code that will be used for design with appropriate live load levels.
3. 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 must provide documented evidence of suitability satisfactory to the Project Manager.

6.2 Sustainable Development

1. The Canadian Federal Government has begun a series of initiatives to ensure that sustainable development principles are built into the policy of all federal organizations. Public Works and Government Services Canada (PWGSC) like all federal departments is required to have a Sustainable Development Strategy (SDS). Real Property Services Branch of PWGSC has developed their Strategy Plan, that sets out principles, goals and actions for integrating sustainable development principles into its policies and operations.
2. Sustainable Development is defined in broad terms as a strategy that routinely and consistently includes the consideration of the environmental, economic and societal impact of every decision made for the project. The general areas of focus and in accordance with ASHRAE 90.1 and C2000 standards include:
 - a. Energy efficiency and conservation,
 - b. Greenhouse gas emissions reduction,
 - c. Water management and conservation,
 - d. Pollution prevention,
 - e. Product selection and resource conservation,
 - f. Site conservation (protection and preservation of valued natural site features),
 - g. Environmentally friendly maintenance procedures and products.

6.3 Waste Management

A solid waste management program must be implemented for all construction phases. The Construction, Renovation, and Demolition (CRD) Non-hazardous Solid Waste Management Protocol to which Real Property Services (RPS) is bound, provides directions on the undertaking of non-hazardous solid waste management actions for CRD projects. The protocol is designed to meet the requirements of federal and provincial policies and the objectives of the RPS Sustainable Development Strategy (SDS) as these relate to non-hazardous solid waste generated in CRD projects.

6.4 Code Compliance

Codes, regulations, by laws and decisions of “authorities having jurisdiction” will be observed. In cases of overlap, the most stringent will apply. The Consultant shall identify other jurisdictions appropriate to the project.

6.5 Risk Management

A risk management strategy is crucial for PWGSC Project Management and integrates project planning into procurement planning. All the stakeholders of a project will be an integral part of the risk management strategy, culminating in an integrated product team. Specific services required for project delivery are outlined in Required Services.

6.6 Health and Safety

Consultant Team Health and Safety Plan

- .1 Prior to commencement of Work, the Consultant shall develop a written Health and Safety Plan specific to the Work. The Consultant shall implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: prior to entering the Work Site confirm escape routes, marshalling areas, and location of fire fighting equipment.
 - .3 Emergency Contacts: name and telephone number of officials from:
 - .1 Departmental Representative.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .4 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name of PWGSC and Facility Management contacts.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to subconsultants, including emergency and evacuation measures.
 - .2 List of critical work activities to be communicated with Facility Manager which have a risk of endangering health and safety of Facility users.
- .5 Address all activities of the Work including those of subconsultants.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever a new subconsultant arrives at Work Site.
- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

Construction Period Health and Safety

- .1 Public Works and Government Services Canada (PWGSC), recognizes the responsibility to ensure the health and safety of 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.
- .2 In keeping with the responsibility and in order to enhance health and safety protection for all individuals on federal construction sites, PWGSC will 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.

- .3 The construction Contractor shall be responsible for health and safety on the construction site throughout the period of construction

PD 7 ISSUES

7.1 Major Cost Issues

Cost Issue #1: Project construction budget cannot be exceeded.

Strategy to control cost: Utilize effective cost estimating by using professional cost estimators. Submit class C and class B cost estimates in elemental cost analysis format. Class A cost estimate shall be submitted in trade cost breakdown format. Cost estimates shall have a summary plus full back up showing items of work, quantities, unit prices, and amounts.

Effective cost estimating and cost control is of prime importance and shall be provided by professional quantity surveyors. The class C and Class B cost estimates shall be submitted in elemental cost analysis format. The standard of acceptance for this format is the current issue of the elemental cost analysis format issued by the Canadian Institute of Quantity Surveyors.

The class A cost estimate shall be submitted in trade cost breakdown format. Cost estimates shall have a summary plus full back-up showing items of work, quantities, unit prices and amounts. A separate estimate broken down into a format suitable for use in the tender documents and consistent with the measurement/payment terms of the contract shall also be prepared as a design deliverable

7.2 Major Time Issues

Time Issue #1: Final design and construction documents must be completed by January 31, 2016.

Strategy to control time: Two phase approach being used. Phase I culminates in conceptual design. Phase II includes final design and construction contract administration. A payment schedule based on major deliverables will be implemented during the design development period.

Time Issue #2: The canal navigation period is from May to October and the waterway must remain accessible for marine traffic throughout this period. Existing bridge removal, or temporary fixed bridge installations can not be completed during this period. New bridge construction must be completed before navigation season opens in May 2017.

Strategy to control time: Implement innovative design and construction methodology, techniques, and materials. Accelerate work on-site by means of pre-fabricated superstructure off-site and assembly on-site.

7.3 Project Constraints

1. Limited Construction Period - The project must be completed by May 15, 2017. The St. Peter's Canal navigation season ends in October 2016 and opens in May 2017.

2. Construction Schedule - On-time project delivery is a high priority to the success of this project. An extension of the construction period longer than eight months is expected to have significant negative socio-economic and political impact to St. Peter's residents and surrounding communities. Effective scheduling is highly important and must be given careful consideration.

3. Road Traffic Detour - The closure of this municipal/county road poses significant negative impact to local residents and passing commuters. All interruptions to traffic require the completion of a traffic control plan acceptable to the local municipalities. Any road closure and detour must be coordinated with the Nova Scotia Department of Transportation and Parks Canada, and approved by the Departmental Representative. Short duration road closures (20-30 minutes max) will only be permitted between the hours of 10pm and 5am and must be pre-approved. A minimum of 2 weeks notice is required in advance of any planned road closure. Traffic Control Plans shall meet Nova Scotia Department of Transportation standards and shall include for appropriately trained and provincially certified Traffic Control Personnel where required.

4. Swing Bridge Road Closure - The duration of any scheduled road closure to vehicular traffic across the St. Peter's Swing bridge must be kept to a minimum during the entire construction period.

5. Transport Canada Permit - The project will require a permit under the Navigational Waters Protection Act from Transport Canada (TC). The Consultant is responsible to complete the application process by contacting TC, providing project information, submitting required design documents and plans, and coordinating any other activities necessary to obtain the approval(s).

6. Adjacent Property Lots - There may be limited and/or restricted access to adjacent lands not owned by Parks Canada in the immediate vicinity to the work site. The Consultant will be required to investigate, coordinate, or aid in the negotiations to enter into an agreement for temporary use or lease of these lands.

7. Parks Canada Land - Parks Canada owns the land in which the swing bridge is located in addition to areas alongside of the St. Peter's Canal. However, construction space may be limited for material staging, bridge structure removal and assembly.

8. Coordination with local stakeholders - The new bridge design will require meeting with local stakeholders to verify any impact of the project on utilities and services in the area of the project and on adjacent property, and to coordinate any construction activities. It is the intention to have one (1) open house to the general public in St. Peter's and at least one (1) formal consultation with First Nations fisheries users that will be affected in the off season.

PD 8 CONSULTANT SERVICES

8.1 Required Services

1. The Prime Consultant shall be responsible to co-ordinate and direct all Consultant Team activities.
2. The Consultant Team shall be comprised of qualified professional and technical expertise with extensive relevant experience, and shall be capable of providing the services identified in the Required Services (RS) section of this Project Brief.

3. The following Required Services (RS) are the overall Consultant Services required to deliver this project:

PHASE I - INSPECTION / CONCEPT DESIGN

RS 1 - Analysis of Project Requirements

RS 2 - Design Concept including development of an early Class C estimate

PHASE II - DESIGN , TENDER DEVELOPMENT AND CONTRACT ADMINISTRATION

RS 3 - Design Development

RS 4 - Construction Documents, Pre-Tender Construction Cost Estimate and

Project Schedule The Class C estimate will need to be formally validated at the 66% submission stage

RS 5 - Tender Call, Bid Evaluation and Construction Contract Award

RS 6 - Construction and Contract Administration

RS 7 - Commissionin the Facility

RS 8 - Risk Management

AS 1 - Estimating and Cost Planning

AS 2 - Resident Site Services during Construction

Despite any other condition of the Contract, the Consultant is only authorized to perform the Work required to complete Phase I of the Contract. Upon completion of the phase, the Work will be reviewed before the Consultant is authorized to commence any Work for Phase II. Depending on the results of the review and evaluation of the Work, Canada will decide at its discretion whether to continue with the Work.

If Canada decides to continue with Phase II, the Contracting Authority will advise the Consultant in writing to commence work on Phase II. The Consultant must promptly comply with the notice.

If Canada decides not to proceed with Phase II, the Contracting Authority will advise the Consultant in writing of the decision and the Contract will be considered completed at no further costs to Canada. In no event will the Consultant be paid for any cost incurred for unauthorized work.

8.2 Project Scope

1. Replacement of the swing bridge superstructure. Parks Canada's preference is to replace the existing bridge with a swing bridge. However, the Consultant is required to investigate other options and recommend the most cost effective option for a replacement structure. PCA would like to have aesthetically pleasing architectural features incorporated into the bridge design as long as these features do not add significantly to the cost of the replacement structure. An open deck system is preferred if it does not add to the cost of the structure. The new structure shall provide the same clearance over the waterway as the existing. The following design features are provided here for guidance of the Consultant in proposal preparation and are subject to change during the design process:

A) Sidewalk on one side only

B) Raised curb required between lanes and sidewalk. A barrier may or may not be required; this will need to be confirmed during design.

C) Two traveled lanes (each 3.5m wide); two paved shoulders (each 1.5m wide) and a 1.5m wide sidewalk. NOTE: The requirement for a 2-lane bridge is based on cost sharing the cost of the bridge with the Province of Nova Scotia. However, the Province requires that the additional cost of providing a 2-lane structure instead of a single lane structure be documented for their funding purposes.

Therefore, the Consultant is required to provide estimates for both a single lane and a 2-lane structure. These costs are to be included in the early Class "C" estimate submitted at the end of RS2 - Concept Design.

- D) No separate bicycle lane is required, but this may be incorporated as part of paved shoulder.
- E) Lane widths at the bridge approaches shall be designed to the Provincial standard - Category D Minor Arterial, and will need to be designed based on best fit with adjacent lands and economical right of way acquisition. The horizontal and vertical alignment of the bridge and its approaches shall satisfy the Nova Scotia Department of Transportation Highway Design Guidelines for a 60 km/hr design speed (posted speed is 50 km/hr) and should achieve all sight distance requirements recommended in TAC. Superelevation of the roadway approaches (if necessary) shall also be designed as per TAC based on the 60 km/hr design speed.
- F) Traffic signals at the bridge approaches shall conform to the Provincial standard.
- G) Detours and associated traffic control design is part of the scope of this project. Details of this will depend on whether the new bridge will be at an alternate location along the canal, thereby allowing the existing bridge to continue functioning during construction. The final decision regarding where the new bridge will be located will be based on review of alternatives and consultation with Parks Canada and the Provincial Department of Transportation. In the event that the new bridge will be in the same location as the existing, a temporary bridge structure will be required. For the purposes of this proposal, Consultants shall include the cost of designing a temporary bridge structure complete with roadway detour and traffic management plan. The temporary bridge would be a one (1) lane bridge approximately 4.3 metres wide with paved approaches and traffic control lights. The cost of this design is to be shown separately in the proposal where indicated on the Bid Form. It is considered to be Optional Pricing, meaning that PWGSC is under no obligation to pay for this work if the ultimate location and design of the permanent bridge does not require that a temporary bridge be designed.
- H) The Nova Scotia Department of Transportation has the following design requirements which shall be incorporated into the design of this bridge:
 - i) All reinforcing steel shall be galvanized. GFRP options shall be considered for the deck slab (if not open grating) for the curbs, barriers and approach slabs.
 - ii) Concrete for the entire structure shall have a minimum 28 day compressive strength of 45 Mpa
 - iii) Bridge superstructure drawings shall specify the maximum moment and shear resistance of the superstructure at Ultimate Limit States and Servicability Limit States.
 - iv) Structure shall be designed to minimize joints in the deck.
 - v) Depending on the measurement and payment method selected for tendering the works, the Consultant may be required to complete a detailed bar list for the purpose of estimating an accurate quantity of reinforcing steel.

2. Replacement of entire span drive and end lift hydraulic system, including center pintle bearing and bearing assembly, hydraulic pump, hydraulic fluid reservoir, hydraulic fluid distribution

system, and hydraulic system controls. All hydraulic fluids shall be environmentally friendly, similar to those currently being used on this bridge.

3. Replacement of entire bridge electrical system and controls, including the traffic control light system, bridge power distribution, bridge span control system and console. The electrical demarcation point will be at the NSPI pole.
4. Replace the swing bridge concrete abutments, center pier, and canal walls directly below bridge span. (Note that the intention is to address issues with the canal walls only within the limits of the new and temporary structures.)
5. Replacement of existing approach guardrails and barriers. Align swing bridge lane width to match road width.
6. Review and replacement of existing transportation and safety signage related to swing bridge.

8.3 Structural / Bridge Engineering Work

1. Review site conditions.
2. Review existing drawings and reports, with respect to major code requirements affecting this project.
3. Coordinate work with local municipalities and agencies having jurisdiction including Transport Canada, Navigable Water Protection Act (NWPA) application, etc. Prepare all supporting documentation as required and apply for all applicable permits on behalf of Parks Canada, except in cases where it is a requirement that Parks Canada submit the permit application. In those cases, the Consultant shall prepare all supporting documentation to allow Parks Canada to apply for the regulatory permits required for the work.
4. Review the structural design of the superstructure, deck and floor system for the purpose of understanding the current bridge operation and identifying any issues that may impact the new bridge design.
5. Conceptualize bridge design options to replace the existing swing bridge. Analyze the options in terms of cost, time for construction, ease of construction, ease of maintenance, aesthetics and environmental impacts.
6. Provide environmental impact assessment during design and required monitoring during construction.
7. Obtain geotechnical services and data required to determine all geotechnical design parameters. Consultant is responsible to identify the extent of geotechnical investigation required in order to be able to complete the design and construction of the required structure(s) - for both the new bridge and any temporary bridge structure that may be required. The intent is that the Consultant take full responsibility for the collection and analysis of geotechnical information and for geotechnical design recommendations for the work.
8. Provide conceptual design report.
9. Conduct preliminary and final design and construction administrative services of the replacement of the bridge structure.
10. Submit two hard copies and one electronic copy of design notes and calculations to PWGSC for review purposes.
11. Prepare construction contract documents.
12. Assist PWGSC in responding to inquiries within one (1) working day during the tender period.
13. Complete work, meeting or exceeding most stringent federal or provincial design codes and standards.
14. Provide support during warranty period.
15. Develop an inspection and commissioning program.

8.4 Civil Engineering Work - Transportation

1. Traffic control plan in accordance with TAC and the Nova Scotia Department of Transportation to ensure the safe detour of vehicles away from the construction area and to incorporate in the plans and specifications. Traffic Control Plans shall meet Nova Scotia Department of Transportation standards and shall include for appropriately trained and provincially certified Traffic Control Personnel where required.
2. Evaluate and recommend any work required on the approaches to the swing bridge.
3. Design of transition area between approach barriers (guardrails and bridge barriers).
4. Provide full construction engineering services including quality assurance during construction
5. Upgrade approach signage and structures to meet traffic requirements
6. Identify land acquisition requirements on both approaches to the new bridge. The Consultant will be required to provide legal boundary surveys that identify the lands that will need to be purchased for bridge approach work. NOTE: the Surveyor needs to have a Canada Lands certification in order to survey lands that will need to be purchased.

8.5 Materials and Testing Engineering Work

1. Provide full quality assurance testing and analysis services
2. Provide non-resident construction support
3. Provide resident engineering construction services
4. Provide support during warranty period

8.6 Mechanical Engineering

1. Develop, evaluate, recommend, and design modern bridge mechanisms and hydraulic systems.
2. All mechanical systems to be in accordance with the CHBDC.
3. Develop an inspection and commissioning program.

8.7 Electrical Engineering

1. Develop, evaluate and recommend the design and upgrades to the existing electrical systems, including bridge electrical system and control, traffic control system, bridge power distribution, etc. Parks Canada's preference is to have the control house located off the bridge structure.
2. All electrical systems to be in accordance with the CHBDC and the Canadian Electrical Code.
3. Develop an inspection and commissioning program.
4. Parks Canada does not require any additional lighting; however, lighting shall meet requirements of the Provincial Department of Transportation and Infrastructure Renewal. If new lighting is required, the preference is to provide LED lighting.
5. If required by the design, the electrical scope shall include design of an upgraded electrical service from Nova Scotia Power to the site.

8.8 Environmental

1. The Consultant will be carry out all studies and provide all support and input material suitable for Parks Canada to prepare the required CEAA screening report.
2. Consultant is to include the mitigation measures identified in the Environmental Assessment Screening Report (EA), if required, in the design, and tender package documents. Consultant may add other environmental issues and concerns based on their expertise. If required, the EA will be given to the consultant during the design development stage.

8.9 Geotechnical

1. Review site conditions.
2. Review existing drawings and reports, with respect to geotechnical background information.
3. Visit the site to familiarize with all conditions that may impact the geotechnical evaluation for new design.
4. Review and analyze the geotechnical characteristics that may affect the design and operation of a replacement bridge structure.
5. Design and implement a geotechnical investigation that is appropriate in scope to provide the information required for the design of all required structure (including any required for a temporary bridge installation if one is required). The intent is that the Consultant take full responsibility for the collection and analysis of geotechnical information and for geotechnical design recommendations for the work.
6. Conduct additional geotechnical investigations, if/as required, during the development of the conceptual and final designs.

8.10 Coordination with the Nova Scotia Department of Transportation and Infrastructure Renewal

1. This design shall be coordinated with the Nova Scotia Department of Transportation and Infrastructure Renewal. This includes involving them in the major project decisions, getting their review, comments and sign-off on the design deliverables, and keeping track of costs in a manner that will respect their need to track cost sharing expenditures. PWGSC will coordinate the review/comment/sign-off activity of the Province.

8.11 Public Involvement

1. It is the intention to have one (1) open house to the general public in St. Peter's and at least one (1) formal consultation with First Nations fisheries users that will be affected in the off season. Parks Canada will coordinate these open-houses/consultations. It is intended that project meetings will occur in Halifax during the design stages and in St. Peter's during the construction stages.

8.12 Work Not Included

Not included in the Consultant Services are:

1. Coordination with other federal, provincial, or local authorities not listed as having jurisdiction in this project, unless otherwise indicated.

The consultant team for this project must be capable of providing the following services:

1. Administrative
2. Project Management
3. Regulatory Analysis, Planning, Design, and Development
4. Site Analysis, Planning, Design, and Development
5. Sustainable Design
6. Civil/Structural Engineering - Moveable Bridges
7. Mechanical Engineering
8. Electrical Engineering
9. Controls Specialist
10. Environmental
11. Transportation Engineering
12. Geotechnical
13. Hydraulic
14. Materials Testing

15. Waste Management
16. Surveying - legal and topographical. NOTE: the Surveyor needs to have a Canada Lands certification in order to survey lands that will need to be purchased.
17. Cost planning, life cycle costing, estimating and control
18. Risk Management

DESCRIPTION OF SERVICES

PA 1 PROJECT ADMINISTRATION

INTENT

The following administrative requirements apply during all phases of project delivery.

1.1 PWGSC Project Management

The Project Manager assigned to the project is the Departmental Representative .

The Project Manager is the Departmental officer directly concerned with the project and responsible for its progress. The Project Manager is the liaison between the Consultant, Public Works and Government Services Canada and the Client Departments.

Public Works and Government Services Canada administers the project and exercises continuing control over the Consultant's work during all phases of development. Unless directed otherwise by the Project Manager, the Consultant obtains all Federal requirements and approvals necessary for the work.

1.2 General Project Deliverables

Where deliverables and submissions include summaries, reports, drawings, plans or schedules, six (6) hard copies shall be provided plus one (1) copy shall be provided in electronic format unless otherwise specified.

1.3 Lines of Communication

Unless otherwise arranged with Project Manager, the Consultant shall communicate with the Project Manager only. There shall be no direct official contact between client departments and the Consultant.

During construction tender call, Public Works and Government Services Canada conducts all correspondence with bidders and makes the contract award.

1.4 Media

The consultant shall not respond to requests for project related information or questions from the media. Such inquires are to be directed to the Project Manager.

1.5 Meetings

The Project Manager shall arrange meetings bi-weekly throughout the entire project development period, for all members of project team, including representatives from:

- Client Department(s)
- Public Works and Government Services Canada

- Consultants

The Consultant shall attend the meetings, record the issues and decisions and prepare and distribute minutes within 48 hours of the meeting.

1.6 Project Response Time

It is a requirement of this project that the key personnel of the successful proponent and sub consultant or specialist firms be personally available to attend meetings or respond to inquiries within 2 days, except it shall be 1 day during tendering.

1.7 Submissions, Reviews and Approvals

1.7.1 Federal Government Authority/Jurisdiction

- a. The following are authorities having Federal Government jurisdiction over the project:
- b. Public Works and Government Services Canada, Contracting authority and project delivery.
- c. Parks Canada Agency, Functional design requirements and standards.
- d. Transport Canada, Navigable Waters Protection Act.
- e. Department of Fisheries and Oceans, Fisheries Act.
- f. Environment Canada, Canadian Environmental Assessment Act and Canadian Environmental Protection Act.

1.7.2 Submissions, Reviews, and Approvals

1. The Departmental Representative and User Department will review work in progress on a continuing basis. Formal presentations are required for design and project approvals in accordance with the Project Delivery Phases outlined in Required Services (RS). Below is a list of federal Authorities that will require presentations and submissions for approval:
 - a. PWGSC
 - b. Parks Canada Agency.
2. The frequencies of meetings indicated are estimates. They will be affected by the project phase, issues and requirements for decisions and approvals. The Consultant will be required to attend all other meetings as needed and to make presentations to satisfy Authorities as identified.
3. Project Team
 - a. Purpose of review and approval: Program, design, and technical quality assurance
 - b. Submission format: Reports, drawings and specifications, oral presentation.
 - c. Submission schedule: Submissions are reviewed when completed work has been forwarded to the Departmental Representative,
 - d. Expected turnaround time: 1 week
 - e. Number of submissions: Two (2) plus any follow-up reviews.

Work in progress is to be reviewed by the Project Manager as well as the following:

Design review committee - Parks Canada Agency

- ♦ Submission Format: report, drawings and specifications

- ◆ Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager
- ◆ Expected Turnaround Time: 3 weeks
- ◆ Number of Submissions: until approval has been received

Design review Committee - PWGSC

- ◆ Submission Format: report, drawings and specifications
- ◆ Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager
- ◆ Expected Turnaround Time: 3 weeks
- ◆ Number of Submissions: until approval has been received

Design Review Committee - Nova Scotia Department of Transportation and Infrastructure Renewal

- ◆ Submission Format: report, drawings and specifications
- ◆ Submission Schedule: Submissions are reviewed when completed work has been forwarded to the Project Manager
- ◆ Expected Turnaround Time: 3 weeks
- ◆ Number of Submissions: until approval has been received

NOTE: The above reviews will be conducted more or less concurrently by all three reviewers.

| Chart of Reviews and Approvals | PWGSC | | Parks Canada Agency | | NSTIR | | | |
|---|-------|---|---------------------|---|-------|---|---|---|
| | R | A | R | A | R | A | R | A |
| RS1 Analysis of Project Brief | | | | | | | | |
| Project Scope of Services Report | | x | | x | | x | | |
| Class 'D' Estimate | | x | | x | | x | | |
| RS2 Design Concept | | | | | | | | |
| Design Options | x | | x | | x | | | |
| Recommended Design Option | | x | | x | | x | | |
| Class 'C' Estimate(s) | | x | | x | x | | | |
| RS3 Design Development | | | | | | | | |
| Design Development Documents | | x | x | | x | | | |
| Class 'B' Estimate(s) | | x | | x | x | | | |
| RS4 Construction Documents / Tender Call | | | | | | | | |
| 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(s) | | x | | x | | | | |
| Final Tender Documents | | x | x | | x | | | |

R = Review
A = Approval

1.8 General Project Deliverables

Where deliverables and submissions include summaries, reports, network diagrams, drawings, plans, specifications or finish schedules submit deliverables as follows:

- a. Hard copies: four (4)
- b. Electronic format: one (1) copy. The electronic deliverables shall be provided using Microsoft applications.
- c. Alternatively, the Consultant may submit all work in Adobe Acrobat *.PDF format except for Network Diagrams which must be submitted in their original electronic format
- d. All specifications and drawings will be generated and distributed in the format using layering and file transfer protocols as prescribed in the 'Doing Business with A&E'.
- e. The National Master Specifications shall be used as referred to in "Doing Business with A&E".

1.9 Acceptance of Project Deliverables

1. 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 must obtain Departmental Representative acceptances during each of the project stages.
2. 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.
3. The acceptance does not relieve the Consultant of professional responsibility for the work and compliance with the contract.
4. PWGSC acceptances do not prohibit rejection of work, which is determined to be unsatisfactory at later stages of review. If progressive design development or time / cost / risk updates or technical investigation reveals that earlier acceptances must be withdrawn, the Consultant is responsible for re-designing work and re-submitting for acceptance at the Consultant's cost.
5. Acceptances by the Client / Users and other agencies and levels of government must 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.

1.10 Coordination with Sub-Consultants

1. Throughout all phases of the project, assume responsibility for co-ordinating the work of any Sub-consultants and specialists retained by the Consultant,
2. 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 concept design reviews to closure reports.
3. Co-ordinate input for the Departmental Representative's Risk Management Plan.
4. Co-ordinate the Quality Assurance process ensuring submissions of Sub-consultants are complete and signed-off by the designated senior reviewer.
5. Ensure Sub-consultants provide adequate site inspection services and attend all required meetings.

1.11 Project Response Time

It is a requirement of this project that the key personnel of the Consultant and any sub-consultants or specialist firms are personally available to attend meetings or respond to inquiries within two (2) working days, except it shall be one (1) working day during tendering

1.12 Meetings

1. The Departmental Representative shall arrange meetings generally every two weeks throughout the entire project development and implementation period, for all members of the project team, including representatives from:
 - a. User Department;
 - b. Public Works and Government Services Canada;
 - c. Consultant Team.
2. During design development, tender preparation, and tendering phases:
 - a. Attend the meetings,
 - b. Record the issues and decisions, and
 - c. Prepare and distribute minutes within two (2) working days of the meeting.
 - d. Meetings will be held at PWGSC offices, 1713 Bedford Row, Halifax , Nova Scotia.
3. During construction and implementation:
 - a. Attend the meetings,
 - b. Cooperate and coordinate with the Contractor, record the issues and decisions, and prepare and distribute minutes within two (2) working days of the meeting.
 - c. Kick off meeting will be held on-site. Progress meeting will be conducted via conference calls.

1.12 Health and Safety

1. General Requirements
 - a. Develop written site-specific Plan (SSHSP) based on hazard assessment prior to beginning any field work and continue to implement, maintain, and enforce plan through all phases of the project.
 - b. The SSHSP needs to cover all activity of the Consultant team (consultant personnel, sub-consultant and contractors).
 - c. Any underwater inspection will require a separate Site Specific Health and Safety Plan for the diving work, together with a copy of the Ministry of Labour Dive Notice shall be submitted to the Departmental Representative.
 - d. The Consultant shall incorporate in his SSHSP and abide by any additional constraint or safety requirement imposed by PWGSC and/or Parks for accessing and using Parks Canada property or part there of.
 - e. Coordinate field work with Parks Canada activity on or adjacent to the project site.
 - f. Provide all required Personal Protective Equipment, equipment and material as required to meet the intent of the safety requirement set in the SSHSP or as required by the Provincial Occupational Health and Safety Legislation.
 - g. The Consultant shall be responsible for all of their team on site, and for protection of general public and government employee adjacent to site to the extent that they may be affected by conduct of the field work.
 - h. Assign responsibility and obligation to Competent Person or Supervisor to oversee the field work. At Competent Person's discretion, the field work may be stopped if necessary or advisable for reasons of health or safety. The Departmental Representative may also stop work for health and safety considerations.

- i. During the Construction Phase of the project, incorporate into the SSHSP and abide to any additional constraints or safety requirements imposed by the Contractor.
 - j. Prior to starting field work, attend a Safety Briefing meeting with Parks Canada and PWGSC.
2. Reference Codes and Standards
- a. Occupational Health and Safety Act and associated Regulations of Nova Scotia - latest edition;
 - b. Canada Labour Code
 - c. Nova Scotia Transportation and Infrastructure Renewal Temporary Workplace Traffic Control Manual
 - d. NBC 2010
 - e. Municipal statutes and authorities.
3. Submittals
- a. Submit Site-Specific Health and Safety Plan (SSHSP): Within 7 days after date of Notice to Proceed and prior to commencement of field work. Plan must include:
 - i) Results of site specific safety hazard assessment,
 - ii) Mitigation and precaution measures that will be implemented as a result of safety and health risk of hazard analysis for site tasks and operations,
 - iii) Consultant's Team Safety Communications Plan,
 - iv) Contingency and Emergency Response Plan addressing standard operating procedures specific to the project site to be implemented during emergency situations. Where applicable, coordinate plan with existing Parks Canada Emergency Response requirements and procedures provided by Departmental Representative.
 - b. In addition to the SSHSP the following documents shall also be submitted:
 - i) A copy of the Consultant Team WSIB Clearance Certificates.
 - ii) Occupational training and certification records: the Consultant must provide documentation verifying all members of the consultant team have received the appropriate safety training including equipment operation training as required to perform the specific field work,
 - c. Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request a resubmission with correction of deficiencies, concerns, or requested improvements implemented.
 - d. Departmental Representative's review of Consultant's final SSHSP should not be construed as approval and does not reduce the Consultant's overall responsibility for construction Health and Safety at the project site.

REQUIRED SERVICES

RS 1 ANALYSIS OF PROJECT REQUIREMENTS

1.1 INTENT

The purpose of this stage is to ensure the consultant has reviewed and integrated all the project requirements, identified and evaluated conflicts or problems, provide alternative strategies, presented and received approval on a Project scope, delivery process, schedule and estimate required to deliver a cohesive quality project. This approved deliverable will become the Project Scope of Services and will be utilized throughout the project to guide the delivery.

1.2 GENERAL

1. Attend a project start-up meeting in St. Peter's,
2. Analyze the project requirements including any amendments,
3. Review of existing drawings, reports, manuals, and documents of structures.
4. Review of applicable codes and standards.
5. Prior to undertaking any field work provide the Departmental Representative with:
 - a. A field work plan, including a brief schedule, list of activities and methods,
 - b. Required coordination/assistance from Parks Canada
 - c. Requirements for short duration (20 minutes maximum) road closure for the duration of the inspection work, if required.

FIELD WORK

General

Complete a comprehensive field program to collect the necessary details for the design of a bridge replacement and identify any issues with applicable bridge and road codes and standards. The following description of a field program is not intended to be exhaustive. The Consultant is responsible for conducting all required field work required to provide information for existing bridge demolition and the new bridge design.

Field Work Records

Prepare sketches and field notes to capture the existing bridge features. Focus on specific site conditions that may affect the conceptual design of a replacement structure. Take colour photographs to enhance and supplement the sketches and field notes.

Photograph road approaches. Date and name photos, and identify subject location.

Particular attention should be directed to the abutments and approaches to evaluate current structural conditions and record any specific requirements or limitations to be considered in the concept design process.

Special attention is needed on the height clearance available for the removal of existing structure and replacement with a new bridge.

The field activities need to account for additional investigations needed to confirm access to the site and devising feasible methods to erect and install the new bridge.

Geotechnical

Examine the impact that the current conditions of the abutments and center pintle will have on the development of the new bridge design.

Conduct geotechnical investigations, as required, needed to develop a new bridge design.

Topographical Review

Review the topographical characteristics of the project area and adjacent areas, including the proximity to the canal walls, height clearances, approach terrain slopes, bridge surface height, as required for the design development and construction drawing preparation.

Complete a topographic survey and utility and services locates for the entire site and additional areas as required for temporary bridge installation and approaches, detour, and modifications to the existing bridge approaches if/as required. The work is to also confirm legal property lines within the work area.

Road Geometry

Review current road and bridge alignments. Assess variances and capture any physical constraints due to landscape that may be an issue in the new bridge design. The intent is to verify the impact on existing road alignment and adjacent properties by the new bridge configuration due to increase in width, any relocation of the center pier and abutments, if needed. This road assessment will also need to reference against municipal by-laws, and other local regulations.

Interviews with Parks Canada Personnel

Arrange visit to meet with Parks Canada operational and maintenance team to discuss the overall bridge operation, maintenance challenges, known issues, opportunities for improvement, and any other considerations related to the development of a new bridge. Prepare a questionnaire before the interviews in order for the engineering, maintenance and operation groups have the opportunity to prepare.

Structural Review

Examine the current structural features of the existing swing bridge, location of the center pintle and its proximity to the canal lock, height clearance in order to evaluate potential impacts during the development of the concept and final design.

Road Closure

Any road closure required for geotechnical work must be minimized (limited to maximum 20-30 minutes between the hours of 10 pm and 5 am) and coordinated with local municipalities and pre-approved by Parks Canada and NSTIR. A minimum of 2 weeks advance notice is required for all anticipated closures. PCA will advertise road closure and detour information to the public.

Condition of Canal Walls

Verify the condition of the canal walls directly below the new bridge to identify repair work and any potential structural issues that may impact the development of a new bridge design. Make use of an underwater camera.

If core sampling of the canal walls is required, this will be paid for on an agreed negotiated basis and an amendment will be issued to incorporate this service. Any work inside the canal will be coordinated with PCA in order to dewater the upstream section of the canal.

ENVIRONMENTAL PROTECTION

If applicable, prepare and submit a Plan of Action for environmental protection in all activities associated in during the field and investigation work.

DIVING INSPECTION

The upper canal lock will not be de-watered; therefore, a diving inspection will be required to inspect the condition of the canal walls directly below the swing bridge span. At a minimum, conduct an inspection using an underwater video camera mounted on a pole.

Perform an inspection to assess the current condition of the canal walls in order to identify repair work needed. In addition, the inspection will determine any structural issues that may impact the development of the concept and final designs.

6. Review all other available existing material related to the project including requirements identified in the Project Brief,
7. Identify all additional information that will be needed to deliver the project,
8. Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, cost,
9. Identify and verify all authorities having jurisdiction over the project and codes, regulations and standards that apply,
10. Develop an updated detailed work breakdown structure that incorporates all of the above together with a detailed schedule including allowances for reviews and approvals for each stage of the project life cycle.

1.3 DELIVERABLES:

1. Prepare and submit an Analysis Report for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance.
2. The Analysis Report will consolidate the Scope and Activities identified above and will be utilized as a high level guide for the project development. The report will require supplements and modifications to reflect changes in project parameters as may be identified and accepted throughout the project life cycle.
3. The structure used for the Analysis Report shall include, but is not limited to, the following:
 - a) Executive Summary
 - b) Administrative
 1. 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.
 2. Summaries of project start-up meetings, workshops,
 3. Quality management process for the consultant team.
 - c) Regulatory Analysis
 1. Preliminary summary of regulatory and statutory requirements,
 2. Preliminary summary of authorities having jurisdiction,
 3. Preliminary summary of codes, regulations, and standards.
 - d) Program Analysis
 1. Functional program
 2. User Department reports, studies.
 - e) Site Analysis (Review of past reports)
 1. Site features and restrictions (i.e. landscape features, site services and utilities, site amenities, topographical features, climatic influences),

2. Preliminary review of subsurface, geotechnical requirements/analysis of soils,
 3. Environmental features including sustainable design opportunities.
- f) Bridge Analysis (Preliminary design consideration)
1. Substructure, including abutments, center pier,
 2. Superstructure,
 3. Barriers requirements,
 4. Mechanical and electrical component requirements,
 5. Special construction and demolition, including hazardous materials abatement,
 6. Sustainable design opportunities, strategies, preliminary budgets (i.e. energy, water, waste).
- g) Project / Work Planning Review
- Review and establish potential issues (restrictions/constraints) with the project that will need to be addressed in order to achieve the project objectives, such as:
1. Impact of bridge reconfiguration on adjacent roadways and properties,
 2. PCA owned land and Contractor's requirements for construction and staging areas,
 3. Continued access to adjacent property(ies) and impact on pedestrian traffic due to construction activities,
 4. Temporary pedestrian crossing,
 5. Road closure and traffic detour.
- h) Budget, Schedule, and Risk Analysis
1. Class 'D' estimate,
 2. Detailed work breakdown structure complete with level four sub-tasks,
 3. Analysis of risk implications and preliminary mitigation strategies, and
 4. Budget, Schedule, and Risk Analysis section of the pre-design report.

RS 2 DESIGN CONCEPT

2.1 INTENT

1. To explore design options and analyze them against design requirements and program objectives previously identified. Out of this process, one option will be recommended to proceed to Design Development.
2. The Design Concepts development needs to be sufficiently detailed to illustrate and communicate the project characteristics, challenges on the delivery of the project and how these challenges are to be handled in order to meet the project objectives.
3. Investigate both scenarios as follows;
 1. the use of a temporary bridge in a different location during construction and replacing the existing bridge in the same location, and
 2. the use of the existing bridge during construction and construction of the new bridge in a different adjacent location.

2.2 GENERAL

1. A minimum of two concept design options are to be considered, and both one lane and two lane options are to be considered and costed for each concept:
2. Both concept designs shall:
 - a. Meet all requirements of the CHBDC for the foundations, superstructure, deck system(s), barrier system, mechanical and electrical systems and components.
 - b. Provide a clear travel width for the new bridge.
 - c. Use modern design methods and materials taking into consideration durability and longevity of the structure and systems.
 - d. Have a solid lightweight vehicular deck for their entire length.
 - e. Maintain the existing clearance between the underside of the superstructure and the water level.
 - f. Have a bridge control system to be a modern commercial Programmable Logic Controller (PLC). A single control point for bridge operation interconnected with traffic lights and gates system. Independent by-pass systems for each control component and option for manual operation override.
 - g. Replace traffic light and traffic gate systems with commercially available components/systems.
 - h. Take into consideration maintenance, repairs and ensure that allowances are made for:
 - i. Access to underside of bridge superstructure for maintenance and repairs;
 - ii. Jacking of superstructure for replacement or adjustments of components;
 - iii. Adjustments, calibration of mechanical and electrical components;
 - iv. Winterizing of the superstructure and mechanical systems; and
 - v. Balancing of superstructure.
3. Concept designs need to take into account construction approaches/methodology together with the Contractor's limited site access, limited available land for construction or staging area and continued access to the adjacent properties. Furthermore, the concept designs also need to consider construction approaches/methodology that will minimize the construction and road closure period.
4. Investigate both scenarios as follows;

1. the use of a temporary bridge in a different location during construction and replacing the existing bridge in the same location, and
2. the use of the existing bridge during construction and construction of the new bridge in a different adjacent location.
5. Develop a concept design for a temporary bridge crossing during the construction period.

2.3 SCOPE AND ACTIVITIES

1. Review, validate and update the details of the project requirements.
2. Prepare Design Concepts for the new bridge:
 - a. Develop initial concept designs of superstructure meeting criteria mentioned above;
 - b. Fully develop the concept design for the selected option.
3. Analyze Design Concepts with regard to the project goals including cost and schedule.
4. Analyze Project and Design Concepts with regard to:
 - a. Site construction space restrictions:
 - i. Limited land owned by PCA for access and use by the Contractor;
 - ii. Continued access to adjacent properties (during and after completion of the work);
 - b. Impact of project on adjacent properties, adjacent structures and road right-of-way;
 - c. Construction approach and methodology in light of the site and project time constraints.
 - d. Proposed detour route. Ensure that proposed route is available (no scheduled major construction activity during the planned detour period), and that any restriction on the regional roads and bridge are identified.
 - e. Potential sustainable design opportunities.
5. The preparation of the mechanical and electrical component will require coordination and input from the maintenance and operation personnel. The Consultant to coordinate consultation with staff through the Departmental Representative.
6. Prepare Design Concept for a temporary bridge crossing during bridge closure.
 - a. Evaluate the site to locate the temporary crossing in order to minimize interference with construction activities. The evaluation needs to consider pathways (existing or new) to access the proposed temporary crossing from the adjacent municipal street.
 - b. If access to the temporary crossing needs cross the construction site, means to ensure safety needs to be considered.
7. Coordinate design concept with local municipalities to ensure their concerns /input are considered.
8. Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, project restrictions/constraints, schedule, and cost. The accuracy of the cost estimates at this stage needs to be an early Class C estimate since this estimate will be used to establish cost sharing by the Nova Scotia Department of Transportation. **NOTE: Class C estimates must be prepared for both one lane and two lane options.**
9. Advise Departmental Representative and User Department of any issues with meeting the code and regulatory requirements.
10. Recommend one option for further development with all supporting background and technical justifications

2.4 DETAILS

1. The Consultant team will design a new bridge and perform cost analysis; analytical data and calculations; analysis against project requirements; budget report and confirmation of a design direction for preparation of a final design concept. The accuracy of the cost estimates at this stage needs to be an early Class C estimate since this estimate will be used to establish cost sharing by the Nova Scotia Department of Transportation. **NOTE: Class C estimates must be prepared for both one lane and two lane options.**
2. The new bridge designs will be influenced by the geometry of existing approaches, structure proximity and clearance from the canal, height clearances, location of the center pivot pier, bedrock depth and condition, geotechnical analysis of abutments and canal walls, grading, etc. Assessment of the new bridge configuration on the existing road and adjacent properties will be needed.
3. Consider all project constraints listed in the Project Description section. In particular, the construction time window and the private property and limited access to areas adjacent to the work site.
4. The Design Concept will be in sufficient detail to illustrate and communicate the project characteristics. Provide a detailed review and analysis of the project requirements including all updates and amendments to ensure all requirements are fully integrated into the Design Concept. Out of this process the Design Concept will be accepted and authorization to proceed to Design Development will be based on the accepted Design Concept.

2.5 DELIVERABLES - CONCEPT DESIGN REPORTS

1. General
 - a. Prepare and submit a Concept Design Report DRAFT at 99% completion for review and approval by the Departmental Representative and the User Department. Revise as required by the Departmental Representative.
 - b. Prepare and submit a final report at 100% completion for review and approval by the Departmental Representative.
 - c. Submit two (2) hard copies and one (1) electronic copy of the draft report.
Submit four (4) hard copies and one (1) electronic copy of the final report as outlined in the Project Administration section PA 1.5.
2. STAGE I - Preliminary Concept Design
 - a. Prepare conceptual design of the superstructure as defined above. For both options provide:
 - i. Preliminary drawing showing concept options. Concept drawings are to:
 - 1) be sufficiently developed to reflect the character of the proposed superstructure system, extent of work required on center pier, abutments and adjacent impacted areas;
 - 2) demonstrate the type of bridge system being proposed.
3. STAGE II - Concept Design
 - a. For the selected preliminary concept option, complete the bridge conceptual design. Prepare the Conceptual Design Report which will include, but is not limited to, the following sections:
 - i. Statement of design principles for all disciplines.
 - ii. Preliminary drawings for:
 - 1) The bridge superstructure and surrounding areas to be sufficiently developed to reflect:

- a) the character of the proposed superstructure system, including proposed vehicular and pedestrian deck systems, proposed bridge barrier system(s);
 - b) the proposed transition between the new barrier system on the bridge and the existing barrier/guide rail system
 - c) the proposed barrier system along the sidewalk, if one is required;
 - d) the proposed work on adjacent impacted areas;
 - e) the proposed work (if any) on PCA and municipal services and utilities.
- 2) The mechanical and electrical systems:
- a) Prepare conceptual designs for the main mechanical components.
As a minimum provide concept designs for:
 - i) Arrangement of bearing and support system.
 - ii) Hydraulic span drive system.
 - iii) Hydraulic end lift system.
 - iv) Alignment and locking systems.
 - v) Hydraulic control schematic.
 - b) Prepare conceptual designs for the electrical and control systems.
As a minimum provide concept for:
 - i) General power distribution.
 - ii) Proposed sequence of bridge operations.
 - iii) General layout of new control console.
 - iv) Layout of electrical component/equipment.
 - c) Prepare conceptual drawings of the building and utility trenches showing the existing electrical and mechanical equipment and distribution systems to be removed, and the proposed layout of new electrical and mechanical equipment and distribution systems.
- 3) The temporary bridge crossing
- iii. Describe and assess the proposed construction implementation strategies associated with the selected concept design, including such elements as:
- 1) Proposed approach and methodology to be used by the Contractor for the deconstruction of the existing and construction of the new bridge.
 - 2) Contractor site access, and available land and staging areas for Contractor use during construction.
 - 3) Availability of specialized and/or fabrication components.
 - 4) Impact of temporary bridge crossing on the construction activity.
 - 5) Continued access for PCA to the site and to adjacent properties.
 - 6) Detour consideration.
 - 7) Other concerns.
- iv. Review of CHBC and NSTIR requirements, including any requirements that cannot be met due to the nature of the project.
- v. Review of other applicable codes and regulations (local, municipal or provincial) which may impact on the project.
- vi. Identify specific critical design issues that will need to be resolved in the design development, with broad recommendations on possible alternative Solutions.
- vii. Define Commissioning and Inspection requirements.
- viii. Preliminary Sustainable Development Strategies.

- ix. Indicative or Class 'C' Construction Estimates. The accuracy of the cost estimates at this stage needs to be an early Class C estimate since this estimate will be used to establish cost sharing by the Nova Scotia Department of Transportation. **NOTE: Class C estimates must be prepared for both one lane and two lane options.**
- x. Preliminary Risk Assessment Plan,
- xi. Report on any deviations that will affect cost or schedule and recommend corrective measures,
- xii. Detailed schedule covering the entire project life (including design, tender preparation, tendering and construction).

2.6 PRESENTATIONS

The Consultant team shall deliver two presentations to the Departmental Representative and User Department as outlined in the Project Administration section.

The first presentation for the Preliminary Concept Design will describe the different design ideas in order to identify a final concept design. The focus will be on discussing the preliminary concept designs, drawings, and project and technical assessments including, but not limited to, cost, schedule, and structural implications.

A second presentation for the Concept Design will describe in detail the concept design selected as a result of the preliminary concept design stage. The presentation shall cover all concept design criteria, analysis, and implications as described in the above sections.

At the end of the RS2 Concept Design Stage, conduct the required public consultation and consultation with the First Nations fishery.

RS 3 DESIGN DEVELOPMENT

3.1 INTENT

This phase will further develop the design by refining the Concept Design. The Design Development documents consist of drawings and other documents to describe the scope, quality and cost of the project in sufficient detail to facilitate design approval, confirmation of code compliance, detailed planning of construction and project approval. This design will be used as the basis for preparation of construction documents.

3.2 SCOPE AND ACTIVITIES

1. Review, validate and update details of project requirements according to Departmental Representative and User Department input from the Concept Design Report review.
2. If applicable, develop the sustainable design strategy.
3. If any alterations are required, analyze the impact on all project components, and resubmit for approval if required.
4. Expand and clarify the Concept Design intent for each design discipline.
5. Undertake a budget, schedule and risk analysis and identify any conflicts that will need to be addressed with respect to scope, quality, schedule, cost,
6. Coordinate services with Departmental Representative in order to comply with National Waters Protection Act permits and Environmental Assessment screening requirements.
7. Continue to review all applicable statutes, regulations, codes and by-laws in relation to the design of the project.

3.3 DELIVERABLES

1. Setup a meeting with Departmental Representative and Client Department to review the progress of the design development,
2. Provide a list and draft specification sections of all National Master Specification (NMS) sections to be used. Submit outline specifications for all systems and principle components.
3. CADD strategy and layering protocol
4. Update to Risk Assessment Plan,
5. Project Log tracking all approved major decisions including those affecting changes to the project scope, budget, and schedule.
6. Preliminary construction schedule including long-term delivery items,
7. Class 'B' Estimate.

RS 4 CONSTRUCTION DOCUMENTS, PRE-TENDER CONSTRUCTION COST AND PROJECT SCHEDULE

4.1 INTENT

1. The Consultant must obtain written authorization from the Departmental Representative before proceeding with Construction Documents.
2. The objective of the Construction Document phase is to translate the 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. Prepare drawings and specifications setting forth in detail the requirements for the construction and final cost estimate for each tender package for the project.
 - A. 33% and 66% indicates technical 33% and 66% completeness of all working documents, advanced engineering plans, elevations, sections, details, schedules and specifications,
 - b. 99% is the submission of complete Construction Documents ready for tender call,
 - c. Final Submission incorporates all revisions required in the 99% version and is intended to provide PWGSC with complete construction documents for tender call.

4.2 GENERAL

Activities are similar at each tender package; completeness of the project development shall reflect the stage of a submission.

4.3 SCOPE AND ACTIVITIES:

1. Obtain Departmental Representative's approval for Construction Documents submissions (33%, 66%, 99% and final),
2. Confirm format of drawings and specifications,
3. Develop tender package,
4. If applicable, participate in the review of the EA screening report and incorporate, in the tender document any environmental protection and/or mitigation measures or restrictions that have been identified.
5. Participate in obtaining the Navigational Waters Protection Act permits and any other related authorizations required to undertake this project.
6. Submit drawings and specifications at the required stages (33%, 66%, 99%),
7. Provide written response to all review comments and incorporate them into Construction Documents where required,
8. Advise as to the progress of cost estimates and submit updated cost estimates for tender package as the project develops,
9. Further develop the risk analysis plan and identify any that will need to be addressed with respect to scope, quality, schedule and cost.
10. Update the project schedule.
11. Prepare a final Indicative or Class 'A' estimate for tender package,
12. Sign and seal one (1) set of 100% complete construction documents for tender.
13. If requested by the Departmental Representative, submit hard copies and/or electronic copies of design notes and calculations for review and record purposes.

4.4 DELIVERABLES

1. Deliverables shall occur in three stages. Completeness of the project development shall reflect the stage of submission: 50%, 99% or 100%. The consultant team shall prepare and submit deliverables for the first two stages as well as the 100% construction documents (drawings and specifications) for review and approval by the Departmental Representative. Revise as required by the Departmental Representative. Resubmit for acceptance. The construction documents will be updated at each stage and will serve as benchmarks to monitor progress of the project.
2. Deliverables are similar at 50% and 99% stages; completeness of the project development shall reflect the stage of a submission.
3. The National Master Specifications shall be used as referred to in Appendix D, "Doing Business with A&E."
4. 33% and 66% Submissions:
 - a. Setup a meeting with Departmental Representative and Client Department to review the progress of the construction documents.
 - b. Provide 33% and 66% construction drawings and specifications
 - c. Coordinate all disciplines within tender package including any scope changes that may have been approved
 - d. One copy of support data, studies, calculations, required by PWGSC Engineering disciplines for final checking and record.
 - e. Updated Risk Analysis Plan, Cost Plan and Project Schedule. A validated Class "C" estimate is required with the 66% submission.
5. 99% Submissions:
 - a. Provide 99% tender package
 - b. Coordinate all disciplines within tender package including any scope changes that may be required to remain within budget.
 - c. Complete specification and working drawings.
 - d. One copy of support data, studies, calculations, required by PWGSC Engineering disciplines for final checking and record.
 - e. Updated Risk Analysis Plan, Cost Plan and Project Schedule.
 - f. Update Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.
6. Final Submissions. This submission incorporates all revisions required by the review of the 99% submission. Provide the following in the final tender package:
 - a. Coordinate all disciplines including any scope changes that may be required to remain within budget.
 - b. Complete set of originals of the working drawings.
 - c. Complete sets of original specifications
 - d. Class 'A' estimate.
 - e. Updated project schedule.
 - f. Update Project Log tracking all approved major decisions including those affecting changes to project scope, budget and schedule.

4.5 PRESENTATIONS

The consultant team shall deliver presentations for the Construction Documents stage to the Departmental Representative and User Department and as outlined in the Project Administration section.

RS 5 TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD

5.1 INTENT

To obtain and evaluate bids from qualified contractors to construct the project as per the Tender Documents. To award the construction contract according to government regulations, including Federal Rules for Bid Depositories.

5.2 GENERAL

Scope and Activities:

- Attend tenderers briefing meeting(s)
- Prepare addenda based on questions arising in such meetings for issue by the Project Manager
- Provide the Project Manager with all information required by tenderers to fully interpret the Construction Documents. The Project Manager will issue the addenda to all participants.
- Keep full notes of all inquiries during the bidding period and submit same to Project Manager at the end, for PWGSC records.
- Assist in tender evaluation by providing advice on the following:
 1. The completeness of tender documents in all respects.
 2. The technical aspects of the tenders.
 3. The effect of alternatives and qualifications which may have been included in the tender.
 4. The tenderers capability to undertake the full scope of work.
 5. The availability of adequate equipment to carry out the work.
- If PWGSC decides to re-tender the project, provide advice and assistance to the Project Manager
- Revise and amend, at your cost, the construction documents to bring the cost of the work within the limits stipulated
- Examine and report on any cost and schedule impact created by the issue of tender / contract addenda

5.3 DELIVERABLES

- Originals of drawings and specifications
- Electronic copies of drawings and specifications.
- Addenda where needed
- Changes to the documents, if re-tendering is necessary
- Updated cost estimate or schedule

RS 6 CONSTRUCTION AND CONTRACT ADMINISTRATION

6.1 INTENT

To implement the project in compliance with the Contract Documents and to direct and monitor all necessary or requested changes to the scope of work during construction.

6.2 GENERAL

Scope and Activities:

- During the implementation of the project, act on PWGSC's behalf to the extent provided in this document
- Carry out the review of the work at intervals appropriate to determine if the work is in conformity with the Contract Documents
- Keep PWGSC informed of the progress and quality of the work and report any defects or deficiencies in the work observed during the course of the site review
- Ensure compliance with Commissioning Plan, update plan as necessary
- Determine the amounts owing to the Contractor based on the progress of the work and certify payments to the contractor
- Act as interpreter of the requirements of the Contract Documents
- Provide cost advice during construction
- Advise the Project Manager of all potential changes to scope for the duration of the implementation
- Review the Contractor's submittals
- Prepare and justify change orders for issue by the Department Representative
- Indicate any changes or material/equipment substitutions on Record Documents
- During the twelve (12) month warranty period investigate all defects and alleged defects and issue to the instructions Contractor
- Prepare and post Systems Operating Instructions
- Finalize Systems Operations Manual
- Conduct a final warranty review

6.3 DETAILS

Scope and Activities:

6.3.1 Construction Meetings

- Immediately after contract award arrange a briefing meeting with the Contractor and the Departmental Representatives. Prepare minutes of the meeting and distribute copies to all participants and to other persons agreed upon with the Project Manager.
- Call job meetings as frequently as required, commencing with the construction briefing meeting. The meetings should include the job superintendent, Inspector of Construction main sub-subcontractors, affected sub-consultants and Government Services representatives as necessary. Prepare minutes of the meeting and distribute copies to all participants. The Project Manager may invite client Departments to attend any of these meetings.

6.3.2 Project Schedule

- Obtain Project Schedule with detailed commissioning component shown separately, as soon as possible after contract award and ensure proper distribution.
- Monitor the approved construction schedule, take necessary steps to ensure that the schedule is maintained and submit a detailed report to the Department concerning any delays.

- Keep accurate records of causes of delays.
- Make every effort to assist the Contractor to avoid delays.

6.3.3 Time Extensions

- Only the Department may approve any request for Time Extensions. Approval will be issued in writing by the Project Manager.

6.3.4 Cost Breakdown

- Obtain from the Contractor detail cost breakdown on standard PWGSC form and submit to the Department with the first Progress Claim.

6.3.5 Sub-contractor Changes

- The Contractor is required to use the sub-contractors listed on the tender form unless a change is authorized by the Department. Changes are only considered when they involve no increase in cost. Review all requests for changes of sub-contractors, and submit recommendations to the Project Manager.
- When sub-contractors have not been listed on the Tender Form, obtain the list from Contractors not later than 10 working days after date of award.

6.3.6 Labour Requirements

- The Contractor is bound by the Contract to maintain competent and suitable workmen on the project and to comply with the Canada Department of Labour - Labour Conditions. Inform the Department of any labour situations that appear to require corrective action by the Department.
- The Consultant shall ensure that a copy of the Labour Conditions for the Contract is posted in a conspicuous place on site.

6.3.7 Bylaw Compliance

- Ensure that construction complies with applicable bylaws and regulations.
- Matters pertaining to the Department of Labour shall be referred to the Engineer.

6.3.8 Construction Safety

- All construction projects that are occupied by federal employees during construction are subject to the Canada Occupational Safety and Health Act and Regulations as administered by Health and Welfare Canada.
- Fire safety provisions during construction must comply with FCC Standards 301 and 302, administered by the Fire Commissioner Canada.
- In addition to the above, the Contractor must comply with the provincial and municipal safety laws and regulations, and with any instructions issued by the officers of these authorities having jurisdiction relating to construction safety.
- Ensure the Contractor is mandated to provide all required coordination, isolation, protection and reinstatement of the fire protection and suppression systems throughout construction. Notify the Property Manager each time the fire protection and suppression systems are bypassed and advise of estimated reinstatement time. Ensure the Contractor is mandate to provide Watchman Service as defined in FC 301 and by the Fire Commissioner

6.3.9 Site Visits

- Provide non-resident construction inspection services. Ensure compliance with contract documents.

- Provide services of qualified personnel who are fully knowledgeable with technical and administrative requirements of project.
- Establish a written understanding with contractors as to what stages or aspect of the work are to be inspected prior to being covered up.
- Assess quality of work and identify in writing to the Contractor and to the Department all defects and deficiencies observed at time of such inspections.
- Inspect materials and prefabricated assemblies and components at their source or assembly plant, as necessary for the progress of the project.
- Any directions, clarifications or deficiency list shall be issued in writing to PWGSC.

6.3.10 Clarifications

- Provide clarifications on Plans and Specifications or site conditions, as required in order that project not be delayed.

6.3.11 Progress Reports

- Report to the Department regularly on the progress of the work. Submit weekly reports.

6.3.12 Work Measurement

- If work is based on unit prices, measure and record the quantities for verification of monthly progress claims and the Final Certificate of Measurement.
- When Contemplated Change Notice is to be issued based on Unit Prices, keep accurate account of the work. Record dimensions and quantities.

6.3.13 Detail Drawings

- Provide for the Department's information any additional detail drawings as and when required to properly clarify or interpret the contract documents.

6.3.14 Shop Drawings

- On completion of project forward three copies of reviewed shop drawings to the Department. Ensure that shop drawings include the project number and are recorded in sequence.
- Verify the number of copies of shop drawings required. Consider additional copies for Client's departmental review.
- Shop drawings shall be stamped: "Checked and Certified Correct for Construction" by the Contractor and stamped: "reviewed" by the Consultant before return to the Contractor.
- Expedite the processing of Shop Drawings.

6.3.15 Inspection and Testing

- Prior to tender, provide Department with recommended list of tests to be undertaken, including on site and factory testing
- Ensure all testing is detailed within commissioning plan
- When contract is awarded, the Consultant will engage the testing firm on behalf of PWGSC and brief testing firm on required services, distribution of reports, communication lines, etc. PWGSC will reimburse the Consultant for the cost of the testing firm services as a Disbursement on the Contract.
- Review all test reports and take necessary action with Contractor when work fails to comply with contract.
- Immediately notify Project Manager when tests fail to meet project requirements and when corrective work will affect schedule.
- Assist Departmental Representative in evaluating testing firm's invoices for services performed.

6.3.16 Training

- Prior to tender, provide Department with recommended list of training to be undertaken
- Ensure all training is detailed within the commissioning plan

6.3.17 Construction Changes

- The Consultant does not have authority to change the work or the price of the Contract.
- Changes which affect cost or design concept must be approved by the Department.
- Upon Departmental approval obtain quotations from the Contractor in detail. Review prices and forward promptly recommendations to the Department.
- The Departmental will issue Consultant-prepared Change Orders to the Contractor, with copy to Consultant.
- All changes, including those not affecting the cost of the project, will be covered by Change Orders.
- The practice of "trade offs" is not allowed.

6.3.18 Contractor's Progress Claims

- Each month the Contractor submits a progress claim for work and materials as required in the Construction Contract.
- The claims are made by completing the following forms where applicable:
 - Request for Construction Payment
 - Cost Breakdown for Unit and/or combined Price Contract
 - Cost Breakdown for Fixed Price Contract
 - Statutory Declaration Progress Claim
- Review and sign designated forms and promptly forward claims to the Department for processing.
- Submit with each progress claim:
 - Updated schedule of the progress of the work.
 - Photographs of the progress of the work.

6.3.19 Materials On Site

- The Contractor may claim for payment of material on site but not incorporated in work.
- Material must be stored in a secure place designated by the Department.
- Detailed list of materials with supplier's invoice showing price of each item must accompany claim; Consultant shall check and verify the list.
- Items shall be listed separately on the Detail Sheet after the break-down list and total.
- As material is incorporated in the work the cost must be added to the appropriate Detail item and removed from the material list.

6.3.20 Acceptance Board

- Inform the Department when satisfied that the project is substantially completed. The Consultant shall ensure that his representative, his sub-consultant representative, Resident On-Site Reviewer, Contractor and major sub-trades representatives shall form part of the Project Acceptance Board and attend all meetings as organized by the Department.

6.3.21 Interim Inspection

- The Acceptance Board shall inspect the work and list all unacceptable and incomplete work on a designated form. The Board shall accept the project from the Contractor subject to the deficiencies and uncompleted work listed and priced.

6.3.22 Interim Certificates

- Payment requires completion and signing, by the parties concerned, of the following documents:
 1. Interim Certificate of Completion
 2. Cost Breakdown for Fixed Price Contract
 3. Cost Breakdown for Unit or Combined Price Contract
 4. Inspection and Acceptance
 5. Statutory Declaration Interim Certificate of Completion
 6. Workmen's Compensation Board Certificate.
- Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Department for processing.

6.3.23 Building Occupation

- The Department or Client Department may occupy the building after the date of acceptance of the building by the Acceptance Board. The acceptance date is normally that of the Interim Certificate issued to the Contractor. As of the acceptance date, the Contractor may cancel the Contract Insurance, and the Department or Client Department (as the case may be) assumes responsibility for:
 - Security of the work(s).
 - Fuel and utility charges.
 - Proper operation and use of equipment installed in the project.
 - General maintenance and cleaning of the work(s).
 - Maintenance of the site. (Except any landscaping maintenance covered by the contract.)

6.3.24 Operation and Maintenance Data Manual

- Operation and Maintenance Data Manual: [4] sets of each volume produced by Contractor in accordance with project specification and verified for completeness, relevance and format by the Architectural, Mechanical and Electrical Consultants and submitted to PWGSC Project Manager prior to interim acceptance or actual start of operation and instruction period, whichever occurs sooner. The Contractor shall retain one copy of each volume for his record and use during the instruction period.

6.3.25 Instruction of Operating Personnel

- Make arrangements and ensure that Department's operating personnel is properly instructed on the operation of all services and systems using the final manuals as reference.
- Consultant to provide training sessions, as required, on the subject of design intent and systems operations. Utilize Systems operations manual for training sessions.

6.3.26 Keys

- Ensure that all keys and safe combinations are delivered to the Department and/or the Client Department as applicable.

6.3.27 Final Inspection

- Inform the Department when satisfied that all work under the contract has been completed, including the deficiency items. Inspection and Acceptance as a result of the Interim Inspection. The Department reconvenes the Acceptance Board which makes a final inspection of the project. If everything is satisfactory the Board makes final acceptance of the project from the Contractor.

6.3.28 Final Certificate

- The final payment requires completion and signing, by the parties concerned, of the following documents:
 1. Final Certificate of Completion
 2. Cost Breakdown for Fixed Price Contract
 3. Inspection and Acceptance
 4. Statutory Declaration Final Certificate of Completion
 5. Cost Breakdown for Unit and/or Combined Price Contract
 6. Workmen's Compensation Clearance Certificate
 7. Hydro Certificate
- Verify that all items are correctly stated and ensure that completed documents and any supporting documents are furnished to the Department for processing.

6.3.29 Take-over

- The official take-over of the project, or parts of the project, from the Contractor is established by the PWGSC Project Team which includes the Consultant and the Client Department. The date of Interim Certificate of Completion and the Final Certificate of Completion signifies commencement of the 12 month warranty period for work completed on the date of each certificate in accordance with the General Conditions of the Contract.
- Provide Department 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. Verify their completeness and extent of coverage.

6.3.30 As-Built and Record Drawings and Specifications

- Following the take-over, obtain as-built marked-up hard copy from the Contractor:
 - Show significant deviations in construction from the original Contract drawings, including changes shown on Post-Contract Drawings, changes resulting from Change Orders or from On Site Instructions.
- Check and verify all as-built records for completeness and accuracy and submit to PWGSC.
- Produce Record Drawings by incorporating As-Built information into project drawings.
- Submit Record Drawings and Specifications in number and format required by the Consultant Agreement within [8] weeks of final acceptance.
- Provide a complete set of final shop drawings.

6.4 DELIVERABLES:

- Written reports from site visits including persons involved
- Written reports on the progress of the work and the cost of the project at the end of each month
- Additional detail drawings when required to clarify, interpret or supplement the Construction Documents
- Post contract drawings
- Interim or Final certificates
- Debrief of Commissioning Activities
- As built records
- Warranty deficiency list
- Report on Final Warranty Review

RS 7 COMMISSIONING THE FACILITY

As a member of the PWGSC team, the Commissioning Manager represents the Owner's and User's interests, and is responsible for overseeing all commissioning activities during the development, implementation and post construction stages of the project.

Throughout this stage, the Consultant and Consultant's representatives on site will work closely with the Commissioning manager, PWGSC and the Contractor to implement commissioning activities and create useful, well integrated drawings, reports and manuals, in compliance with Contract Documents.

7.1 INTENT

- To define the operational and performance requirements of the Owner and User.
- To ensure that responsibility for meeting these requirements and demonstrating compliance is defined in the design and contract documents
- To ensure that appropriate and start-up and checkout procedures are employed for components, subsystems, including meaningful documentation for and certification of Quality Control reports and techniques under the normal or enhanced basic services and contractual procedures.
- To ensure that the final product meets the specified requirements and the criteria set out in the investment analysis report (I.A.R.).
- To document the operations, maintenance and management requirements, and transferring the completed works to qualified facility operators.
- To minimize the life-cycle operating and maintenance costs.
- To verify that the department's functional requirements are correctly interpreted during the design stage, and that the building systems operate consistently at peak efficiencies, under all normal load conditions, and within the specified energy budget.

7.2 GENERAL

Scope and Activities:

- Provide complete documentation on the operations and maintenance requirements
- Prepare Systems Operations Manual (SOM) Manuals and Preventative Maintenance Support System (PMSS)/MMS documentation.
- Co-ordinate staffing, service contracts, and arranging spare parts and special equipment
- Contents of O & M Manual shall be in accordance with CP.4 operating and maintenance (O & M) Manuals.
- Carry out various checks and tests to determine if the new facilities function in accordance with the contract documents
- Identify contractor and subcontractor commissioning, PV and testing responsibilities.
- Plan the performance verification (PV) activities, develop the installation checklists and PV report forms, and prepare a detailed verification schedule. PV tests will be performed by the contractor. Maintain detailed development reports and review with the contractor for special systems such as EMCS.
- PV inspection forms will be completed for all components, sub-systems, and systems, and a final performance verification report will be submitted to the Commissioning Manager.

- Prepare a training plan for the O&M staff to be trained on the operations of the new facilities. The training plan will recognize both short-term and long term requirements and shall employ both hard copy and audio visual techniques.

7.3 DETAILS

Scope and Activities:

7.3.1 Analysis of Project Requirements and Design Development

O&M (General)

- Submit an O&M report showing how the design will meet O&M requirements including the following subjects:
 1. spatial requirements for O&M staff (office, lockers, kitchen, showers, washrooms, flow of people and supplies, storage for special tools, spare parts, and maintenance materials).
 2. Cleaning (Janitor closets, receptacle for vacuum, equipment supply and storage).
 3. Capacity of the facility to change in response to program changes over it's life expectancy.
 4. Spare equipment, extra material and redundancies needed to operate and maintain this facility over it's life expectancy.
 5. System selection based on life cycle cost analysis considering energy, maintenance and operational cost.
 6. Occupancy during construction.
 7. "Phased" construction program.
 8. Assist the Commissioning Manager in preparation of a preliminary O&M budget. The O&M budget will contain detailed breakdown of various items with the assessment of the systems selection.
 9. Assessment of:
 - i. staffing & skill requirements to operate and maintain the facility.
 - ii. the need for service contracts, i.e.. elevators, water treatment, controls emergency generators, fire alarm, security, etc.
 10. Input into the Building Management Plan information regarding operational management requirements. The report is submitted at the end of stage 1 and is updated at the end of stages 2 respectively. Respond to all PWGSC comments in writing before proceeding to the next stage.
- O&M Manuals and Systems Operations Manual (SOM)
 1. Complete design intent prepare SOM. Submit at the end of the design development stage. Provide review comments and conditions for accepting preliminary O& M Manuals .
- Design Submissions
 1. Ensure all the review comments are addressed to the satisfaction of the Commissioning Manager.

7.3.2 Construction documents & Tender calls

- O&M (General)
 1. In consultation with the Commissioning Manager, continue the assessment which started during the design stage with respect to O&M concerns including staffing, redundancies, spare equipment and extra material, service contracts, preventative maintenance and equipment identification, O&M facilities, the O&M budget. Ensure all review comments provided by the Commissioning Manager are addressed.
 2. Incorporate design and performance intent in the construction documents and identify anticipated performance outputs in PV forms
 3. Identify contractor and subcontractor commissioning, PV and testing responsibilities.

- Systems Operations Manual
 1. Provide all design intent, sequence of operation, etc., for the SOM.
 2. Provide emergency start -up/operations/shut-down procedures.
 3. Provide Single Line Diagrams of all systems.
 4. Provide PMSS/MMS inventory lists and Valve Schedules
 5. Provide Service Contract lists
 6. Provide Shop Drawing lists.

- Commissioning Specification
 1. Use PWGSC disciplinary master specification for commissioning as the basis for the project specifications for commissioning. Complete design information required in the performance verification report forms.
 2. Specify detailed performance verification procedures and output, documents, scheduling and reporting requirements.
 3. Identify and include in specification all tests to be conducted at manufacturer's plants, on site during construction, installation, commissioning on site and during the operation phase.
 4. Develop training package for O&M personnel and include in specification as required.

- "PMSS/MMS" Specification
 1. Use PWGSC Master Specification for the identification of equipment and inventory in conjunction with the PMSS/MMS. Provide PMSS/MMS coding and system nomenclature on tender documents. Coordinate with existing building equipment inventories.

- Submission Requirements
 1. The commissioning plan is submitted at the end of the design phase and is updated and resubmitted at the end of each stage of the working documents. The prime consultant and the commissioning manager work together to update the commissioning plan.
 2. The commissioning specification are submitted at the end of the 66% working drawings stage and are updated and resubmitted at each subsequent stage of the working documents.
 3. The SOM is submitted at the end of the 66% working drawings stage, and is updated and resubmitted during subsequent stages of the working documents.
 4. Respond to all PWGSC comments in writing at each stage.

7.3.3 Construction / Installation

- 3 months before substantial completion, assemble, review and approve all commissioning documentation, including check lists, PV report forms, PV procedures, instruments to be used, and instrument calibration, and incorporate relevant data from reviewed shop drawings and installed component data.
- Assemble all certified tests results and incorporate into the O&M manuals.
- Review the selected test instruments which are to be calibrated less than 3 months prior to substantial completion.
- In consultation with the contractor, select the commissioning test instruments.
- The Prime Consultant shall:
 1. review contractors compliance with the contract documents
 2. witness and certify tests conducted before concealment and start up.
 3. verify that each system is completed, safe to operate and ready for start-up.
 4. ensure that all deficiencies are rectified and acknowledge that the installation of components and systems is ready for the commissioning phase.
- Manuals
 1. Revise the SOM as construction progresses, ensuring that it reflects the installed systems.
 2. Review for acceptance the contractor's O&M Manuals.
 3. Submit all manuals to the Commissioning Manager for review and acceptance. The maintenance manual shall be in accordance with CP-4 standard.
- Training
 1. Co-operate with the Commissioning Manager in making necessary arrangement for site O&M staff familiarization. Prepare training material in accordance with CP-5 standard.

7.3.4 Commissioning phase

- Submit a list of the technical staff required to conduct all performance and verification tests for approval by the commissioning manager prior to beginning testing and verification
- Manuals
 1. Review the "O & M" Manuals to 100% and submit comments to the Commissioning Manager for approval. Manuals to be in accordance with all modifications to the project.
- Spare Parts
 1. Finalize the delivery of all the spare parts requirements through the project and assist Commissioning Manager in the definition of additional parts not listed in the construction documents.
- Performance Verification
 1. Witness that the components, subsystems and systems are tested in accordance with the provisions of the contract documents and ensure all systems meet design intent.
 2. Witness all tests and PV procedures and certify same.
 3. Provide solutions during the PV process with respect to the variances from the design parameters.
 4. In consultation with the Commissioning Manager, instruct the contractor to correct all the deficiencies identified and recorded during the performance verification and adjust or alter the systems to achieve the design parameters. Retest as required.
 5. In consultation with the Commissioning Manager, and Project Manager, recommend take over of the facility subject to outstanding deficiencies deferred tests during the operational phase.
 - 6.

7. Note: Start-Up and TAB are construction activities and do not form part of the Commissioning Phase.

- Coordinate the training of O&M personnel and conduct training sessions .
- Review all PMSS/MMS nomenclature, devices and submissions prepared by the contractor. Ensure on site implementation and tagging of PMSS/MMS.
- Prior to Interim Inspection, debrief the Project Manager and Commissioning Manager on the commissioning process including training; problems; required changes to systems (with costs) which are outside the contractor's responsibility, but which are deemed necessary to meet project requirements; commissioning procedures and other information, experiences and suggestions for future projects. Submit a report to the Commissioning Manager. Repeat this process when 80% occupancy is achieved.

7.3.5 Post-construction (operation)

- Make recommended revisions to documentation to reflect all changes, modifications, revisions and adjustments as finally set upon completion of commissioning.
- Develop an occupant's comments/complaints audit system.
- Witness completion of Performance Verification and review reports.
- Monitor environmental and life safety system checks which must be carried out by the contractor or O&M staff prior to the expiration of warranties.
- Identify and monitor all deficiencies to be rectified by the contractor prior to the expiration of warranties.

7.4 STANDARDS:

Operating & Maintenance (O&M) Manuals

- The contents & organization of the manuals shall be in accordance with CP.4: Operating & Maintenance Manuals.

Training of O&M Personnel

- The requirements and the delivery of the training of O&M Personnel shall be in accordance with CP.5: Training of O&M Personnel.

Performance Verification Procedures

- The extent of performance verification procedures shall be in accordance with PWGSC generic manuals i.e.. MC.5 performance verification report forms & MC.6 performance verification procedures.

PWGSC Preventive Maintenance Support System (PMSS) standards 6.17. To be know in future as Maintenance Management System (MMS).

Consultant to utilize PWGSC "PMSS" or "MMS" standard maintenance package and equipment identification nomenclature.

RS 8 RISK MANAGEMENT

The consultant is to provide support to the Project Manager in identifying risks throughout the project life cycle.

See “Doing Business with A&ES” for Risk Management “Definitions” and “Checklist”.

Risk Management Process:

- Identify risk events based on past experience and using proposed checklist or other available lists;
- Qualify/quantify probability of risk event (Low, Medium, High) and their impact (Low, Medium, High);
- Prioritize risk events (i.e. concentrate efforts on risk events with High probability and Medium to High impact);
- Develop risk response (i.e. evaluate alternatives for mitigation. This is the real added-value of risk management); and,
- Implement risk mitigation.

ADDITIONAL SERVICES

AS 1 ESTIMATING AND COST PLANNING

1.1 Cost Specialist

Delivering this project on time and within budget is a high priority. A fully qualified cost estimating, cost planning and cost control team, referred to herein as the Cost Specialist, with a demonstrated record of successful cost management on large construction projects is required. This Cost Specialist will be conversant with all aspects of construction cost estimating during the design stages including the use of Elemental Cost Analysis, Risk Analysis, Life Cycle Costing and Value Engineering/Management techniques.

The purpose of cost planning and cost control is to assist in the accomplishment of project cost objectives. It is a continuous and interactive process involving planning, action, measurement, evaluation and revision.

1.2 Scope of Services

The Cost Specialist shall provide an interactive and continuous cost consulting service from the commencement of project design through to construction completion, including the preparation of complete estimates for all construction trades, escalation, inflation and contingency costs.

The Cost Specialist shall provide to PWGSC and the Consultant, a cost advising, and cost monitoring/reporting service.

The Cost Specialist shall attend all project meetings throughout the design phases and be prepared to present and defend the estimates directly to the Departmental Representative.

The fee proposal should be based on one lump sum fixed price construction contract. Should the Departmental Representative decide to deliver the project by project management, construction management, phased construction or other means, the Cost Specialist will negotiate any fee adjustment with the Consultant that is acceptable to PWGSC, prior to commencing adjustment of estimates and reporting systems.

Other services may be provided at additional cost, if requested.

1.3 Services - Basic Activities

The Cost Specialist shall work with and advise the Consultant team and PWGSC of the costs of individual building components and costs of various design systems. Estimates should be prepared in detail and summarized using an Elemental Analysis format. Acceptable formats are noted under the **Submission Standards** section following.

1.3.1 Reporting

Milestone Reporting At each of the Milestones specified in this document, 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 will be the prime basis on which estimates will 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.

In addition, the Cost Specialist shall fully coordinate all estimates with schedules.

A typical Milestone Report will contain:

1. Project Estimate Summary;
2. Elemental Estimate Summary;
3. Estimate Back-Up Detail:
 - Basis for escalation, inflation and contingency calculations;
 - Detailed measurement and pricing;
4. Narrative:
 - 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;
 - Notes on past and forecast Cost Specialist activity;
5. Estimate Reconciliation:
 - With last submission;
 - With Construction Cost Plan.

Any other relevant information.

Monthly Report In addition to the Milestone Reports, submit a Monthly Report 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 also contain a full up-to-date Elemental Cost Summary:

1. Project Estimate Summary;
2. Elemental Cost Summary;
3. Narrative:
 - 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;
 - Notes on past and forecast Cost Specialist activity

Exception Report The Cost Specialist is to 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 Cost Specialist with the Consultant team shall fully advise the Departmental Representative. The Cost Specialist with the Consultant team shall submit to PWGSC proposed alternative design

solutions and revise the most recent monthly estimate.

An Exception Report will include sufficient description and cost detail to clearly identify:

1. Scope Change: Identifying the nature, reason and total cost impact of all identified and potential project scope changes affecting Construction Cost Estimate.
2. Cost Overruns and Underruns: Identifying the nature, the reason and the total cost impact of all identified and potential cost variations.
3. 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.

1.3.2 Submission Standards

Summary Format

1. Elemental Analysis: All estimates shall be summarized in an agreed and consistent Elemental format. Several variations in format may be acceptable to PWGSC (by discussion) but those following the ASTM (USA), CIQS (CDN), CSI Uniformat II (USA) or BCIS (UK) formats are preferred.
2. Trade Summary: Where a trade summary is required, those following the Masterformat are preferred, except where local practice provides a more suitable alternative.
3. Project Cost Subdivision: The estimate shall isolate the costs of each phase of construction. All estimates within these phases shall further isolate and show separately the cost of individual building blocks and/or the accommodation sections listed here:
 - New Construction;
 - Renovation;
 - Sitework.

Media

1. Provide three [3] hard copies of all reports including estimate summaries only and one [1] additional hard copy of the full report including the additional estimate support information to PWGSC.
2. One soft copy of the total estimate, summary and support detail, shall be provided on 3.5" (PC format) diskettes in an agreed format.

Timelag

Recognizing that estimates must follow the design decisions they represent, such estimates may lag. The cost portion of the Milestone Reports may follow, but by no more than two weeks unless otherwise determined by the Departmental Representative.

Use of all available information

The Cost Specialist is responsible for providing a complete cost estimate even though the information provided during the concept, design development and early working drawing stages is incomplete. Where requirements are not firmly defined, the Cost Specialist shall make assumptions, confirm them with the Consultant and either list them as assumptions, or have them incorporated in an outline specification modified by the Consultant.

1.3.3 Techniques

The Cost Specialist is required to be familiar with and make use of a broad range of cost techniques, especially the following:

1. **Risk Analysis** All construction estimates (except the final pre-tender estimate) shall include and identify design, estimating, inflation escalation and currency exchange allowances as are deemed necessary in light of the current information available. The Cost Specialist shall provide a satisfactory explanation of the level and/or amount of all such sums included within any estimate.
2. **Scheduling** The Cost Specialist shall assist the Time Specialist by providing building quantities, building systems information, and other quantifiable parameters deemed appropriate to the calculation of a reasoned project time schedule. The Time Specialist shall assist the Cost Specialist by maintaining an up-to-date schedule of all design activities along with an agreed bidding and Construction Schedule that will be incorporated by the Cost Specialist within the estimates on a timely basis.
3. **Life Cycle Costing** In advising the Consultant of the cost information for alternative materials, methods and systems, it is necessary that the Cost Specialist uses all available information to ensure that a complete cost picture is made available, upon which design and construction decisions will be made.
4. **Continuing Estimate Process** A process of continual adjustment of previous estimates may be used in place of total remeasurement at each milestone reporting point. This is acceptable, provided that at each monthly reporting point a full and up-to-date Elemental Cost Summary is provided and that at each milestone reporting point this Elemental Cost Summary is supported by complete, detailed, stand lone back-up/support documentation, as previously described.
5. **Project Research** The Cost Specialist shall visit the proposed or alternative construction sites to become familiar with site conditions, site access, etc., analyze local labour and material supply conditions, local bidding practices and competition to establish pricing levels. A written report detailing this reconnaissance activity is expected.
6. **Value Engineering/Management** PWGSC may cause a Value Engineering/Management Study to be undertaken. The Consultant team will not be major players in this process, but shall answer questions and/or provide additional information called for by the Value Management team if requested to do so. The Cost Specialist shall assist the Value Management team by providing copies of the latest cost estimate and any additional cost information that may be required.

No allowance should be made for this activity in the fee proposal as payment for this activity shall be on a negotiated basis and paid separately by PWGSC.

1.4 Services - Specific Activities

Project Analysis Stage

No cost estimate is to be produced at the Project Analysis Stage.

Concept Design

Class "C" estimates will be prepared at the highest level of detail commensurate with the available information using elemental and additional detailed costs. Class "C" estimates are required for both Design Concepts under consideration as well as for one lane and two lane options for each concept.

Design Development

A refined and validated Class "C" is required with the 66% submission. Upon completion of design development prepare a Class "B" estimate representing the increased level of design detail available. The report shall be prepared using detailed (elemental) costs i.e. measured quantities with minimal allowances or lump sums.

Upon final acceptance, the Class "B" estimate shall become the Construction Cost Plan.

Contract Documents

During the production of the contract documents a process of continuing cost control progressively more detailed is required. At each review of contract documents, an up-to-date estimate shall demonstrate compliance with the Construction Cost Plan. Non-compliance with the Construction Cost Plan will require revisions to the contract documents.

Pre-Tender

Upon completion of the contract documents a pre-tender Class "A" cost estimate will be prepared using 100% measured quantities.

Provide a trade breakdown of the pre-tender estimate for use in reviewing the submitted bids and the successful Contractor's estimate breakdown.

Tender Stage

1. **Tender Award** During the tender period, examine and report on any cost impact created by the issue of tender/contract addenda. Incorporate the results of such addenda review into the final pre-tender estimate (both elemental and trade versions) prior to receipt of bids.
2. **Bid Review and Analysis** Assist the Departmental Representative, as required, by analyzing and reconciling any differences between the pre-tender estimate and the submitted bids.
3. **Negotiation** Should it be necessary to negotiate with any bidder prior to awarding the Contract, the Cost Specialist shall provide cost information as needed and enter into the negotiations if requested.
4. **Reconciliation** Upon the signing of a contract with the successful Contractor, the Cost Specialist if necessary, will reconcile both the elemental and trade estimates, in detail, with the agreed contract sum. These reconciled estimates will be used by the Construction Team during the construction phase of the project.

Cost Specialist Services through Construction

During construction, the Cost Specialist shall assist the Construction Team with cost advice if requested.

If required, payment will be made on an agreed, negotiated basis. Such activity may well encompass the following activities:

- Evaluation of change orders;
- Evaluation of claims;
- Evaluation of work completed;
- Evaluation of cash flow.

Post Contract

The Cost Specialist may be required to assist with the provision of details needed for an evaluation of the project, regarding the Project's cost performance.

If required, this work will be paid for on an agreed, negotiated basis.

1.5 Responsibilities to PWGSC

- PWGSC will review all aspects of the Cost Specialist's work on a continuing basis to determine the validity and completeness of the information provided. In the event PWGSC may identify areas of concern including errors and omissions as well as areas of inadequate detail or areas that require further explanation, the Cost Specialist shall re-examine the estimates provided and make such revisions as are subsequently agreed to be necessary and/or provide ample acceptable evidence that such corrections or amendments are unnecessary.
- **No Action Abrogates Consultant's Responsibilities**
 - No acceptance or approval by PWGSC, whether expressed or implied shall be deemed to relieve the Cost Specialist, or the Consultant, of professional or technical responsibility for the estimates and cost reports.
 - Neither does acceptance of an estimate by PWGSC in any way abrogate the Consultant's responsibility to maintain the agreed Construction Cost Plan throughout the life of the project, or the requirement to redesign should the lowest acceptable bid differ significantly from the agreed Construction Cost Plan, unless and until the Departmental Representative indicates otherwise in writing.

AS 2 RESIDENT SITE SERVICES DURING CONSTRUCTION

2.1 Description of Services

The purpose of the Resident Site services is to ensure the presence the Consultant's full-time representative on site to inspect, co-ordinate monitoring all aspects of the work during the construction of the facility, and liaise with the contractor, Public Works And Government Services Canada and other agencies as appropriate to the work. More than one person may be required to suit the hours of construction.

The Consultant Resident Site representative is responsible for providing full time (including overtime) resident inspection for all aspects of the project, maintaining daily records of all construction work placed. He is to maintain constant communication amongst the PWGSC Project Manager, Design Design Conulatant, and the Contractor

The Consultant Resident Site representative shall:

- be directly responsible to the Consultant and have a minimum of 10 years of bridge construction experience.
- become thoroughly familiar with the Contract documents, the National Building code and all Fire Commissioner of Canada Standards for Construction operations (incl. FCC No. 301 dated June 1982 and the Standard for Welding and Cutting FCC No. 302 dated June 1982). He shall also be aware of all Provincial and Municipal standards for the health and safety of construction workers.
- become thoroughly familiar with the requirements of the ConsultantProject Brief and project responsibilities of others which relate to his services.

2.2 Specific Duties and Responsibilities

Provide full time resident inspection, co-ordination and monitoring during the construction work and be responsible to the consultant. In addition, the departmental representative may delegate additional responsibilities subject to consultants agreement.

Maintain daily records of all construction work placed and ensure constant communication amongst PWGSC Property Manager, the Project Manager, the Regional Fire Commissioner, the Consultant, the Contractor, the appropriate Public Works And Government Services Departmental Representative and Consultants.

Co-ordinate and direct an assistant as approved by PWGSC.

In case of emergencies, the Consultant Resident Site representative is empowered to stop the work, or give orders to protect the safety of the workers or Crown property.

2.3 Inspection and Reporting

The Consultant Resident Site representative shall inspect all phases of the work in progress, for the purpose of bringing to the attention of the Contractor, after checking with the Consultant, and Departmental Representative any discrepancies between the work, the contract documents and accepted construction procedures. He shall keep a daily log of such inspections and shall issue a weekly written

report to the Consultant, both for distribution, in the form directed. The Resident Site representative shall make any other reports or surveys as may be requested by the Project Manager through the Consultant.

2.4 Interpretation of the Contract Documents

Interpretation of the contract documents shall be the responsibility of the Consultant. The Consultant may, however, have the Resident Site representative provide him with information regarding job conditions and may require him to relay day-to-day instructions to the contractor.

It shall be the duty of the Resident Site representative to assist the Consultant and further inform the Consultant of any anticipated problems which may delay the progress of the work. The method of relaying such information shall be determined by the Consultant.

2.5 Changes in the Work

The Resident Site representative shall not authorize or order any change in the work which will constitute a change in design or in the value of the contract except as delegated by the Departmental Representative.

The Consultant may call upon the Resident Site representative to assist in the evaluation of changes in the work, where a knowledge of job conditions is required.

2.6 Communication & Liaison

The Resident Site representative shall:

1. convey the Consultant's instructions regarding the required standards of workmanship to the Contractor(s);
2. specifications, confer and obtain guidance on these findings with the Consultant. The matter is then to be brought to the attention of the Contractor's Superintendent. Although informal discussions with Sub-trade Superintendents are usually permissible, (but only with the agreement of the Contractor), the Resident Site representative should not deal directly with foreman or tradesmen, or interfere with the progress of the work.
3. Communicate formally with the contractor via memorandum form only. When this form is issued the Resident Site representative must immediately file copies with PWGSC and the Consultant.
4. Contact the Consultant immediately when it is apparent that information or action is required of the Consultant, e.g. general instructions, clarifications, sample of shop drawing approvals, requisitions, contemplated change orders, site instructions, details, drawings, etc.
5. Accompany PWGSC representatives on inspections and report to the Consultant requirements, comments or instructions of the PWGSC's forces. Note that the Resident Site representative should encourage such requirements, comments or instructions to be provided to him in writing.
6. Consider and evaluate any suggestions or modifications to the documents advanced by the Contractor and immediately report these to the Consultant with comments.
7. Ensure that PWGSC and the Consultant are notified promptly when key pieces and/or components of materials and equipment are delivered, so that these parties can arrange for the appropriate personnel to have an opportunity to inspect same prior to installation.

The Resident Site representative will investigate, schedule and approve in writing, all temporary or permanent connections into any of the buildings' systems prior to the work being done. He shall provide advanced forecasts and advise the PWGSC Property Manager of any interruption of normal building

services with a minimum 24 hours notice prior to the work being undertaken, where this work cannot be done during the silent hours.

2.7 Daily Log

The Resident Site representative shall keep a daily log recording:

1. weather conditions, particularly unusual weather relative to construction activities in progress;
2. major material and equipment deliveries;
3. daily activities and major work done;
4. start, stop or completion of activities;
5. presence of inspection and testing firms, tests taken, results, etc;
6. unusual site conditions experienced;
7. significant developments, remarks, etc;
8. special visitors on site;
9. authorities given contractor to undertake certain or hazardous works
10. environmental incident
11. reports, instructions from Appropriate Authorities Response Actions.

Note: The log is the personal property of the Resident Site representative. Copies of the log book, certified as copies, are to be provided to PWGSC and consultant at the end of the project.

2.8 Weekly Records

The Resident Site representative shall prepare weekly reports for the Consultant in the form directed:

1. progress relative to schedule;
2. major activities commencing or completed during the week; main activities now in progress;
3. major deliveries of materials and/or equipment;
4. difficulties which may cause delays in completion;
5. materials and labour needed immediately;
6. cost estimates of work completed and materials delivered (cost plus contracts);
7. outstanding information or action required by Consultant or PWGSC;
8. work force;
9. weather;
10. remarks;
11. accidents on site;
12. life safety or building hazards caused by the work, the contractor or his agents.

2.9 Site Records

The Resident Site representative shall maintain orderly and updated files at the site for the use of the PWGSC, Consultant and himself as follows:

1. Contract and Tender Documents.
2. Approved Shop Drawings.
3. Approved Samples.
4. Samples.
5. Site Instructions.
6. Contemplated Change Orders.
7. Change Orders.
8. Memoranda.
9. Test and Deficiency Reports.
10. Correspondence and Minutes of Meeting.

11. Names, addresses, telephone numbers of Client representatives, Consultant and all Contractors, sub-trades key personnel associated with the contract; including home telephone numbers in case of emergencies.

In addition, the Resident Site representative shall maintain an updated progress schedule.

A reproduction of the original contract drawings shall be carefully preserved and shall be 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.

2.10 Inspection of the Work

The Resident Site representative shall make on site observations and spot checks of the work to determine whether the work, materials and equipment conform with the contract documents and supplementary conditions. The Site consultant's representative shall advise the Contractor of any deficiencies or unapproved deviations via memorandum and report immediately to the Consultant and PWGSC Project Manager any of these on which the Contractor is tardy or refuses to correct.

The Resident Site representative shall arrange for the Consultant's architectural, structural, mechanical, electrical and other consultants to make the periodic inspections required by the Consultant's contract, and for these inspections to be made timely with respect to the progress of the work.

The Resident Site representative shall also report if materials and equipment are being incorporated into the project prior to approval of relative shop drawings or samples.

The Resident Site representative shall assist in the preparation of all deficiency reports, interim, preliminary, and final, in collaboration with the PWGSC and Consultant's representatives.

The Resident Site representative shall be responsible for the measurement of all work to be done on a unit-cost basis.

2.11 Site Meetings

The Resident Site representative shall attend all job-site meetings.

2.12 Inspection and Testing

The Resident Site representative must see that the tests and inspections required by the contract documents are conducted, and should observe these tests and report the results in the daily log.

The Consultant should be notified if the test results do not meet the specified requirements, or if the Contractor does not have tests undertaken as required.

2.13 Emergencies

In the case of emergency where safety of persons or property is concerned, or work is endangered by the actions of the contractor of the elements, to safeguard the interests of PWGSC, the Resident Site representative shall give immediate written notice to the Contractor of the possible hazard. He shall further, if necessary, stop the work or give orders for remedial work, and contact the Consultant immediately for further instruction.

2.14 Limitations

The Resident Site representative shall not:

1. Authorize deviations from the contract documents.

2. Conduct tests.
3. Approve shop drawings or samples.
4. Advise the user-client in any matter without obtaining guidance from the Consultant.
5. Accept any work or portions of the building.
6. Enter into the area of responsibility of the Contractor's Field Superintendent.
7. Stop the work unless convinced that an emergency exists as noted above.

2.15 Hazardous Construction Operations

It is the duty of the Resident Site representative to examine all site conditions and methods to be used by the Contractor undertaking hazardous operations.

Give written authority to undertake hazardous operations to the Contractor, when fully satisfied that all necessary precautions and acts have been taken by the Contractor to safeguard the life safety of the workers and building occupants and Crown property. Written authority shall be countersigned by the Contractor to acknowledge that the latter is aware of the Resident Site representative's instructions and requirements and both parties will retain copies of the authority document signed mutually by them.

The Resident Site representative shall 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 stopping the work. All infractions, or work stoppages ordered shall be reported in writing and verbally to the Consultant and PWGSC Construction Supervisor.

2.16 Building Security

Special precautions must be taken at all times to prevent unauthorized entry of the building. 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.

The Resident Site representative will liaise closely with the Consultant and PWGSC Departmental Representative on all security and/or safety problems that may arise due to the contractor's operations.



Doing Business with the National Capital Area (NCA)



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SECTION 1 INTRODUCTION

This document must be used in conjunction with the Terms of Reference (TOR), as the two documents are complimentary. The TOR describes project-specific requirements while this document deals with information common to all projects. In case of a conflict between the two documents, the requirements of the TOR override this document.

SECTION 2 PWGSC NATIONAL CADD STANDARD

Drawings shall be in accordance with PWGSC National CADD Standards and Canadian Standards Association (CSA) B78.3.

Refer to:

<http://www.tpsgc-pwgsc.gc.ca/biens-property/cdao-cadd/index-eng.html>

The above link is subject to change. The Consultant shall check with the Project Manager to ensure that the link and related information are current and relevant with regards to PWGSC National CADD Standards.

SECTION 3 GUIDE TO PREPARATION OF CONSTRUCTION DOCUMENTS FOR PWGSC

1 Purpose

This document provides direction in the preparation of construction contract documents (namely specifications, drawings and addenda) for Public Works and Government Services Canada (PWGSC).

Drawings, specifications and addenda must be complete and clear, so that a contractor can prepare a bid without guesswork. Standard practice for the preparation of construction contract documents requires that:

- drawings are the graphic means of showing work to be done, as they depict shape, dimension, location, quantity of materials and relationship between building components.
- specifications are written descriptions of materials and construction processes in relation to quality, colour, pattern, performance and characteristics of materials, installation and quality of work requirements.
- Addenda are changes to the construction contract documents or tendering procedures, issued during the tendering process.

2 Principles of PWGSC Contract Documents

PWGSC's contract documents are based on common public procurement principles. PWGSC does not use Canadian Construction Document Committee (CCDC) documents.

The terms and conditions are prepared and issued by PWGSC as well as other related bidding and contractual documents. For information, the clauses are available on the following web site: <http://sacc.pwgsc.gc.ca/sacc/query-e.jsp>. Any questions should be directed to the Project Manager.

3 Quality Assurance

Consultants are required to undertake their own quality control process and must review, correct and coordinate (between disciplines) their documents before sending them to PWGSC.

SPECIFICATIONS

1 National Master Specification

The National Master Specification (NMS) is a master construction specification available in both official languages, which is divided into 48 Divisions and used for a wide range of construction and/or renovation projects. In preparing project specifications, the Consultant must use the current edition of the NMS in accordance with the "NMS User's Guide".

The Consultant retains overriding responsibility for content and shall edit, amend and supplement the NMS as deemed necessary to produce an appropriate project specification free from conflict and ambiguity.

2 Specification Organization

Narrowscope sections describing single units of work are preferred for more complex work, however, broadscope sections may be more suitable for less complex work. Use either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full-page format.

Start each Section on a new page and show Project Number, Section Title, Section Number and Page Number on each page. Specification date, project title, and consultant's name are not to be indicated.

3 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to" or "equivalent to", "to be determined on site by "Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

4 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

5 Standards

As references in the NMS may not be up to date, it is the responsibility of the consultant to ensure that the project specification uses the latest applicable edition of all references quoted. The following is a list of some of the Internet websites which provide the most current publications of standards for reference in the construction specification document.

- CSA standards: <http://www.csa.ca>
- CGSB standards: <http://www.pwgsc.gc.ca/cgsb>
- ANSI standards: <http://www.ansi.org>
- ASTM Standards: <http://www.astm.org>
- ULC standards: <http://www.ulc.ca>
- General reference of standards: <http://www.cssinfo.com>

The NMS website (<http://www.tpsgc-pwgsc.gc.ca/biens-property/ddn-nms/index-eng.html>) also links to other documents references in the NMS under its "Links" feature.

6 Specifying Materials

The practice of specifying actual brand names, model numbers, etc., is against departmental policy except for special circumstances. The method of specifying materials shall be by using recognized standards such as those produced by Canadian Gas Association (CGA), Canadian General Standards Board (CGSB), Canadian Standards Association (CSA), and Underwriters' Laboratories of Canada (ULC), or by trade associations such as Canadian Roofing Contractors' Association (CRCA) and Terrazzo, Tile, Marble Association of Canada (TTMAC). Canadian standards should be used wherever possible.

If the above method cannot be used and where no standards exist, specify by a non-restrictive, non-trade name "prescription" or "performance" specifications.

In exceptional or justifiable circumstances or if no standards exist and when a suitable non-restrictive, non-trade name "prescription" or "performance" specification cannot be developed, specify by trade name. Include all known materials acceptable for the purpose intended, and in the case of equipment, identify by type and model number.

Acceptable Materials: set up the paragraph format as follows:

Acceptable Materials:

1. ABC Co. Model [_____].
2. DEF Co. Model [_____].
3. GHI Co. Model [_____].

Alternative materials to those specified may be considered during the solicitation period, however, the onus will be on the Consultant to review and evaluate all requests for approval of alternative materials.

The term "Acceptable Manufacturers" should not be used, as this restricts competition and does not ensure the actual material or product will be acceptable. A list of words and phrases that should be avoided is included in the NMS User's Guide.

Sole Sourcing: Sole sourcing for materials and work can be used for proprietary systems (ie. fire alarm systems, EMCS systems). **Substantiation and/or justification will be required.**

Wording for the sole source of work should be in Part 1 as:

Designated Contractor

- .1 Hire the services of [_____] to do the work of this section."

Wording for the sole source of EMCS systems should be in Part 1 as

Designated Contractor

- .1 Hire the services of [_____] or its authorized representative to complete the work of all EMCS sections."

and in Part 2 as Materials

- .1 There is an existing [_____] system presently installed in the building. All materials must be selected to ensure compatibility with the existing [_____] system.

Wording for the sole source of materials (ie. fire alarm systems) should be in Part 2 as:

Acceptable materials

.1 The only acceptable materials are [] .”

Prior to including sole source materials and/or work, the Consultant should contact the Project Manager to obtain the approval for the sole sourcing.

7 Unit Prices

Unit prices are used where the quantity can only be estimated (eg. earth work) and the approval of the Project Manager must be sought in advance of their use.

Use the following wording:

[The work for this section] or [define the specific work if required, e.g. rock excavation] will be paid based on the actual quantities measured on site and the unit prices stated in the Bid and Acceptance Form.

In each applicable NMS section, replace paragraph title "Measurement for Payment" with "Unit Prices".

Sample of Unit Price Table:

The Unit Price Table designates the Work to which a Unit Price Arrangement applies.

- (a) The Price per Unit and the Estimated Total Price must be entered for each Item listed.
- (b) Work included in each item is as described in the referenced specification section.

| Item | Specification Reference | Class of Labour, Plant or Material | Unit of Measurement | Estimated Quantity | Price per Unit GST/HST extra | Estimated Total Price GST / HST extra |
|--|-------------------------|------------------------------------|---------------------|--------------------|------------------------------|---------------------------------------|
| | | | | | | |
| | | | | | | |
| TOTAL ESTIMATED AMOUNT | | | | | | |
| Transfer amount to subparagraph 1)(b) of BA03 | | | | | | |

8 Cash Allowances

Construction contract documents should be complete and contain all of the requirements for the contractual work. Cash allowances are to be used only under exceptional circumstances (ie. utility companies, municipalities), where no other method of specifying is appropriate. Obtain approval from the Project Manager in advance to include cash allowances and then use "Section 01 21 00 - Allowances" of the NMS to specify the criteria.

9 Warranties

It is the practice of PWGSC to have a 12 month warranty and to avoid extending warranties for more than 24 months. When necessary to extend beyond the 12 month warranty period provided for in the General Conditions of the contract, use the following wording in Part 1 of the applicable technical sections, under the heading "Extended Warranty":

- "For the work of this Section [], the 12 month warranty period is extended to 24 months.
- Where the extended warranty is intended to apply to a particular part of a specification section modify the above as follows: "For [] the 12 month ... [] months."

Delete all references to manufacturers' guarantees.

10 Scope of Work

No paragraphs noted as "Scope of Work" are to be included.

11 Summary and Section Includes in Part -1 General of Section

Do not use "Summary" and "Section Includes."

12 Related Sections

In every section of the specification at 1.1 "Related Sections": coordinate the list of related sections and appendices. Ensure co-ordination among the sections of the specification and ensure not to reference any section or appendices which do not exist.

13 Index

List all the plans and specification sections with correct number of pages, section names and correct drawing titles in the format shown in Appendix A.

14 Regional Guide

The Consultant should contact the Project Manager to obtain the region's requirements for Division 01 or other short form specifications as might be appropriate. For example, it is required in the National Capital Region that regional Section 01 00 10 - General Instructions be used on all projects.

15 Health and Safety

It is required that all project specifications include "Section 01 35 29.06 - Health and Safety Requirements." Confirm with the Project Manager to determine if there are any instructions to meet regional requirements.

16 Designated Substances Report

Include "Section 01 14 25 - Designated Substances Report"

17 Subsurface Investigation Reports

Subsurface Investigation Report(s) are to be included after Section 31 and the following paragraph should be added to Section 31:

Subsurface investigation report(s)

.1 Subsurface investigation report(s) are included in the specification following this section.

When the Project Manager determines that it is not practical to include the subsurface investigation report(s), alternate instructions will be provided.

Where tender documents are to be issued in both official languages, the subsurface investigation report(s) shall be issued in both languages.

In addition to the provision of the Subsurface Investigation Report, the foundation information required by the National Building Code of Canada 2005 (Division C, Part 2, 2.2.4.6) shall be included on foundation drawings.

18 Experience and Qualifications

Remove experience and qualification requirements from specification sections.

19 Prequalification and Pre-award submissions

Do not include in the specification any mandatory contractor and/or subcontractor prequalification or pre-award submission requirements that could become a contract award condition. If a prequalification process or a pre-award submission is required, contact the Project Manager.

There should be no references to certificates, transcripts or license numbers of a trade or subcontractor being included with the bid.

20 Contracting Issues

Specifications describe the workmanship and quality of the work. Contracting issues should not appear in the specifications. Division 00 of the NMS is not used for PWGSC projects.

Remove all references within the specifications, to the following:

- General Instructions to Bidders
- General Conditions
- CCDC documents
- Priority of documents
- Security clauses
- Terms of payment or holdback
- Tendering process
- Bonding requirements
- Insurance requirements
- Alternative and separate pricing
- Site visit (Mandatory or Optional)
- Release of Lien and deficiency holdbacks

DRAWINGS

1 Title Blocks

Use PWGSC title block for drawings and sketches (including addenda).

2 Dimensions

Dimensions are to be in metric only (no dual dimensioning).

3 Trade Names

Trade names on drawings are not acceptable. Refer to SECTION 3, SPECIFICATIONS, 6.0 Specifying Materials for specifying materials by trade name.

4 Specification Notes

No specification type notes are to appear on any drawing.

5 Terminology

Use the term "Departmental Representative" instead of Engineer, PWGSC, Owner, Consultant or Architect. "Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor.

Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to" or "equivalent to", "to be determined on site by "Departmental Representative", should not be indicated in the specifications as this promotes inaccurate and inflated bids. Specifications must permit bidders to calculate all quantities and bid accurately. If quantities are impossible to identify (i.e. cracks to be repaired) give an estimated quantity for bid purposes (unit prices). Ensure that the terminology used throughout the specifications is consistent and does not contradict the applicable standard construction contract documents.

6 Information to be included

Drawings should show the quantity and configuration of the project, the dimensions and details of how it is constructed. There should be no references to future work and no any information that will be changed by future addenda. The scope of work should be clearly detailed and elements not in contract should be eliminated or kept to an absolute minimum.

7 Drawing Numbers: Number drawings in sets according to the type of drawing and the discipline involved as follows (The requirements of SECTION 2 PWGSC NATIONAL CADD STANDARD will supercede these requirements, where warranted).

During the Design Phase of the project each submission and review must be noted on the Notes block of the drawing title, but at the time of construction document preparation, all revision notes should be removed.

| Discipline | Drawing |
|-------------------|----------------|
| Demolition | D1, D2, etc. |
| Architectural | A1, A2, etc. |
| Civil | C1, C2, etc. |
| Landscaping | L1, L2, etc. |
| Mechanical | M1, M2, etc. |
| Electrical | E1, E2, etc. |
| Structural | S1, S2, etc. |
| Interior Design | ID1, ID2, etc. |

- 8 Presentation Requirements:** Present drawings in sets comprising the applicable demolition, architectural, structural, mechanical and electrical drawings in that order. All drawings should be of uniform standard size.
- 9 Prints:** Print with black lines on white paper. Blue prints are acceptable for document submissions at 33%, 66% and 99% stages. Confirm with Project Manager the size of prints to be provided for review purposes.
- 10 Binding:** Staple or otherwise bind prints into sets. Where presentations exceed 20 sheets, the drawings for each discipline may be bound separately for convenience and ease of handling.
- 11 Legends:** Provide a legend of symbols, abbreviations, references, etc., on the front sheet of each set of drawings or, in large sets of drawings, immediately after the title sheet and index sheets.
- 12 Schedules:** Where schedules occupy entire sheets, locate them next to the plan sheets or at the back of each set of drawings for convenient reference. See *CGSB 33-GP-7 Architectural Drawing Practices for schedule arrangements*.
- 13 North Points:** On all plans include a north point. Orient all plans in the same direction for easy cross-referencing. Wherever possible, lay out plans so that the north point is at the top of the sheet.
- 14 Drawing Symbols:** Follow generally accepted drawing conventions, understandable by the construction trades, and in accordance with PWGSC publications.

ADDENDA

1 Format

Prepare addenda using the format shown in Appendix B. No signature type information is to appear.

Every page of the addendum (including attachments) must be numbered consecutively. All pages must have the PWGSC project number and the appropriate addendum number. Sketches shall appear in the PWGSC format, stamped and signed.

No Consultant information (name, address, phone #, consultant project # etc.) should appear in the addendum or its attachments (except on sketches).

2 Content

Each item should refer to an existing paragraph of the specification or note/detail on the drawings. The clarification style is not acceptable.

DOCUMENTATION

Translation

When required, all documentation included in the construction contract documents shall be in both official languages.

Ensure that English and French documents are equal in all respects. There can be no statement that one version takes precedence over the other.

Consultant shall provide:

- Per construction document submission, a completed and signed Checklist for the Submission of Construction Documents. See Appendix 'A'.
- Specification: originals printed one side on 216 mm x 280 mm white bond paper.
- Index: as per Appendix 'C'
- Addenda (if required): as per Appendix 'B' (to be issued by PWGSC).
- Drawings: reproducible originals, sealed and signed by the design authority.
- Tender information:
 - Including a description of all units and estimated quantities to be included in unit price table.
 - Including a list of significant trades including costs. PWGSC will then determine which trades, if any, will be tendered through the Bid Depository.
 - Government Electronic Tendering System (MERX): Consultants to provide an electronic true copy of the final documents (specifications and drawings) on one or multiple CD-ROM in Portable Document Format (PDF) without password protection and printing restrictions. The electronic copy of drawings and specifications is for bidding purposes only and do not require to be signed and sealed. See Appendix 'D' and Appendix 'E'.

PWGSC shall provide:

- General and Special Instructions to Bidders
- Bid and Acceptance Form
- Standard Construction Contract Documents



SECTION 4 CLASSES OF CONSTRUCTION COST ESTIMATES USED BY PWGSC

DESCRIPTION OF THE CLASSES OF ESTIMATES USED BY PWGSC FOR CONSTRUCTION COSTING OF BUILDINGS PROJECTS

Class 'D' (Indicative) Estimate:

Based upon a comprehensive statement of requirements, and an outline of potential solutions, this estimate is to provide an indication of the final project cost, and allow for ranking all the options being considered.

Submit Class D cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class D cost estimate shall be such that no more than a 20% contingency allowance is required.

Class 'C' Estimate:

Based on a comprehensive list of requirements and assumptions, including a full description of the preferred schematic design option, construction/design experience, and market conditions. This estimate must be sufficient for making the correct investment decision.

Submit Class C cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors with cost per m² for current industry statistical data for the appropriate building type and location. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class C cost estimate shall be such that no more than a 15% contingency allowance is required.

Class 'B' (Substantive) Estimate:

Based on design development drawings and outline specifications, which include the design of all major systems and subsystems, as well as the results of all site/installation investigations. This estimate must provide for the establishment of realistic cost objectives and be sufficient to obtain effective project approval.

Submit Class B cost estimates in elemental cost analysis format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class B cost estimate shall be such that no more than a 10% design contingency allowance is required.

Class 'A' (Pre-Tender) Estimate:

Based on completed construction drawings and specifications prepared prior to calling competitive tenders. This estimate must be sufficient to allow a detailed reconciliation/negotiation with any contractor's tender.

Submit Class A cost estimates in both elemental cost analysis format and trade divisional format latest edition issued by the Canadian Institute of Quantity Surveyors. Include a summary in the cost estimate, plus full back up, showing items of work, quantities, unit prices, allowances and assumptions.

The level of accuracy of a class A cost estimate shall be such that no more than a 5% design contingency allowance is required.

SECTION 5 TIME MANAGEMENT

1 Time Management, Planning, and Control

The Time Management, Planning, and Control Specialist (scheduler) shall provide a Project Planning and Control System (Control System) for Planning, Scheduling, Progress Monitoring and Reporting and a Time Management, Planning, and Control Report (Progress Report). It is required that a fully qualified and experienced Scheduler play a major role in providing services in the development and monitoring of the project schedule.

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

PWGSC presently utilizes the Primavera Suite software and MicroSoft Project for it's current Control Systems and any software used by the consultant should be fully integrated with these, using one of the many commercially available software packages.

1.1 Schedule Design

Project Schedules are used as a guide for execution of the project as well as to communicate to the project team when activities are to happen, based on network techniques using Critical Path Method (CPM).

When building a Control System you must consider:

1. The level of detail required for control and reporting;
2. The reporting cycle- monthly and what is identified in the Terms of Reference, but also includes Exception Reports;
3. That the duration must be in days;
4. What is required for reporting in the Project Teams Communications Plan and
5. The nomenclature and coding structure for naming and reporting requirements of activities, schedules and reports.

1.2 Schedule Development

For purposes of monitoring and reporting of project progress and ease of schedule review it is important to maintain a standard for all schedules and reports starting with the Work Breakdown Structure (WBS), identification of Milestones, naming of activities as well as schedule outputs and paper sizing and orientation.

Work Breakdown Structure

When developing the schedule the consultant needs to use PWGSC standards and practices. Two basic requirements are the National Project Management System

(NPMS) and a Work Breakdown Structure (WBS), structured supporting the NPMS (Levels 1-4).

The WBS is as follows:

- Level 1 Project Title (NPMS)
- Level 2 Project Stage (NPMS)
- Level 3 Project Phase (NPMS)
- Level 4 Processes to meet Deliverables/Control Points Milestones (NPMS)
- Level 5 Sub-Processes and Deliverables in support of Level 4
- Level 6 Discrete activities. (Work Package)

Not all the Stages, Phases and Processes in the NPMS will be required on all the projects, however the structure remains the same.

Major and Minor Milestones

The Major Milestones are standard Deliverables and Control Points within NPMS and are required in all schedule development. These Milestones will be used in Management Reporting within PWGSC as well as used for monitoring project progress using Variance Analysis. The Minor milestones are process deliverables (Level 4) or sub-process deliverables (level 5) also used in Variance Analysis.

Each Milestone will also be assigned appropriate coding for Status Reporting and Management Reporting.

Milestones must have zero duration and are used for measuring project progress.

Milestones may also be external constraints such as the completion of an activity, exterior to the project, affecting the project.

Activities

All activities will need to be developed based on Project Objectives, Project Scope , Major and Minor Milestones, meetings with the project team and the scheduler's full understanding of the project and it's processes.

Subdivide the elements down into smaller more manageable pieces that organize and define the total scope of work in Levels 5-6 that can be scheduled, costed, monitored and controlled. This process will develop the Activity List for the project.

Each activity is a discrete element of work and is the responsibility of one person to perform.

Each activity will describe the work to be performed using a verb and noun combination (i.e. Review Design Development Report).

Activities should not have durations longer that 2 update cycles, with exception of activities not yet defined in a "Rolling Wave".

Each activity will be assigned at WBS level 6 and appropriately coded for Status Reporting and Management Reporting.

These elements will become activities, interdependently linked in Project Schedules.

Project Logic

Once the WBS, Milestones and Activity List have been developed the activities and milestones can be linked in a logical manner starting with a Project Start Milestone. Every activity and milestone must be linked in a logical manner using either a Finish to Start (FS), Finish to Finish (FF), Start to Start (SS) or Start to Finish (SF) relationship. There can be no open-ended activities or milestones.

A Finish to Start (FS) is the preferred relationship.

When developing relationships avoid the use of lags and constraints in place of activities and logic.

Activity Duration

The activity duration (in days) is the estimated length of time it will take to accomplish a task.

Consideration needs to be taken in how many resources are needed and are available, to accomplish any activity. (Example: availability of Framers during a "Housing Boom".) Other factors are the type or skill level of the available resources, available hours of work, weather etc.

There will be several types of lists and schedules produced from this process, which will form part of the Progress Report.

Activity List

An Activity List identifies all activities including milestones required to complete the whole project.

Milestone List

A Milestone List identifies all project Major and Minor milestones.

Master Schedule

A Master Schedule is a schedule used for reporting to management at WBS level 4 and 5 that identifies the major activities and milestones derived from the detailed schedule. Cash Flow projections can be assigned at WBS level 5 for monitoring the Spending Plan.

Detailed Project Schedule

A Detailed Project Schedule is a schedule in reasonable detail (down to WBS Level 6 and 7) for progress monitoring and control, this will ensure that the schedule shall be in sufficient detail to ensure adequate planning and control.

1.3 Schedule Review and Approval

Once the scheduler has identified and properly coded all the activities; put them into a logical order and then determined the appropriate durations. The scheduler can then analyze the schedule to see if the milestone dates meet the contractual requirements and then adjust the schedule accordingly by changing durations, resource leveling or changing logic.

When the schedule has been satisfactorily prepared the scheduler can present the detailed schedule to the Project Team for approval and be Baseline. There may be several iterations before the schedule meets with the Project Teams agreement and the contractual requirements.

The final agreed version must be copied and saved as the Baseline to monitor variances for reporting purposes.

1.4 Schedule Monitoring and Control

Once Baseline the schedule can be better monitored, controlled and reports can be produced.

Monitoring is performed by, comparing the baseline activities % complete and milestone dates to the actual and forecast dates to identify the variance and record any potential delays, outstanding issues and concerns and provide options for dealing with any serious planning and scheduling issues in report form.

Analyze and report from early start sequence on all activities due to start, underway, or finished for the complete project.

There will be several reports generated from the analysis of the baseline schedule and will form part of the Time Management Report in the Required Services Sections (RS)

Progress Reports

A Progress Report reflects the progress of each activity to the date of the report, any logic changes, both historic and planned, projections of progress and completion the actual start and finish dates of all activities being monitored.

The Progress Report includes:

A Narrative Report, detailing the work performed to date, comparing work progress to planned, and presenting current forecasts. This report should summarize the progress to date, explaining current and possible deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

Narrative reporting begins with a statement on the general status of the project followed by a summarization of delays, potential problems and project status criticality, any

potential delays, outstanding issues and concerns and options for dealing with any serious planning and scheduling issues.

A Variance Report, with supporting schedule documentation, detailing the work performed to date, comparing work progress to planned. This report should summarize the progress to date, explaining all causes of deviations and delays and the required actions to resolve delays and problems with respect to the Detail Schedule, and Critical Paths.

A Criticality Report identifying all activities and milestones with negative, zero and up to five days Total Float used as a first sort for ready identification of the critical, or near critical paths through the entire project.

Included in the Progress Report as attachments are: WBS chart, Activity Lists, Milestone Lists, Master Schedules, Detailed Project Schedule

Exception Report

The Scheduler is to provide continuous monitoring and control, timely identification and early warning of all unforeseen or critical issues that affect or potentially affect the project.

If unforeseen or critical issues arise, the Scheduler will advise the Project Manager and submit proposed alternative solutions in the form of an Exception Report.

An Exception Report will include sufficient description and detail to clearly identify:

1. Scope Change: Identifying the nature, reason and total impact of all identified and potential project scope changes affecting the project.
2. Delays and accelerations: Identifying the nature, the reason and the total impact of all identified and potential duration variations.
3. Options Enabling a Return to the project baseline: Identifying the nature and potential effects of all identified options proposed to return the project within baselined duration.

1.5 Standard Submissions

At each submission or deliverable stage provide a complete and updated Progress Report, the contents of each report will vary with requirements and at each project phase. Typically a Progress Report has:

1. Executive Summary;
2. Narrative Report;
3. Variances Report;
4. Criticality Report;
5. Exception Report (as required)
6. Work Breakdown Structure Chart;
7. Activity List;
8. Milestone List;
9. Master Schedule with Cash Flow Projections;
10. Detail Project Schedule (Network Diagram or Bar Charts);

1.6 Schedule Outputs and Reporting Formats

The sheet sizing and orientation is more a suggestion that a role, changes to the paper format may vary to accommodate the information and column information required.

Progress Reports

Paper Size: Letter

Paper Format: Portrait

Title Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Body Text: Narratives for each report to match other reports generated in the D.S.S.

Variance Report Columns: Activity ID, Activity Name, Planned Finish, Revised Finish, Variance, Activity % Complete,

Criticality Report Columns: Activity ID, Activity Name, Duration, Start, Finish, Activity % Complete, Total Float.

Exception Reports

Paper Size: Letter

Paper Format: Portrait

Title Format: Project Title; Report Type; Print Date; Data Date; Revision

Body Text: Narrative to match other reports generated in the D.S.S.

Paper Size: Letter

Paper Format: Landscape

Title Format: Project Title; Report Type; Print Date; Data Date; Revision

Columns: Activity ID, Activity Name, Duration, Remaining Duration, Start, Finish, Total Float.

Work Breakdown Structure (indent tree):

Paper Size: Letter

Paper Format: Portrait

Columns: WBS Code, WBS Name, Duration, Cost estimate, start and finish dates.

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Activity Lists

Paper Size: Letter

Paper Format: Portrait

Columns: Activity ID, Activity Name, Start, Finish, Predecessor, Successor.

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

Milestone Lists

Paper Size: Letter

Paper Format: Portrait

Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Start, Finish.

Sort with Early Start, then Early Finish, then Activity ID and without the WBS.

Master Schedule (Bar Chart)

Paper Size: 11X17
Paper Format: Landscape
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish,
Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

Detailed Project Schedules (Bar Chart)

Paper Size: 11X17
Paper Format: Landscape
Footer Format: Project Title; Report Type; Print Date; Data Date; Revision Block
Columns: Activity ID, Activity Name, Duration, Activity % Complete, Start, Finish,
Total Float.

Sort with Early Start, then Early Finish, then Activity ID and with the WBS.

APPENDIX 'A' - Checklist for the Submission of Construction Documents to PWGSC

Last updated November 21, 2012

| | | |
|---------------------------|-------------------------------|------------|
| Date: | | |
| Project Title: | Project Location: | |
| Project Number: | Contract Number: | |
| Consultant's Name: | PWGSC Project Manager: | |
| Review Stage: | 66% | 99% |
| | 100% | |

| Item | Verified by: | Comments: | Action by: |
|---|--------------|-----------|------------|
| Specifications: | | | |
| 1 National Master Specifications | | | |
| 1a The current edition of the NMS has been used. | | | |
| 1b Sections have been included for all work identified on drawings and sections edited. | | | |
| 2 Specification Organization | | | |
| 2a Either the NMS 1/3 - 2/3 page format or the Construction Specifications Canada full page format is used. | | | |
| 2b Each Section starts on a new page and the Project Number, Section Title, Section Number and Page Number show on each page. | | | |
| 2c Specification date and consultant's name are not indicated. | | | |
| 3 Terminology | | | |
| 3a The term Departmental Representative is used instead of Engineer, PWGSC, Owner, Consultant or Architect. | | | |
| 3b Notations such as: "verify on site", "as instructed", "to match existing", "example", "equal to", "equivalent to" and "to be determined on site by" are not used. | | | |
| 4 Dimensions | | | |
| 4a Dimensions are provided in metric only. | | | |
| 5 Standards | | | |
| 5a The latest edition of all references quoted is used. | | | |

| | | | |
|---|--|--|--|
| 6 Specifications Materials | | | |
| 6a The method of specifying materials uses recognized standards. Actual brand names and model numbers are not specified. | | | |
| 6b Materials are specified using standards and performance criteria (if not, the correct form of acceptable materials has been used). | | | |
| 6c Identify if non-restrictive, non-trade name “prescription” or “performance” specifications are used. | | | |
| 6d Indicate if a list of acceptable materials have been used. | | | |
| 6e The term “Acceptable Manufacturers” is not used. | | | |
| 6f No sole sourcing has been used. | | | |
| 6g If sole sourcing has been used, the correct wording has been used and a justification provided to RPCD for the sole sourced products. | | | |
| 7 Unit Prices | | | |
| 7a Unit prices are used only for work that is difficult to estimate. | | | |
| 8 Cash Allowances | | | |
| 8a Indicate if cash allowances have been used. | | | |
| 9 Warranties | | | |
| 9a Indicate if warranties extend more than a 12 or 24 months period. | | | |
| 9b Manufacturers guarantees are not indicated. | | | |
| 10 Scope of Work | | | |
| 10 No paragraphs noted as “Scope of Work” are included. | | | |
| 11 Summary and Section Includes | | | |
| 11a In part 1 of section, paragraphs “Summary” and “Section Includes” are not used. | | | |
| 12 Related Sections | | | |
| 12a The list of related sections and appendices are coordinated. | | | |
| 13 Index | | | |
| 13a The index shows a complete list of plans and specification sections with the correct number of pages and correct drawing titles and section names. | | | |
| 14 Regional Guide Specifications | | | |
| 14a General Instructions is included (Section 01 00 10 in the NCA). | | | |

| | | | |
|---|--|--|--|
| 15 Health and Safety | | | |
| 15a Section 01 35 29.06 - Health and Safety Requirements is included. | | | |
| 16 Designated Substances Report | | | |
| 16 a Section 01 14 25 - Designated Substances Report is included. | | | |
| 17 Subsurface Investigation Reports | | | |
| 17a Subsurface Investigation Reports are included in Division 31. | | | |
| 18 Experience and qualifications | | | |
| 18a Experience and qualification requirements do not appear in the specification sections | | | |
| 19 Pre-qualifications | | | |
| 19a There are no mandatory contractor and/or subcontractor pre-qualification requirements or references to certificates, transcripts or license numbers of a trade or subcontractor being included in the bid. | | | |
| 20 Contracting Issues | | | |
| 20a Contracting issues do not appear in the specifications. | | | |
| 20b Division 00 of the NMS is not used. | | | |
| 21 Quality Issues | | | |
| 21a There are no specification clauses with square brackets “[]” or lines “_” indicating that the document is incomplete or missing information. | | | |

| Item | Verified by: | Comments: | Action By: |
|---|--------------|-----------|------------|
| Drawings: | | | |
| 1 Title Blocks | | | |
| 1a The PWGSC title block is used. | | | |
| 2 Dimensions | | | |
| 2a Dimensions are provided in metric only. | | | |
| 3 Trade Names | | | |
| 3a Trade names are not used. | | | |
| 4 Specification Notes | | | |
| 4a There is no specification type notes. | | | |
| 5 Terminology | | | |
| 5a The term Departmental Representative is used instead of Engineer, PWGSC, Owner, | | | |

| | | | |
|---|--|--|--|
| Consultant or Architect. | | | |
| 5b Notations such as: “verify on site”, “as instructed”, “to match existing”, “example”, “equal to”, “equivalent to” and “to be determined on site by” are not used. | | | |
| 6 Information to be included | | | |
| 6a Architectural and Engineering Drawings have been stamped and signed by the design authority. | | | |
| 6b The project quantity and configuration, dimensions and construction details are included. | | | |
| 6c References to future work and elements not in contract do not appear or are kept to an absolute minimum and clearly marked. | | | |

I confirm that the plans and specifications have been thoroughly reviewed and that the items listed above have been addressed or incorporated. I acknowledge and accept that by signing, I am certifying that all items noted above have been addressed.

Consultant's Representative: _____

Firm name: _____

Signature: _____ Date: _____

APPENDIX 'B' - Sample of Addendum

Last updated April 22, 2008

ADDENDUM No. _____

Project Number: _____

The following changes in the bid documents are effective immediately. This addendum will form part of the contract documents

DRAWINGS

SPEC NOTE: indicate drawing number and title, then list changes or indicate revision number and date, and re-issue drawing with addendum.

- 1 A1 Architectural
 .1

SPECIFICATIONS

SPEC NOTE: indicate section number and title.

- 1 Section 01 00 10 - General Instructions

SPEC NOTE: list all changes (i.e. delete, add or change) by article or paragraph

- .1 Delete article (xx) entirely.
- .2 Refer to paragraph (xx.x) and change ...
- 2 Section 23 05 00 - Common Work Results - Mechanical
- .1 Add new article (x) as follows:

APPENDIX 'C' - Sample of Index

Last updated April 22, 2008

Project No: _____

Index
Page 1 of ____

DRAWINGS AND SPECIFICATIONS

DRAWINGS:

SPEC NOTE: List all Drawings by number and title.

- C-1 Civil
- L-1 Landscaping
- A-1 Architectural
- S-1 Structural
- M-1 Mechanical
- E-1 Electrical

SPECIFICATIONS:

SPEC NOTE: List all Divisions, Sections (by number and title) and number of pages.

| <u>DIVISION</u> | <u>SECTION</u> | NO. OF PAGES |
|-----------------|---|-------------------------|
| DIVISION 01 | 01 00 10 - General Instructions..... |XX |
| | 01 14 25 - Designated Substances Report..... |XX |
| | 01 35 30 - Health and Safety..... |XX |
| DIVISION 23 | 23 xx xx | |
| DIVISION 26 | 26 xx xx | |

APPENDIX 'D'

USER MANUAL ON DIRECTORY STRUCTURE AND NAMING CONVENTION STANDARDS FOR CONSTRUCTION TENDER DOCUMENTS ON CD ROM

Issued by:

Real Property Contracting Directorate

PWGSC

May 2005

Last Updated: June 3, 2008

Version 1.0

PREFACE

The Government of Canada (GoC) has committed to move towards an electronic environment for the majority of the services it offers. This covers the advertisement and distribution of contract opportunities, including construction solicitations. As a result, it is necessary to obtain a copy of construction drawings and specifications (in PDF format **without** password protection) on one or multiple CD-ROM to facilitate for the GoC the transfer of the construction drawings and specifications electronically to the Government Electronic Tendering System (GETS).

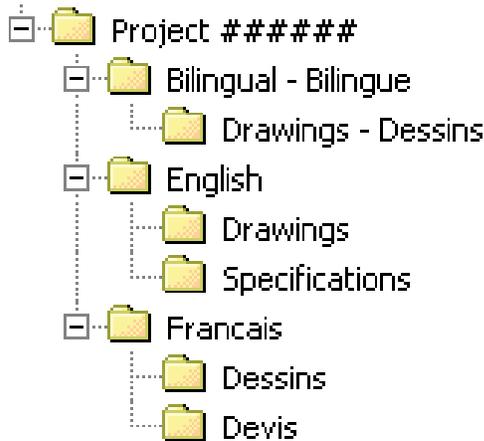
There is therefore a need to adopt a common directory structure and file-naming convention to ensure that the information made available to contractors electronically and in hard (printed) copy is in accordance with the sequence adopted in the real property industries, both for design and construction. This manual defines the standard to be followed by both consultants and print shops at time of formatting and organizing the information, whether drawings and specifications are created by scanning print documents or saved as PDF files from the native software (AutoCAD, NMS Edit, MS-Word, etc...) in which these were created.

It is important to note that the procedure described in this manual is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this manual is to provide a standard for the organization and naming of the electronic files that will be recorded on CD-ROM.

1. DIRECTORY STRUCTURE

1.1 1st, 2nd and 3rd Tier Sub-Folders

Each CD-ROM, whether it is for the original solicitation (tender call) or for an amendment (addendum), must have the applicable elements of the following high-level Directory Structure created:



The following important points are to be noted about the Directory Structure:

- The “*Project #####*” folder is considered the 1st Tier of the Directory Structure where *#####* represents each digit of the Project Number. The Project Number must always be used to name the 1st Tier folder and it is always required. Free text can be added following the Project Number, to include such things as a brief description or the project title;
- The “*Bilingual - Bilingue*”, “*English*” and “*Français*” folders are considered the 2nd Tier of the Directory Structure. The folders of the 2nd Tier **cannot** be given any other names since GETS uses these names for validation purposes. At least one of the “*Bilingual - Bilingue*”, “*English*” and “*Français*” folders is always required, and these must always have one of the applicable sub-folders of the 3rd Tier;
- The “*Drawings - Dessins*”, “*Drawings*”, “*Specifications*”, “*Dessins*” and “*Devis*” folders are considered the 3rd Tier of the Directory Structure. The folders of the 3rd Tier **cannot** be given any other names since GETS also uses these names for validation purposes. There must be always at least one of the applicable 3rd Tier folder in each document.

| |
|---|
| IMPORTANT: The applicable elements of the Directory Structure (1 st , 2 nd and 3 rd Tier folders) are always required and cannot be modified. |
|---|

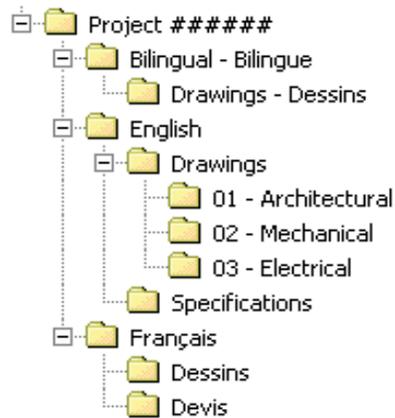
1.2 4th Tier Sub-Folders for Drawings

The “*Drawings – Dessins*”, “*Drawings*” and “*Dessins*” folders must have 4th Tier sub-folders created to reflect the various disciplines of the set of drawings.

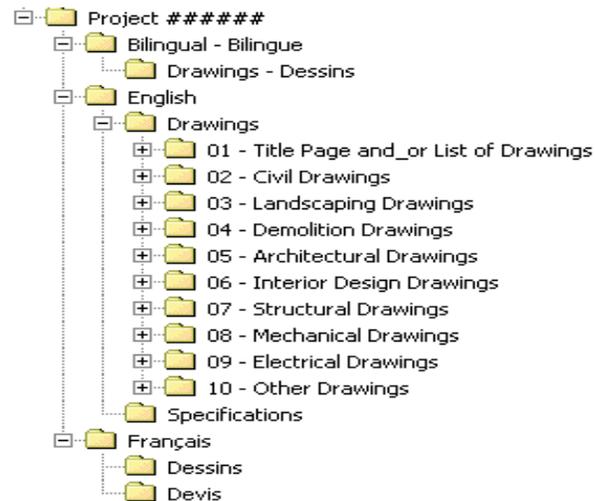
Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “Drawings – Dessins”, “Drawings” and “Dessins” folders.

Note: The first sub-folder must be always reserved for the Title Page and/or the List of Drawings unless the first drawing of the set is an actual numbered discipline drawing.

Examples of 4th Tier sub-folders for drawings:



or



1.2.1 Naming Convention

The 4th Tier sub-folders for drawings must adhere to the following standard naming convention.

For the “Drawings” and “Dessins” folders:

- Y

Where:

= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The title of the folder

Example: 03 – Mechanical

For the “Drawings - Dessins” folder:

- Y - Z

Where:

= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The English title of the folder

Z = The French title of the folder

Example: 04 - Electrical - Électricité

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to a specific discipline. For example, “*Architectural*” could be numbered 05 for a project where there is four other disciplines before “*Architectural*” in the set of drawings or 01 in another project where it’s the first discipline appearing in the set.

It is essential to ensure that the order of the drawings on the CD-ROM be exactly the same as in the hard copy set. GETS will sort each drawing for both screen display and printing as per the following rules:

- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the drawing PDF files in the 01 sub-folder will be printed in alphanumerical order before the drawings in the 02 sub-folder etc...);
- Each drawing PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Drawing A001 will be printed before Drawing A002, Drawing M02 before Drawing M03, etc...).

1.3 4th Tier Sub-Folders for Specifications

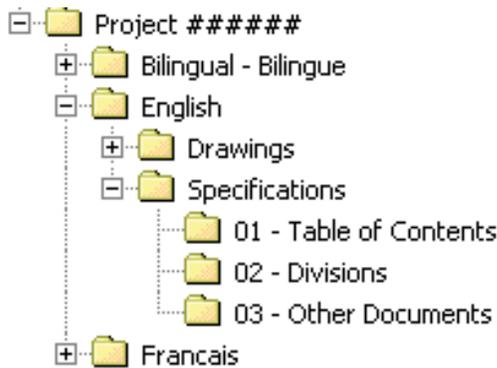
The “*Specifications*” and “*Devis*” folders must have 4th Tier sub-folders created to reflect the various elements of the specifications.

Because the order of appearance of the sub-folders on the screen will also determine the order of printing, it is necessary to start with a number the identification name of the sub-folders in the “Specifications” and “Devis” folders.

Examples of 4th Tier sub-folders for specifications:



or



1.3.1 Naming Convention

The 4th Tier sub-folders for specifications must adhere to the following standard naming convention.

For the “Specifications” and “Devis” folders:

- Y

Where:

= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The title of the folder

Example: 02 – Divisions

It should be noted that the numbering of the 4th Tier sub-folders is for sorting purposes only and is not tied to an element of the specifications.

It is essential to ensure that the order of the elements of the specifications on the CD-ROM be exactly the same as in the hard copy. GETS will sort each element of the specifications for both

screen display and printing as per the following rules:

- The alphanumerical sorting is done on an ascending order;
- The alphanumerical order of the sub-folders determines the order of appearance on the screen as well as the order of printing (as an example: all the specifications PDF files in the 01 sub-folder will be printed, in alphanumerical order before the PDF files in the 02 sub-folder, etc...);
- Each specifications PDF file within each sub-folder will also be sorted alphanumerically. This will determine the order of appearance on the screen as well as the order of printing (i.e. Division 01 will be printed before Division 02, 01 - Appendix A before 02 - Appendix B, etc...).

2. NAMING CONVENTION FOR PDF FILES

Each drawing, specifications division or other document that are part of the tender documents must be converted in PDF format (without password protection) in accordance with the following standard naming convention and each PDF file must be located in the appropriate sub-folder of the Directory Structure.

2.1 Drawings

Each drawing must be a **separate single page** PDF file. The naming convention of each drawing must be:

X### - Y

Where:

X = The letter or letters from the drawing title block (“A” for Architectural or “ID” for Interior Design for example) associated with the discipline

= The drawing number from the drawing title block (one to three digits)

Y = **The drawing name from the drawing title block (for bilingual drawings, the name in both English and French is to appear)**

Example: A001 - First Floor Details

Each drawing that will be located in the appropriate discipline 4th Tier sub-folders must be named with the same letter (“A” for Architectural Drawings for example) and be numbered. The drawing number used to name the PDF file must match as much as possible the drawing number of the actual drawing (the exception being when leading zeros are required).

The following important points about drawings are to be noted:

- The drawing PDF files within each sub-folder are sorted alphanumerically for both displaying and printing. If there are more than 9 drawings in a particular discipline the numbering must use at least two numerical digits (i.e. A01 instead of A1) in order to avoid displaying drawing A10 between A1 and A2. The same rule applies when there are more than 99 drawings per discipline i.e. three digits instead of two must be used for the numbering (for example M003 instead of M03);

- If drawing PDF files are included in the “*Bilingual - Bilingue*” folder, these cannot be included as well in the “*English*” and/or “*Français*” folders;
- If drawings not associated with a particular discipline are not numbered (Title Page or List of Drawings for example), these will be sorted alphabetically. While this does not represent a problem if there is only one drawing in the sub-folder, it could disrupt the order when there are two or more drawings. If the alphabetical order of the drawings name does not represent the order on the hard copy set, the drawings are to be named as per the following standard convention when converted in PDF format to ensure proper display and printing order.

- Y

Where:

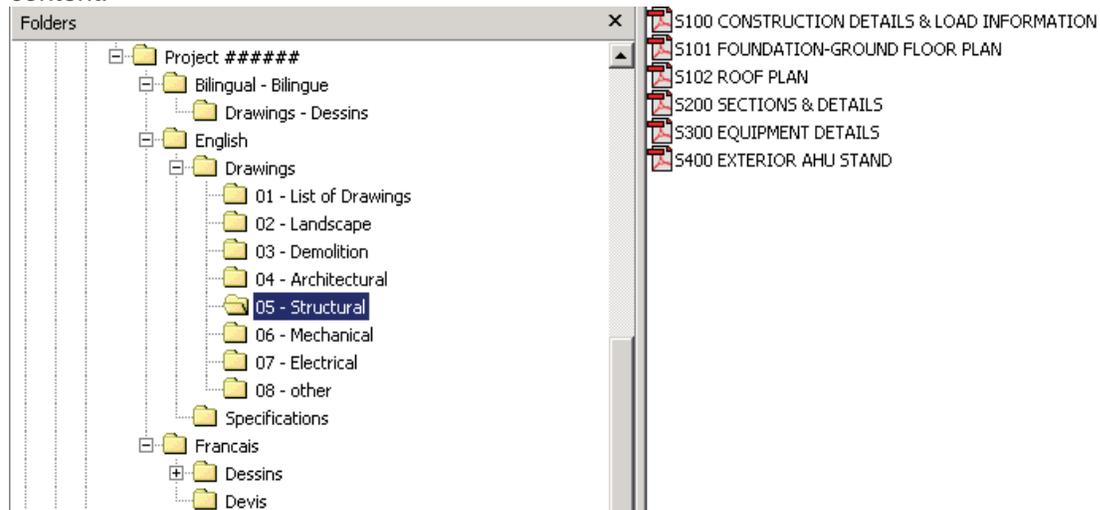
= A two digit number ranging from 01 to 99 (leading zeros must be included)

Y = The name of the drawing

Example: 01 - Title Page
02 - List of Drawings

If numbers are not used in the PDF files name, “*List of Drawings*” will be displayed before “*Title Page*” because “*L*” comes before “*T*” in the alphabet.

Example of a 4th Tier Drawings sub-folder’s content:



2.2. Specifications

Each Specifications Division must be a separate PDF file and all pages contained in each PDF file must have the same physical size (height, width). The Plans and Specifications Index must

also be a separate PDF file. If there are other documents that are part of the Specifications (e.g. Appendix or other) these are to be separate PDF files as well.

2.2.1 Documents other than Specifications Divisions

Because PDF files within the Specifications sub-folders are sorted alphanumerically (in ascending order) for both on screen display and printing order, all files that appear in folders other than the “*Divisions*” sub-folder must be named using a number:

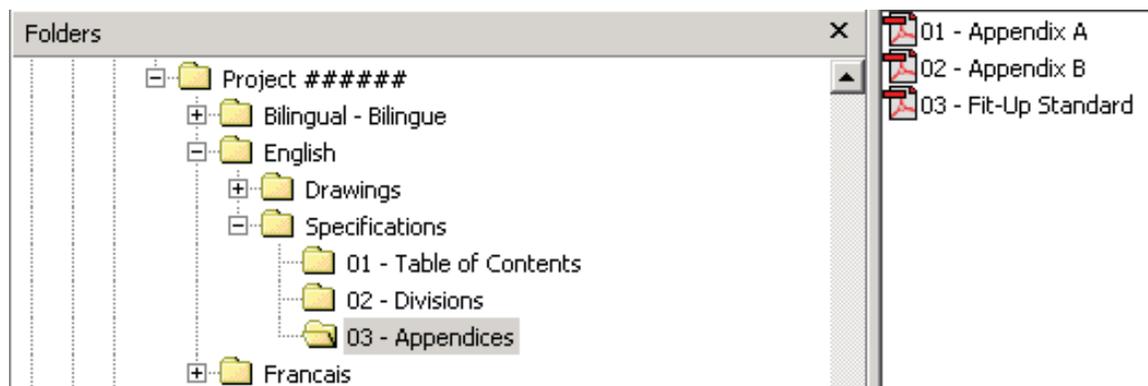
- Y

Where:

= Two digit number ranging from 01 to 99 with leading zeros required
Y = Name of the document

Example: 01 - Plans and Specifications Index

Example of a sub-folder content (sub-folder other than “*Divisions*”):



2.2.2 Specifications Divisions

The Specifications Divisions must be named as follows:

Division ## - Y

Where:

Division ## = The actual word “*Division*” followed by a space and a two digit number ranging from 01 to 99 (with leading zeros required)

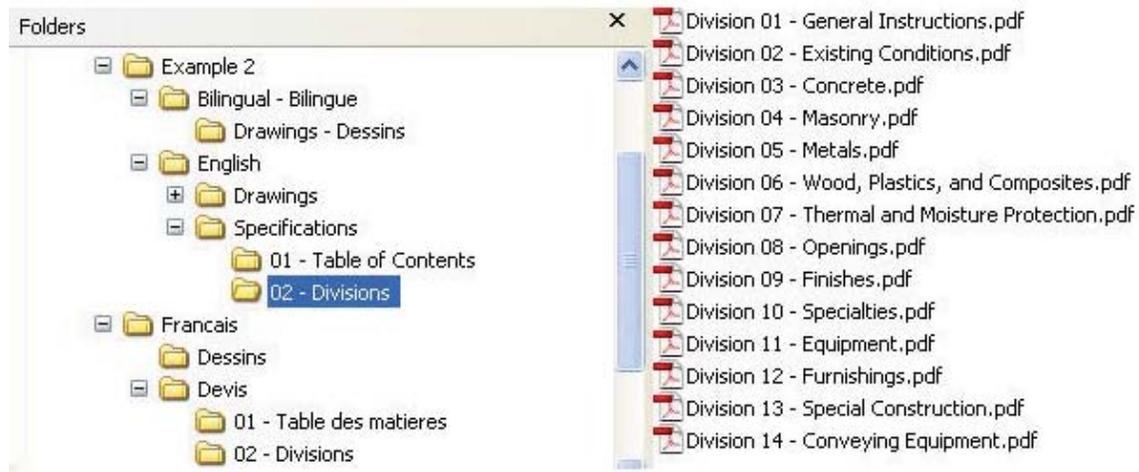
Y = Name of the Specifications Division as per **CSC/CSI MasterFormat™**

Example: Division 05 – Metals

The following important point about specifications is to be noted:

- The Numbering of the Divisions **cannot** be altered from **CSC/CSI MasterFormat™** even if some Divisions are not used in a given project. For example, Division 05 will always remain Division 05 even if Division 04 is not used for a given project.

Example of a “Divisions” sub-folder content:



3. CD-ROM LABEL

Each CD-ROM is to be labeled with the following information:

Project Number / Numéro de projet
Project Title / Titre du projet
Documents for Tender / Documents pour appel d'offres
CD X of/de X

Example:

Project 123456 / Projet 123456
Repair Alexandra Bridge / Réparation du pont Alexandra

Documents for Tender / Documents pour appel d'offres
CD 1 of/de 1

APPENDIX 'E'

BASIC REFERENCE GUIDE ON CONVERTING CONSTRUCTION DRAWINGS INTO PORTABLE DOCUMENT FORMAT (PDF)

Issued by:
Real Property Contracting Directorate
PWGSC

May 2005 Last Updated: May 3, 2005

Version 1.0

PREFACE

Portable Document Format (PDF) is the standard format for documents that are posted on the Government Electronic Tendering System (GETS). There is therefore a need to obtain from architectural and engineering consultants an electronic copy of drawings and specifications in PDF for tendering Government of Canada (GoC) construction projects.

In order to have the highest quality in term of resolution and printing, consultants should to the greatest extent possible have the PDF drawing and specification files derived from the native software in which they were created. Scanning is permissible but only in special circumstances, for example when there is no electronic version of a drawing being included in a construction tender package.

The purpose of this document is to provide basic information on the conversion of Computer Aided Design and Drafting (CADD) drawings in PDF. Creating a PDF file from a CADD drawing is a relatively simple process once all the necessary configurations and settings are in place. It actually should not take any longer than it would take to create a plot file or to send a drawing to a printer. The information in this guide is not intended to cover all technical aspects of the conversion, which can be done using various methods, but rather to highlight important points about the process and file settings. The conversion of specifications is not covered in this basic reference guide since it does not require any special configuration or setting.

The information provided in this basic reference guide is not an indication that consultants are relieved from following the established standards for the production of drawings and specifications. The sole purpose of this guide is to provide basic information on the PDF conversion process bearing in mind that additional detailed technical information is available from the various software manufacturers.

1. PRINTER DRIVERS

Adobe Acrobat provides two different printer drivers that are able to convert CADD drawing into PDF format, Acrobat PDF Writer and Acrobat Distiller. Before creating a PDF file from a CADD drawing, a choice must be made as to which one will be used.

Acrobat PDF Writer is a non-PostScript printer driver that works best with documents that don't contain complex graphics

Acrobat Distiller is a PostScript printer driver that works best with documents that contain PostScript fills, Encapsulated PostScript (EPS) graphics, or other complex elements.

It is recommended that Acrobat Distiller be used to create PDF file of architectural and engineering drawings due to their size and complex graphical nature.

2. PRINTER CONFIGURATION

Before converting a CADD drawing to PDF, an Acrobat printer configuration file for the PDF paper size needs to be created. This function can be done in the CADD software rather than using a custom paper size defined for the Acrobat distiller feature. The recommended method is to add a PostScript Adobe plotter in the CADD software and making the necessary setting in terms of media source and size, scale and orientation. The configuration can then be re-used to simplify the conversion process for future files that use the same page size.

As an alternative, although not recommended, a custom-defined size can be created in Acrobat Distiller in the *properties* menu.

3. CREATING PDF FILES

Once the printer configuration has been done in the CADD software, open up Acrobat Distiller and make the necessary settings in the *preferences* and *job options* sub-menu. Ensure that the page size match the sheet size selected in the CADD software to create the file. Particular settings can be saved under different names for future use.

With the Acrobat Distiller application open, ensure the required sheet size is displayed in the *job options* window. Then it is simply a matter of bringing the CADD file into the Acrobat Distiller creation box.

A progress bar will show during the conversion and the newly converted PDF file should open up and be displayed for verification.

4. PDF FILES SETTINGS

4.1 Security

Adobe Acrobat contains security features that can be used to secure the files by restricting any changes to the files. However, since the files will be posted on GETS and will be used for printing copies, the files **must not** be password protected and **must** allow printing.

4.2 Drawing Orientation

The final PDF drawing files must be displayed on the screen in the same direction that the users are intended to view them. This can be achieved by adjusting the setup of the plotter. If the drawing is not oriented properly after the conversion, it can be rotated manually within Adobe Acrobat.

4.3 Font Type

In order to avoid any problems during the conversion and to minimize the potential for font display errors, the fonts used for the production of construction drawings must be *PostScript or True Type fonts*.

4.4 Resolution

Since the PDF files will be used for printing, it is important that a proper resolution be selected. It is recommended to select 600 dots per inch (dpi).

4.5 Scale

When choosing the Plot scale in Adobe, it is important to choose the 1:1 scale to ensure the integrity of the scale from which the drawings were created in the CADD software.

5. SCANNING

Scanning is not recommended and should be done only when the drawing is not available electronically. When scanning a drawing, it is important that it be done in real size (scale 1:1) to ensure that the scale remains intact in subsequent printing. It is recommended that each scanned drawing be opened and verified to ensure that the resolution, scale and border are of an acceptable quality.

6. FINAL CHECKLIST

When the drawing file has gone through the PDF conversion, it is recommended to open it and verify the following:

- That the sheet size displayed is what was intended to be created (the size is viewable in the lower left corner of the drawing).
- That the orientation of the sheet is correct.
- That the line types, line weights and fonts match the CADD drawing.
- That the PDF file is in black and white.
- That each drawing is a single PDF file.
- That the PDF file is not password protected and printable.

If all the items are verified, the PDF file is useable

7. ADDITIONAL INFORMATION

For more information about the creation of PostScript and EPS files please refer to the User's Guide of the CADD software being used to produce the drawings. For more information about creating PDF file please refer to the Acrobat Distiller User's Guide and/or visit the Adobe Web site at www.adobe.com.

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Amd. No. - N° de la modif.
File No. - N° du dossier
PWA-4-72016

Buyer ID - Id de l'acheteur
pwa115
CCC No./N° CCC - FMS No./N° VME

REQUEST FOR PROPOSAL (RFP)

TABLE OF CONTENTS

The following is intended to clarify the general structure of the whole document.

Front Page

Supplementary Instructions to Proponents (SI)

- SI1 Introduction
- SI2 Proposal Documents
- SI3 Questions or request for clarifications
- SI4 Canada's Trade Agreements
- SI5 CERTIFICATIONS**
- SI6 Optional Site Visit
- SI7 Web Sites

Terms, Conditions and Clauses

Agreement

Supplementary Conditions (SC)

SC1 Federal Contractors Program for Employment Equity - Default by
the Consultant

SC2 Optional Services

Agreement Particulars

Team Identification Format (Appendix A)

Declaration/Certifications Form (Appendix B)

Price Proposal Form (Appendix C)

Doing Business with National Capital Area (Appendix D)

Submission Requirements and Evaluation (SRE)

Project Brief / Terms of Reference

Description of Project (PD)

Description of Services - Required Services (RS)

Description of Services - Additional Services (AS)

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pwa115
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SUPPLEMENTARY INSTRUCTIONS TO PROPONENTS (SI)

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.
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 (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

2. The following are the proposal documents:
 - (a) Supplementary Instructions to Proponents (SI); R1410T (2014-06-26), General Instructions (GI) – Architectural and/or Engineering Services – Request for Proposal; Submission Requirements and Evaluation (SRE);
 - (b) the general terms, conditions and clauses, as amended, identified in the Agreement clause;
 - (c) Project Brief / Terms of Reference;
 - (d) the document entitled "Doing Business with National Capital Area";

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- (d) the document entitled "General Procedures and Standards";
 - (e) any amendment to the solicitation document issued prior to the date set for receipt of proposals; and
 - (f) 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 seven (7) 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) and the Agreement on Internal Trade (AIT).

SI5 CERTIFICATIONS

1. Integrity Provisions - Associated Information

By submitting a proposal, the Proponent certifies that the Proponent and its Affiliates are in compliance with the provisions as stated in Section G11 Integrity Provisions - Proposal of R1410T (2014-06-26) General Instructions (GI) – Architectural and/or Engineering Services Request for Proposal. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

2. Federal Contractors Program for Employment Equity - Proposal Certification

By submitting a proposal, the Proponent certifies that the Proponent, and any of the Proponent's members if the Proponent is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited

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Eligibility to Bid" list

(http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

Canada will have the right to declare a proposal non-responsive if the Proponent, or any member of the Proponent if the Proponent is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

Canada will also have the right to terminate the Agreement for default if a Consultant, or any member of the Consultant if the Consultant is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Agreement.

The Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification (see Appendix B - Declaration/Certifications Form), before contract award. If the Proponent is a Joint Venture, the Proponent must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

SI6 OPTIONAL SITE VISIT

It is recommended that the Proponent or a representative of the Proponent visit the Work site.

SI7 - WEBSITES

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-lois.justice.gc.ca/eng/acts/E-5.401/index.html>

Federal Contractors Program (FCP)

http://www.labour.gc.ca/eng/standards_equity/eq/emp/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>

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Consent to a Criminal Record Verification (PWGSC-TPSGC 229 form)
<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

Lobbying Act
<http://laws-lois.justice.gc.ca/eng/acts/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>

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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 (2014-06-26), General Condition (GC) 1 - General Provisions – Architectural and/or Engineering Services
 - R1215D (2014-06-26), General Condition (GC) 2 - Administration of the Contract
 - R1220D (2011-05-16), General Condition (GC) 3 - Consultant Services
 - R1225D (2012-07-16), General Condition (GC) 4 - Intellectual Property
 - R1230D (2012-07-16), General Condition (GC) 5 - Terms of Payment
 - R1235D (2011-05-16), General Condition (GC) 6 - Changes
 - R1240D (2011-05-16), General Condition (GC) 7 - Taking the Services Out of the Consultant's Hands, Suspension or Termination
 - R1245D (2012-07-16), General Condition (GC) 8 - Dispute Resolution
 - R1250D (2012-07-16), General Condition (GC) 9 - Indemnification and InsuranceSupplementary Conditions
Agreement Particulars
 - (c) Project Brief / Terms of Reference;
 - (d) the document entitled "Doing Business with National Capital Area";
 - (e) any amendment to the solicitation document incorporated in the Agreement before the date of the Agreement;
 - (f) 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: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>

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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 / Terms of Reference;
 - (h) the document entitled "Doing Business with National Capital Area";
 - (i) the proposal.

SUPPLEMENTARY CONDITIONS (SC)

SC1 FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - DEFAULT BY THE CONSULTANT

The Consultant understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Consultant and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the contract. If the AIEE becomes invalid, the name of the Consultant will be added to the "FCP Limited Eligibility to Bid" list. The imposition of such a sanction by ESDC will constitute the Consultant in default as per the terms of the contract.

SC2 OPTIONAL SERVICES

The Consultant grants to Canada the irrevocable option to acquire the goods, services or both described at Project Brief of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

AGREEMENT PARTICULARS

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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.

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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 – Civil/Structural Engineer):

Firm or Joint Venture Name:

.....

.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

.....

.....

.....

.....

.....

II. Key Sub Consultants / Specialists:

Mechanical Engineer

Firm Name:

.....

.....

Key Individuals and provincial professional licensing status and/or professional accreditation:

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Electrical Engineer

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

Key Individuals and provincial professional licensing status and/or professional accreditation:

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Geotechnical Engineer

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

Key Individuals and provincial professional licensing status and/or professional accreditation:

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Cost Specialist

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

Key Individuals and provincial professional licensing status and/or professional accreditation:

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APPENDIX B - DECLARATION/CERTIFICATIONS FORM

Project Title:

Name of Proponent:

Street Address:

Mailing Address:

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 for Employment Equity - Certification

I, the Proponent, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a proposal non-responsive, or will declare a consultant in default, if a certification is found to be untrue, whether during the proposal evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Proponent's certifications. Failure to comply with any request or requirement imposed by Canada may render the proposal non-responsive or constitute a default under the contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC)-Labour's website.

Date: _____ (YY/MM/DD) (If left blank, the date will be deemed to be the bid closing date.)

Complete both A and B.

A. Check only one of the following:

- A1. The Proponent certifies having no work force in Canada.
- A2. The Proponent certifies being a public sector employer.
- A3. The Proponent certifies being a federally regulated employer being subject to the Employment Equity Act.
- A4. The Proponent certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).

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

A5. The Proponent has a combined work force in Canada of 100 or more employees;
and

() A5.1. The Proponent certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

OR

() A5.2. The Proponent certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

() B1. The Proponent is not a Joint Venture.

OR

() B2. The Proponent is a Joint Venture and each member of the Joint Venture must provide the Contracting Authority with a completed Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the General Instructions)

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

Former Public Servant (FPS) - Certification

Contracts awarded to 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 awarded to FPS, proponents must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of proposals is completed, Canada will inform the Proponent of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the proposal non-responsive.

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 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*

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of *Parliament Retiring Allowances Act*, R.S., 1985, c.M-5, and that portion of pension payable to the *Canada Pension Plan Act*, R.S., 1985, c.C-8.

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

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Proponent a FPS in receipt of a pension?

YES () NO ()

If so, the Proponent must provide the following information, for all FPS in receipt of a pension, as applicable:

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

By providing this information, proponents agree that the successful Proponent's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

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 adjustment 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 Applicable Taxes.

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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 inform the Proponent of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the proposal non-responsive.

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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 Applicable Taxes.

PROponents SHALL NOT ALTER THIS FORM

Project Title: Replacement of St. Peter's Canal Swing Bridge

Name of Proponent:

The following will form part of the evaluation process:

REQUIRED SERVICES

Fixed Fee (R1230D (2012-07-16), GC 5 - Terms of Payment)

NOTE: Fees for RS8 Risk Management and AS1Functional Programming are to be included in the Fees to deliver RS1-RS7.

| SERVICES | FIXED FEE |
|---|----------------|
| RS1 Analysis of Project Requirements (including all travel) | \$..... |
| RS2 Design Concept (includes class C estimates for both Concept options and for 1-lane and 2-lane bridge structures and all travel) | <u>\$.....</u> |
| MAXIMUM FIXED FEES (REQUIRED) | \$..... |

OPTIONAL SERVICES

| SERVICES | FIXED FEE |
|---|-----------|
| RS3 Design Development | \$..... |
| RS4 Construction Documents | \$..... |
| RS5 Tender Call, Bid Evaluation & Construction Contract Award | \$..... |
| RS6 Construction and Contract Administration | \$..... |

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RS7 Commissioning the Facility \$.....

MAXIMUM FIXED FEES (OPTIONAL) \$.....

APPENDIX C - PRICE PROPOSAL FORM (CONT'D)

ADDITIONAL SERVICES (Optional)

Time Based Fees (R1230D (2012-07-16), GC 5 - Terms of Payment)

| AS2 – Resident Site Services During Construction | ESTIMATED HOURS Column A | HOURLY RATES** Column B | TIME BASED FEE Columns AxB |
|---|---|--|---|
| Resident Supervisor Mid Sept 2016 to Mid June 2017 | 1600 (estimated 200 days x 8hr/day) | \$..... | \$..... |
| | | | |
| MAXIMUM TIME BASED FEES | | | \$..... |

*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 COST OF SERVICES FOR PROPOSAL EVALUATION PURPOSES

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

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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.

OTHER ADDITIONAL SERVICES

DISBURSEMENTS

At cost without allowance for mark-up or profit, supported by invoices/receipts - see clause R1230D (2012-07-16), GC 5 - Terms of Payment, section GC5.12

Disbursements:

Testing during construction, geotechnical drilling
& testing, traffic control, surveying, diving inspection \$ 75,000.00

(Travel and expenses for resident supervision included in time-based rate)

MAXIMUM AMOUNT FOR DISBURSEMENTS \$ 75,000.00

END OF PRICE PROPOSAL FORM

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SUBMISSION REQUIREMENTS AND EVALUATION

- SRE 1 General Information
- SRE 2 Proposal Requirements
- SRE 3 Submission Requirements and Evaluation
- SRE 4 Price of Services
- SRE 5 Total Score
- SRE 6 Submission Requirements - Checklist

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SUBMISSION REQUIREMENTS AND EVALUATION

SRE 1 GENERAL INFORMATION

1.1 Reference to the Selection Procedure

An 'Overview of the Selection Procedure can be found in R1410T General Instructions to Proponents (GI3).

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

2.1 Requirement for Proposal Format

The following proposal format information should be implemented when preparing the proposal.

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

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 thirty (30) pages.

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

- Covering letter

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-
- Consultant Team Identification (Appendix A)
 - Declaration/Certifications Form (Appendix B)
 - Code of Conduct Certifications
 - Front page of the RFP
 - Front page of revision(s) to the RFP
 - Price Proposal Form (Appendix C)

Consequence of non-compliance: any pages which extend beyond the above page limitation and 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

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.

3.1.1 Licensing, Certification or Authorization

The proponent shall be a Civil/Structural Engineer licensed, 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 in the province of Nova Scotia.

3.1.2 Consultant Team Identification

The consultant team to be identified must include the following:

| | |
|-----------------------------------|----------------------------|
| Proponent (prime consultant) | Civil Structural Engineer |
| Key Sub-consultants / Specialists | Mechanical Engineer |
| | Electrical Engineer |
| | Geotechnical Engineer |
| | Cost Estimating Specialist |

Information required - name of firm, key personnel to be assigned to the project. For the prime consultant indicate current license and/or how you intend to meet the provincial or territorial licensing requirements. 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, G19 Limitation of Submissions).

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An example of an acceptable format (typical) for submission of the team identification information is provided in Appendix A.

3.1.3 Declaration/Certifications Form

Proponents must complete, sign and submit the following:

- Appendix B, Declaration/Certifications Form as required.

3.1.4 Integrity Provisions - Associated Information

Proponents who are incorporated, including those submitting proposals as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Proponent. Proponents submitting proposals as sole proprietorship, including those submitting proposals as a joint venture, must provide the name of the owner. Proponents submitting proposals as societies, firms, or partnerships do not need to provide lists of names. If the required names have not been received by the time the evaluation of proposals is completed, Canada will inform the Proponent of a time frame within which to provide the information. Failure to provide the names within the time frame specified will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

3.2 RATED REQUIREMENTS

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 2 projects undertaken within the last 6 years. Joint venture submissions are not to exceed the maximum number of projects. Only the first 2 projects listed in sequence will receive consideration and any others will receive none as though not included.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management - i.e. contract price & final construction cost - explain variation

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- project schedule control and management - i.e. initial schedule and revised schedule - explain variation
- client references - name, address, phone and fax of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

The Proponent (as defined in R1410T General Instructions to Proponents, GI2 Definitions) must possess the knowledge on the above projects. Past project experience from entities other than the Proponent will not be considered in the evaluation unless these entities form part of a joint venture Proponent.

Please indicate those projects which were carried out in joint venture and the responsibilities of each of the involved entities in each project.

3.2.2 Achievements of Key Sub-consultants and 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 multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

Select a maximum of 2 projects undertaken within the last 6 years per key sub consultant or specialist. Only the first 2 projects listed in sequence (per key subconsultant or specialist) will receive consideration and any others will receive none as though not included.

Information that should be supplied:

- clearly indicate how this project is comparable/relevant to the requested project.
- brief project description and intent. Narratives should include a discussion of design philosophy / approach to meet the intent, design challenges and resolutions.
- budget control and management
- project schedule control and management
- client references - name, address, phone and fax of client contact at working level - references may be checked
- names of key personnel responsible for project delivery
- awards received

3.2.3 Achievements of Key Personnel on Projects

Describe the experience and performance of key personnel to be assigned to this project regardless of their past association with the current proponent firm. This is the

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

Information that should be supplied for each key personnel:

- professional accreditation
- accomplishments/achievements/awards
- relevant experience, expertise, number of years experience
- role, responsibility and degree of involvement of individual in past projects

3.2.4 Understanding of the Project:

The proponent should demonstrate understanding of the goals of the project, the functional/technical requirements, the constraints and the issues that will shape the end product.

Information that should be supplied:

- The functional and technical requirements
- Broader goals (federal image, sustainable development, sensitivities)
- The relationship between this commission and any earlier studies completed for PWGSC
- Significant issues, challenges and constraints
- Project schedule and cost. Review schedule and cost information and assess risk management elements that may affect the project
- The Client User's philosophies and values

3.2.5 Scope of Services:

The proponent should demonstrate capability to perform the services and meet project challenges and to provide a plan of action.

Information that should be supplied:

- Scope of Services - detailed list of services
- Work Plan - detailed breakdown of work tasks and deliverables
- Project schedule - proposed major milestone schedule
- Risk management strategy

3.2.6 Management of Services:

The Proponent should describe how he /she proposes to perform the services and meet the constraints; how the services will be managed to ensure continuing and consistent

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control as well as production and communication efficiency; how the team will be organized and how it will fit in the existing structure of the firms; to describe how the team will be managed. The proponent is also to identify sub-consultant disciplines and specialists required to complete the consultant team.

If the Proponent proposes to provide multi-disciplinary services which might otherwise be performed by a sub-consultant, this should be reflected here.

Information that should be supplied:

- Confirm the makeup of the full project team including the names of the consultant sub-consultants and specialists personnel and their role on the project.
- Organization chart with position titles and names (Consultant team). Joint Venture business plan, team structure and responsibilities, if applicable
- What back-up will be committed
- Profiles of the key positions (specific assignments and responsibilities)
- Outline of an action plan of the services with implementation strategies and sequence of main activities
- Reporting relationships
- Communication strategies
- Response time: demonstrate how the response time requirements will be met

3.2.7 Design Philosophy / Approach / Methodology

The proponent should elaborate on aspects of the project considered to be a major challenge which will illustrate design philosophy / approach / methodology. This is the opportunity for the Proponent to state the overall design philosophy of the team as well as their approach of resolving design issues and in particular to focus on the unique aspects of the current project.

Information that should be supplied:

- Design Philosophy / Approach / Methodology
- Describe the major challenges and how your team approach will be applied to those particular challenges.

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:

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| Criterion | Weight Factor | Rating | Weighted Rating |
|---|----------------------|---------------|------------------------|
| Achievements of Proponent | 2.0 | 0 - 10 | 0 - 20 |
| Achievements of Key Sub-consultants / Specialists | 2.0 | 0 - 10 | 0 - 20 |
| Achievements of Key Personnel on Projects | 3.0 | 0 - 10 | 0 - 30 |
| Understanding of the Project | 0.5 | 0 - 10 | 0 - 5 |
| Scope of Services | 0.5 | 0 - 10 | 0 - 5 |
| Management of Services | 0.5 | 0 - 10 | 0 - 5 |
| Design Philosophy / Approach / Methodology | 1.5 | 0 - 10 | 0 - 15 |
| Technical Rating | 10.0 | | 0 - 100 |

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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:

| | 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 an excellent understanding of the requirements. |
| | Weaknesses cannot be corrected | Generally doubtful that weaknesses can be corrected | Weaknesses can be corrected | No significant weaknesses | No apparent weaknesses |
| | Proponent do not possess qualifications and experience | Proponent lacks qualifications and experience | Proponent has an acceptable level of 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 most 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 requirement | Sample projects generally not related to this requirement | Sample projects generally related to this requirement | Sample projects directly related to this requirement | Leads in sample projects directly related to this requirement |
| | Extremely poor, insufficient to meet performance requirements | Little capability to meet performance requirements | Acceptable capability, should ensure adequate results | Satisfactory capability, should ensure effective results | Superior capability, should ensure very effective results |

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To be considered further, proponents **must** achieve a minimum Technical 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 all the price proposals together 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 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.

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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, GI16 Submission of Proposal. Proponents may choose to introduce their submissions with a cover letter.

- Team Identification - see typical format in Appendix A
- Declaration/Certifications Form - completed and signed - form provided in Appendix B
- Integrity Provisions - Associated Information - list of directors/owners
- Proposal - one (1) original plus 5 copies
- Front page of RFP
- Front page(s) of any solicitation amendment

In a separate envelope:

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