



**Feasibility Study, Preliminary Plans and  
Specifications for the Replacement  
of Swing Bridge and Longbird Bridge**

Bermuda

**Addenda #1**

Date: February 17, 2017

Project No. 44-28-75



Dear Bidders

The following addendum supersedes information contained in the Request for Proposals for the Feasibility Study, Preliminary Plans and Specifications for the Replacement of Swing Bridge and Longbird Bridge dated February 10, 2017. This Addendum forms part of the RFP documents and is subject to all of the conditions set out in the contract conditions.

This Addendum # 1 contains 14 pages.

Addendum #1

**1. Annex A - Scope of Work**

- 1.1. Replace the entire February 8, 2017 “Scope of Work” document with the attached February 17, 2017 “Scope of Work” document.

**2. Annex B – Form of Proposal**

- 2.1. Replace the entire February 8, 2017 “Fixed Price Schedule” with the attached February 17, 2017 “Fixed Price Schedule”.

**3. Annex D - Sample Service Contract**

- 3.1. Two copies of the Client/Consultant Model Services Agreement PARTICULAR CONDITIONS have been included in Annex D of the Tender Package by mistake. Please delete the second copy of the PARTICULAR CONDITIONS that have the “Sample” watermark and only use the first set of PARTICULAR CONDITIONS that are numbered “Page I 1” to “Page I 15”.

**4. Instructions to Bidders**

- 4.1. Per clause 2.3 Amendment of Proposal Documents a request for an extension of time has been received and granted.
- 4.2. Replace clause “1.2 Time” with the following:
  - .1 The Proposals submission must be delivered no later than **Wednesday, March 15, 2017 at 3:00 pm AST**.
  - .2 Late submission will not be considered.
  - .3 The Key dates for the Procurement Process are as follows:

Activity	Date
Request for Proposals issued	February 10, 2017
Deadline for Written Clarifications and Questions from Bidders (Clause 2.2.2)	March 8, 2017
Government responding and issuing Q and A, Addenda, if applicable, (Clause 2.2.3)	March 13, 2017
Deadline for Proposals Submissions (Clause 1.2.1)	March 15, 2017, 3:00 PM AST
Evaluation of Proposals (Part 5)	March 16, 2017 to March 24, 2017
Contract Award (Part 6)	May 1, 2017 (estimated)
Completion of Work by successful bidder	May 1, 2018 (estimated)



- .4 The Government may change the timeline for the procurement process without prior notice, and will notify bidders in writing promptly of any change by addenda, that will be posted on [www.gov.bm](http://www.gov.bm) procurement notices website.



## FIXED PRICE SCHEDULE

### CONTRACT PRICE BREAKDOWN

All prices (in Bermuda dollars) are to be all inclusive of all other associated works as shown on the Contract Documents, materials, related accessories, storage, transport, assembly, placement, overhead and profit. These rates may be used for determining additions and deletions from the contract sum and for interim payment valuation.

<u>PHASE</u>	<u>DESCRIPTION</u>	<u>QUANTITY</u>	<u>SUM</u>
I	Presentation of three options for each Bridge	1	\$
II	Feasibility study fee if a <u>fixed</u> span option for Swing Bridge is preferred	Part A	\$
II	Feasibility study fee if a <u>movable</u> span option for Swing Bridge is preferred	Part B	\$
II	Feasibility study fee if a <u>fixed</u> span option for Longbird Bridge is preferred	Part A	\$
II	Feasibility study fee if a <u>movable</u> span option for Longbird Bridge is preferred	Part B	\$
III	100% complete detailed design contract documents for Swing Bridge	Fee as a Percentage of the Estimated Construction Cost	_____ %
III	100% complete detailed design contract documents for Longbird Bridge	Fee as a Percentage of the Estimated Construction Cost	_____ %

**NOTE:** All work detailed on the Contract Documents shall be covered completely by the Total Lump Sum Price. Individual lump sum items are all-inclusive. If a specific task is not identified separately in the above list, the Contractor shall assume that it is included as part of another related listed item or items, and shall base his lump sum amounts on this assumption.



GOVERNMENT OF BERMUDA

Ministry of Public Works

Works and Engineering

Addenda #1 – February 17, 2017

Annex A – Scope of Work

Project No. 44-28-75

Feasibility Study, Preliminary Plans and Specifications for  
the Replacement of Swing Bridge and Longbird Bridge

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**Feasibility Study, Preliminary Plans and  
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Bermuda

**Annex A  
Scope of Work**

**Addenda #1**

Date: February 17, 2017

Project No. 44-28-75



## Part 1 General

### 1.1 Background

- .1 The Government of Bermuda is mandated to maintain safe and reliable infrastructure for the residents and visitors to the Island. Two existing bridges, located in the Eastern End of the Island, Swing Bridge and Longbird Bridge will come to the end of their useful lives in the near future. To this end it is proposed to build two new bridges to replace these aging structures.
- .2 Swing Bridge provides access, both vehicle and marine traffic, to the historic town of St. George's, that is the oldest continuously-inhabited English town in the Americas. The current bridge was constructed in the early 1960's.
- .3 Longbird Bridge completes the western link from the Causeway to the L.F. Wade International Airport and it is known as the official entrance to Bermuda. The original bridge was built by the US military in the 1950's and it was replaced by two Mabey Compact 200 Panel bridges in 2007. These temporary bridges were located on an offset alignment to the original bridge and the Causeway. The new Longbird Bridge will be located on the original alignment.
- .4 The Government of Bermuda wants these new bridges to be architectural landmarks to Bermuda and constructed at a fair and competitive price.

### 1.2 Objective

- .1 The objective of this request for proposal is to provide the Government of Bermuda three well defined options for each of the two crossings, then to narrow the options down to one preferred option for each bridge, and then to prepare detailed designs, plans and specifications that are 100% complete and ready to be issued for tender.

## Part 2 Approach and Methodology

- .1 The work is to be broken down into three Phases.
- .2 Phase I: Presentation of Three Options for Each Bridge
  - .1 Phase I of this request for proposal is to obtain a feasibility study to identify three options for each new bridge. These options will be vetted and a single preferred choice will be made for each bridge. Options are to include provisions for marine traffic using either fixed or movable bridges.
  - .2 Phase I will include a Class C Indicative estimate for each of the six options.
  - .3 Definition of a Class C Indicative estimate:
    - .1 Referring to Mr. Anthony L. Huxley in the June 2003 edition of *Construction Economist*, a Class C Indicative estimate is considered to be "based on a full description of the preferred option, construction/design experience, and market conditions. This estimate should be sufficient for making the correct investment decision and obtaining preliminary project approval."



- .3 Phase II: Feasibility Study of the Preferred Option for Each Bridge
- .1 Phase II of this request for proposal will be to advance the preferred option for each bridge from Phase I through the conceptual designs phase to include general arrangements, vertical and horizontal alignments, marine clearances, substructure and pier arrangements, superstructure structural elements, elevations and cross sections.
- .2 This work will also include road and marine traffic controls, mechanical, electrical, and control designs, if a moveable bridge option is selected.
- .3 This phase will also include proposed construction methods, detailed design and construction schedules, and a Class B Substantive estimate for construction cost and yearly maintenance cost.
- .4 Definition of a Class B Substantive estimate:
- .1 Referring to Mr. Anthony L. Huxley in the June 2003 edition of *Construction Economist*, a Class B Substantive estimate is considered to be “based on design/preliminary drawings and outline specifications for the project, which include the designs for all major systems and subsystems, as well as the results of all site/installation investigations, this estimate should provide for the establishment of realistic cost objectives and be sufficient to obtain effective project approval.”
- .5 In addition to the proposed new works this Phase will include proposed schemes for the removal of the existing structures and for maintaining traffic flows during demolition and construction.
- .4 Phase III: 100% Complete Detailed Design Contract Documents for Each Bridge
- .1 Phase III will develop the Phase II work on to prepare detailed designs, plans and specifications that are 100% complete and ready to be issued for tender. This phase will include the full design for the bridge alignments, structural design, mechanical design, electrical design, control design, road and marine traffic control design, bridge operation procedures, maintenance procedures and any other design items required for the construction and operation of the bridge including all plans and specifications.
- .2 This phase will also include proposed construction methods, detailed design and construction schedules, and a Class A Estimate for construction cost and yearly maintenance cost.
- .3 Definition of a Class A Estimate:
- .1 Referring to Mr. Anthony L. Huxley in the June 2003 edition of *Construction Economist*, a Class A Estimate is considered to be “based on complete working drawings and specifications, and prepared prior to calling competitive tenders, this estimate should be sufficient to allow a detailed reconciliation/negotiation with any contractors proffered tender.”



## Part 3 Description and Scope of Work

### 3.1 Phase I: Presentation of Three Options for Each Bridge

1. Review existing drawings, studies, and reports using the preliminary list in Annex C – Drawings and Reference Documents.
2. An initial site visit and technical meetings with Ministry staff to discuss basic design criteria, loads, architectural requirements, design life span, maintenance concerns, operational procedures and other items as required.
3. Provide a proposed geotechnical site investigation and requirements needed for each option.
4. Design life span : 75 years
5. Provide a brief description of mechanical, electrical and control components and systems for each movable bridge option.
6. Provide a discussion on the choice of construction materials considering long term maintenance in a highly corrosive environment.
7. Wind and wave related design.
8. Architectural drawings illustrating a minimum of four views for each option.
9. Review local Bermuda costing issues, i.e. materials, labour, bridge operating and maintenance costs.
10. Prepare and present a Class C Indicative Cost Estimate for each of the six options.
11. Summarize findings in a draft report.
12. Review findings with Ministry.
13. Issue Phase I final report.

### 3.2 Phase II: Feasibility Study of the Preferred Option for Each Bridge

1. Provide conceptual design for both preferred bridge options.
2. Complete a mechanical/electrical/control conceptual design for both bridges, as needed if a movable bridge option is selected.





3. Review conceptual construction methods.
4. Prepare a detailed schedule of construction.
5. Provide a method statement for the removal of the existing superstructures and substructures.
6. Prepare a Class B Substantive estimate for construction and yearly maintenance costs.
7. Propose a wind model for bridges, as needed.
8. Prepare a risk assessment.
9. Summarize findings and recommendations in a draft report.
10. Review findings with Ministry.
11. Participate in a public presentation detailing the design process, the Phase I options, the selection of the preferred option and the results of Phase II.
12. Issue Phase II final report.

### **3.3 Phase III: 100% Complete Detailed Design Contract Documents for Each Bridge**

1. Continue technical/costing development of the preferred options.
2. Provide construction drawings for bridge, 100% complete and ready for tender.
3. Provide construction specifications, 100% complete and ready for tender.
4. Provide construction drawings of operational systems including mechanical, electrical and control systems.
5. Provide a proposed method statement for construction, including a risk assessment and a discussion on environmental impact and suggested environmental studies.
6. Develop conceptual construction and staging methods.
7. Further develop accuracy of costing details for repair, replacement items, and life cycle costing.
8. Provide details of how and why the bridge will be operationally reliable for 30 years using the proposed maintenance program.



9. Issue draft documents for the Phase III.
10. Review findings with Ministry.
11. Issue Phase III final report.

#### Part 4 Schedule

- .1 The Contract Award date will be determined after the proposals are evaluated and approved by the Government.
- .2 The Consultant shall issue the following documents, using his best efforts, according to the following schedule:

<u>Document</u>	<u>Date to be Issued</u>
Phase I, Draft Report	Contract Award date + 90 days
Phase I, Final Report	Contract Award date + 120 days
Phase II, Draft Report	Contract Award date + 180 days
Phase II, Final Report	Contract Award date + 210 days
Phase III, Draft Report	Contract Award date + 330 days
Phase III, Final Report	Contract Award date + 365 days

- .3 After the contract award date is known provide a detailed schedule for the work including submittal date milestones and decision response milestones that incorporate the above requirements.

#### Part 5 Deliverables

- .1 Phase I Deliverables
  - .1 Three bridge options for Swing Bridge, including movable and fixed bridge options
  - .2 Three bridge options for Longbird Bridge, including movable and fixed bridge options
  - .3 Architectural drawings illustrating the six options with a minimum of four views per option
  - .4 A Class C Indicative Estimate for each of the six options



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- .5 A presentation to the Ministry staff detailing the six options
  - .6 A draft report that summarizes the six options, detailing their suitability for these crossings and the cost estimates
  - .7 A final report that summarizes the six options, detailing their suitability for these crossings and the cost estimates and incorporates comments from Ministry staff, as appropriate
- .2 Phase II Deliverables
- .1 Architectural drawings illustrating both preferred bridge options including photographic backgrounds of the water crossings and the surrounding area suitable for public presentations
  - .2 General arrangement drawings including vertical and horizontal alignments, marine clearances, substructure and pier arrangements, superstructure structural elements, elevations and cross sections for both bridges
  - .3 A Class B Substantive Estimate for both bridges
  - .4 A presentation to the Ministry staff detailing both bridges
  - .5 A public presentation detailing the design process, the Phase I options, the selection of the preferred option and the results of Phase II
  - .8 A draft report that summarizes both bridges, detailing their suitability for these crossings and the cost estimates
  - .9 A final report that incorporates comments from Ministry staff, as appropriate
- .3 Phase III Deliverables
- .1 The 100% complete design for both bridges
  - .2 Design notes and calculations suitable for third party verification
  - .3 Construction drawings in AutoCAD format including PDF files of all drawings
  - .4 Technical specifications in Word format including PDF files of all specifications
  - .5 A construction schedule
  - .6 Class A Estimates for each bridge
  - .7 A presentation to the Ministry staff detailing the finished tender ready package
  - .8 A draft report that summarizes the detailed design and specifications, a detailed summary of the proposed construction and operation of the bridges
  - .9 A final report that incorporates comments from Ministry staff, as appropriate



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## Part 6 Approach and Methodology

- .1 The Consultant shall provide a detailed description of their proposed approach to the work and the methodology they intend to use.
- .2 The methodology is expected to include a site visit to become familiar with the locations and conditions of the proposed bridge sites; a review of all of the available technical information for the existing structures, drawings, topographical maps, geotechnical investigations and reports; a discussion on the proposed current and proposed bridge design loadings, including allowances for the future; a discussion on bridge operation and maintenance.

## Part 7 Schedule of Fees

- .1 The Fixed Fee Schedule, per Annex B, is to be used for the tender pricing.
- .2 The Fixed Fee for Phase I is for the six bridge options.
- .3 The Fixed Fee for Phase II is broken into two parts. If a fixed bridge is chosen as the preferred option to develop then the Part A Fixed Fee will be used, likewise, if a movable bridge is the preferred option to develop then Part B Fixed Fee will be used.
- .4 The Fixed Fee for Phase III is broken into two parts. If a fixed bridge is chosen as the preferred option to develop then the Part A Fixed Fee will be used, likewise, if a movable bridge is the preferred option to develop then Part B Fixed Fee will be used.
- .5 The Unit Rate Schedule will be used as needed per the description in the table.

## Part 8 Resource Requirements and Qualifications

- .1 The technical ability and past experience of the design team with similar bridge projects is of paramount importance to the success of this project.
- .2 The lead design team must have current and extensive bridge design experience in fixed and movable bridges of a similar span and scale.
- .3 The Project Director who is assigned to this project is expected to remain directly involved in the project through to completion of Phase III.
- .4 The Project Director's experience must be highlighted in the response to this request for proposal.
- .5 The Bridge Architect is expected to be a sub-consultant to the lead designers and their experience must be highlighted in the response to this request for proposal.
- .6 A list of the key design team professional, their roles, responsibilities and experience with these types of bridge must be highlighted in the response to this request for proposal.

## Part 9 Consultants Responsibilities

- .1 The Consultant will be directly responsible for delivering this project to the Ministry of Public Works in a timely and cost effective manner.



- .2 They will be directly responsible for the coordination and management of their design team.
- .3 The Consultant is expected to be proactive and responsive to the Ministry of Public Works.

#### **Part 10 Client Support**

- .1 The Ministry of Public Works will assist with the process of obtaining temporary work permits, if needed.
- .2 The Ministry of Public Works, in consultation the successful bidder, will arrange and pay for geotechnical investigations as required for the works. The schedule for these investigations will be agreed as the project schedule is developed.

#### **Part 11 Location of Work and Travel**

- .1 It is expected that the Consultant will travel to Bermuda so they can become familiar with the project, the location of the proposed bridges and the Bermuda environment so they are able to provide a proposal with a strong "Bermuda" feel.

#### **Part 12 Health and Safety**

- .1 Assess to the bridge sites can be arranged as needed with 24 hours' notice.
- .2 These bridge sites are located on busy traffic roadways and all health and safety requirements are expected to be followed.
- .3 If detailed inspections are requested that would require a lane closure then advanced notice and traffic controls would have to be arranged by the Consultant.

#### **Part 13 Insurance and Warranties**

- .1 Provide insurance certificates for the values notes in the FIDIC Agreement.

#### **Part 14 Quality of Trainee Program Details**

- .1 One of the key success factors of the Ministry of Public Works is to provide training opportunities to our staff, especially our Trainee Engineers. The Ministry sees this project as an excellent chance for one of our Trainee Structural Engineers to gain experience in the bridge selection and design process.
- .2 It is proposed that Mr. Ricardo Graham-Ward would be seconded to the successful bidders design team for the duration of the project. His CV is attached in the tender package.
- .3 The cost of the secondment, salary and expenses would be the responsibility of the Ministry.
- .4 The successful bidder will be expected to assist with immigration, if required.
- .5 The secondment is meant to be an integral part of Mr. Graham-Ward's training with the



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- Institution of Civil Engineers, Chartered Engineering program. He will be available for up to 18 months.
- .6 The successful bidder will be required to provide details on how his involvement in this project or other projects that may arise during the secondment will satisfy the requirements of the ICE attributes.
- .7 It is important that this is a "hands on" secondment with exposure to the conceptual design process, decision making, preparation of alternatives, detailed analysis and design and presentation of concepts.

END OF SCOPE OF WORK