

# REQUEST FOR EXPRESSIONS OF INTEREST

## COMMONWEALTH OF DOMINICA

### **Pilot Program for Climate Resilience/Disaster Vulnerability Reduction Project (PPCR/DVRP)**

Credit No./ Grant No.: **TF016912/5495-DM/TF016955**

**Contract Title: Construction Supervision of East Coast Road Works**

**Reference No.: RFP-01/2018**

The Government of the Commonwealth of Dominica has received financing from the World Bank toward the cost of the **Pilot Program for Climate Resilience/Disaster Vulnerability Reduction Project (PPCR/DVRP)** and intends to apply part of the proceeds toward payments under the contract for consulting services for Construction Supervision of the East Coast Road Works.

The Consulting Services (“the Services”) include the supervision of construction of approximately 43.3 km of East Coast Road Works. The Services shall be for a period of thirty-three (33) calendar months. The Consultant shall be required to commence services within twenty-one (21) days of Contract signing, which is anticipated to take place no later than May 31, 2019.

The detailed Terms of Reference (TOR) for the assignment are attached to this request for Expressions of Interest.

The Ministry of Environment, Climate Resilience, Disaster Management and Urban Renewal, Project Coordination Unit now invites eligible consulting firms (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services. The shortlisting criteria are:

The shortlisting criteria for the Consultants include:

- (i) At least ten (10) years’ experience in civil and structural engineering design and construction, with proven experience and success in the supervision of construction and rehabilitation of roads, bridges, slopes and drainage.
- (ii) At least two successful similar assignments for supervision of rehabilitation or construction of roads, bridges, slopes and drainage during the past six (6) years, of which at least one had a project value in excess of US\$30 million.
- (iii) Demonstrated experience in construction project management, the management of multiple contracts, dispute resolution, and sound construction health and safety management practices.

- (iv) Demonstrated experience in managing and mitigating environmental and social impacts, and in applying environmental and social risk management plans.
- (v) Experience working in the Caribbean and in steep terrain, and the inclusion of Dominican or Caribbean nationals as experts will be assets.
- (vi) All applicants that meet the qualifying criteria will be ranked based on assessment of outlined criteria and level of exceedance. The highest ranked applicants will be invited to participate in the next stage of the procurement process.

Key experts will not be evaluated at the shortlisting stage and CV's must not be submitted.

The attention of interested Consultants is drawn to Section III, Paragraphs, 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" July 2016 revised November 2017 and August 2018 ("Procurement Regulations"), setting forth the World Bank's Policy on Conflict of Interest.

Consultants may associate with other firms to enhance their qualifications, but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

A Consultant will be selected in accordance with the Quality and Cost Based Selection method set out in the Procurement Regulations.

Further information can be obtained at the address below during office hours 0800 to 1600 hours.

Expressions of Interest must be delivered in a written form to the address below in person, or by mail, or by fax, or by e-mail by 2300 hours on January 14, 2019.

Attn: Collin Guiste  
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Project Coordination Unit  
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**Terms of Reference (ToR)**  
**Consulting Services**  
**For Construction Supervision of East Coast Road Works**

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## **Terms of Reference (ToR) for Consulting Services For Construction Supervision of East Coast Road Works**

### **1 BACKGROUND**

Natural disasters present a serious obstacle to achieving sustainable social and economic development in the Commonwealth of Dominica. Like many other Caribbean islands, Dominica is particularly vulnerable to the effects/impacts of natural hazards and extreme climate events such as tropical storms, hurricanes, earthquakes, floods, landslides and increasingly intense heavy rainfall. These hazards often result in significant and recurrent damages to national infrastructure including the road/transportation network. Over the past several years, such disasters have not only severely impacted the physical environment, but have also had serious negative impacts on the country's economy.

The Government of the Commonwealth of Dominica (GoCD) in partnership with The World Bank (WB) has embarked on a Disaster Vulnerability Reduction Project (DVRP) to reduce the vulnerability to natural hazards and the adverse impacts of climate change [disasters] in Dominica and build resilience to adapt to such impacts. The DVRP is the investment plan consisting of a comprehensive package of infrastructure projects and technical assistance activities derived from Dominica's Strategic Programme for Climate Resilience (SPCR) that was developed under the Pilot Programme for Climate Resilience (PPCR). By design, the DVRP is co-financed through a blend of financing from The World Bank under the International Development Association (IDA) and the PPCR under the Strategic Climate Fund (SCF).

The Government of the Commonwealth of Dominica through the DVRP financing arrangements with The World Bank (WB) will be undertaking civil works on the East Coast Roads.

The civil works are intended to improve infrastructure resilience to disaster events and pilot climate change adaptation measures through slope stabilization interventions, rehabilitation of roads, bridges and retaining walls, and rehabilitation/construction of drainage systems.

The Ministry of Public Works, Water Resources and Ports (MPWWR&P) have found that sections of main roads in the eastern parts of the island have been particularly vulnerable under conditions of heavy rainfall, resulting in extreme flooding, severe landslides and rockfalls. These road sections have a history of slope failure, road edge failure and other problems associated with their vulnerability to adverse climatic conditions. Steep slopes coupled with the particular soil conditions prevailing in Dominica, together with inadequate drainage and compounded by intense rainfall events, have given rise to flooding, landslides and damage to road structures. Some of these events have led to the temporary isolation of communities along this route. The increasing frequency of these events - possibly due to climate change - has increased the need for urgent interventions geared towards adaptation for climate change and building climate resilient infrastructure.

During periods of heavy rainfall, river level and flow rate can increase considerably, sometimes resulting in widespread flooding and significant deposition of silt and material in or near structures. In many cases, this has led to undermining, scouring and weakening of structures and failure of land slopes and river embankments. The road carriageway in some areas has significantly degraded as a result of inadequate roadside drainage and the limited hydraulic capacity of water drainage systems due to poor design or maintenance practices.

In the affected region, the main areas of concern and observed impacts include, among others:

- a) High embankments immediately adjacent to the existing roads - increased frequency of landslides;
- b) Hydraulic structures/Pipe culverts - failure of structures due to construction flaws and in some cases, lack of sufficient discharge capacity;
- c) Bridges - many existing structures show signs of severe scour at the piers/abutments and the effects of a general lack of regular maintenance;
- d) Road infrastructure – deterioration of the road pavement and road edges due to insufficient drainage, age and increased traffic;
- e) River Embankments - damage and erosion from flooding events; and
- f) Designs – adequacy of structures compared to AASHTO standards regarding bridge openings, adequate capacity/or type of culverts, proper channel hydraulics and rainfall intensity.

Comprehensive geotechnical, hydrology and hydraulic studies for the area have informed the design of a programme of remedial works to provide long-term resilience for flooding, landslides, etc. and will provide guidance for re-designing failed bridges and other infrastructure on the island.

It is expected that the Supervision Consultant will commence work by **May 2019** and the project is expected to be completed by **June 2021**.

The Ministry of Environment, Climate Resilience, Disaster Management and Urban Renewal, Project Coordination Unit (PCU) of the DVRP is the Executing Agency (EA). The PCU is responsible for overall coordination, monitoring and implementation of the Project. The Technical Services Division of the Ministry of Public Works, Water Resource Management and Ports will assist the PCU in the implementation and monitoring of works.

## **2 OBJECTIVE**

In order to provide supporting infrastructure for the economic and social development of the project areas, GoCD is desirous of engaging a qualified and experienced consulting firm to provide supervision services for the execution of civil works for the duration of the construction and defects liability period, inclusive of the following:

Rehabilitation and realignment of road segments and structures, including pavements, bridges, river embankments, slope stabilization, retaining walls, drainage systems, signage and traffic improvement measures, in the eastern region through four specific lots with a total length of 43.3 km, as follows:

- Lot 1 - Pond Casse to Bois Diable (4.5 km)
- Lot 2 - Bois Diable to Castle Bruce (9.5 km)
- Lot 3 - Castle Bruce to Petite Soufriere (8.8 km)
- Lot 4 - Castle Bruce to Hatton Garden (through the Kalinago Territory) (20.5 km)

### **3 SCOPE OF WORKS**

Based on the preliminary design undertaken by design consultants for the MPWWR&P, the Project envisages rehabilitation and/or construction works for the existing road sections. Using the Pond Casse roundabout as a location reference, the following provides a preliminary but not final scope of works, as information and guidance to consultants in the preparation of technical proposals:

- A. ***Pond Casse Roundabout to Bois Diable*** – Rehabilitation and widening of pavement to 6.5 m width over 4.5 km length, refurbishment of four (4) culverts and construction of 4.5 km of kerb drain.
- B. ***Bois Diable to Castle Bruce*** - Rehabilitation and widening of pavement to 6.5 m width over 9.5 km length, replacement of two (2) bridges with realignment, replacement of thirteen (13) culverts, construction of two (2) retaining walls and 9.4 km of kerb drain.
- C. ***Castle Bruce to Petite Soufriere*** - Rehabilitation and widening of pavement to 5.5 m width over 8.8 km length, replacement of one (1) bridge and one (1) multi-culvert crossing with realignment, refurbishment of one (1) bridge, replacement/construction of twenty (27) culverts, construction of eleven (11) retaining walls and 8.6 km of kerb drain.
- D. ***Castle Bruce to Hatton Garden (through the Kalinago Territory)*** - Rehabilitation and widening of pavement to 6.5 m width over 20.5 km length, replacement of three (3) bridges on the same alignments, replacement of thirty-nine (39) culverts, construction of eight (8) retaining walls and 20 km of kerb drain.

The location is shown in Figure 1 and the drainage and structural interventions are summarized in Tables 1 and 2 below.

Table 1. Preliminary Design Interventions for Geotechnical and Drainage Structures

INTERVENTION		SEGMENT				TOTAL
		1	2	3	4	
Retaining walls	No.	0	2	11	8	21
Culvert replacement with 1.5m box	No.	3	12	18	38	71
Culvert replacement with big box	No.	0	0	1	1	2
New culverts	No.	0	1	8	0	9
Kerb drain	m	4,530	9,430	8,640	20,110	42,710
Inlets (new or replacement)	No.	37	52	52	77	218
Outlets (new or replacement)	No.	32	50	55	77	214
Clearing (riverbed and culverts)	m <sup>3</sup>	455	14,320	135	599	15,509

Table 2. Preliminary Design Interventions for Bridge Structures

Seg-ment	Chainage/Name	Existing Size	Preliminary Design Recommendation
2	L'Riviere L'Or 8+400	17.5 lg x 1-span	Replace with longer, wider bridge on new alignment
2	Belle Fille 12+400	34.2 lg x 3-span	Replace with wider, higher bridge with raised approaches
3	Causeway 0+320	31.9 lg 11xculvert	Replace with box culverts on wider, higher, new alignment.
3	Calixte 0+820	21.9 lg x 1-span	Refurbish existing bridge with wider deck
3	San Sauveur 6+237	9.4 lg x 1-span	Replace with wider bridge
4	Castle Bruce 15+600	5.3 lg x 1-span	Replace with longer, wider, higher bridge, same alignment
4	Richmond 17+500	9.5 lg x 1-span	Replace with longer wider bridge, same height & alignment
4	Pagua Bay 33+848	23.2 lg x 2-span	Replace with wider higher bridge & approaches

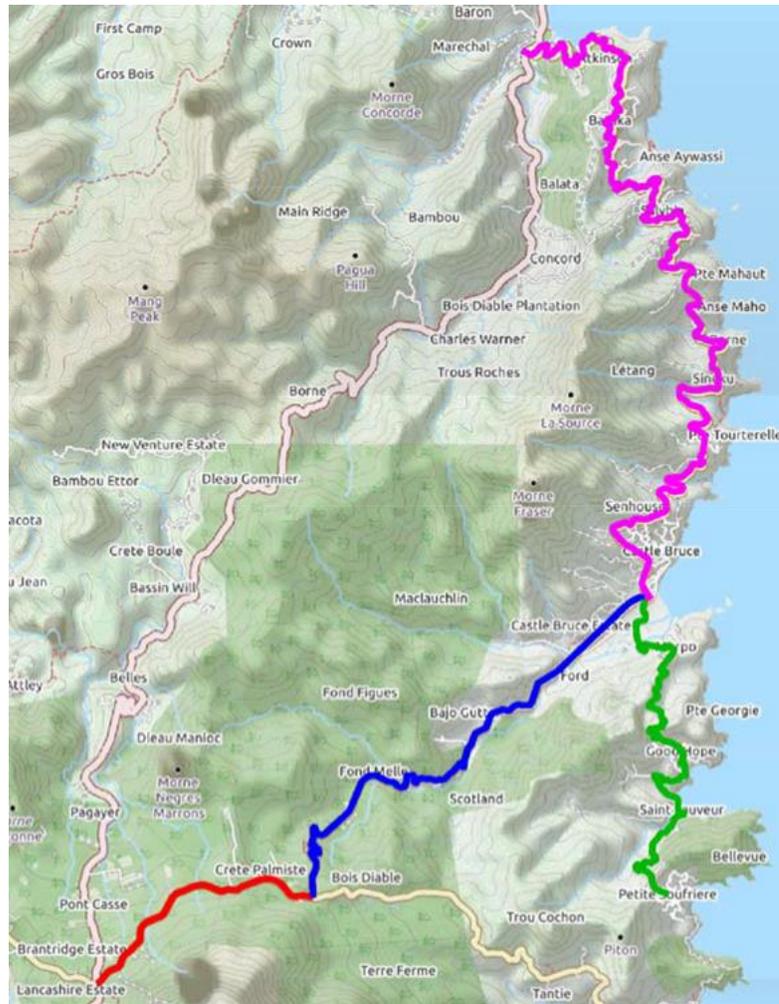


Figure 1. Map Showing Location of East Coast Road Segments Covered by the Services

## 4 SCOPE OF SERVICES

### 4.1 GENERAL SERVICES

The Consultancy services shall comprise the supervision of civil works.

The scope of civil works to be supervised for each segment will be further defined by the detailed engineering design and bidding documents being prepared by the East Coast Roads design consultant.

The Consultant shall provide general contract administration and resident inspection services including materials testing, until the completion of all civil works contracts under the scope.

The Consultant shall work in collaboration with the staff of the PCU and MPWWR&P, who will have responsibilities for general oversight of the works and services. The

Consultant shall also collaborate with other key government agencies responsible for project development and implementation. The Consultant shall be solely responsible for the analysis and interpretation of all data received and/or collected, and the timely completion and the effectiveness of the supervision of works.

To ensure adequate project management and the implementation of agreed QA/QC procedures, the Consultant shall propose a suitable Construction Supervision Management Programme emphasizing project organization, set-up to meet its budget and schedule objectives, resources management, environmental, social, traffic and health and safety administration, performance and critical path planning and monitoring, and project reporting systems.

The following represents a sample of the specific activities required to satisfy the objectives of this Consultancy. This list is not exhaustive and the absence of any 'activities' necessary to satisfy the objectives does not preclude the Consultant's obligation to satisfy the objectives. The Consultant is responsible for acquiring all Permits and Approvals necessary for the conduct of this work in accordance with the Laws of the Commonwealth of Dominica.

#### **4.2 SPECIFIC SERVICES**

The Consultant shall be responsible for, and shall carry out, all services detailed below and encompassing, but not necessarily limited to, the following:

- a. Providing full-time resident staff services during construction.
- b. Supervising the day-to-day operations and activities of the contractors in order to ensure quality of workmanship and compliance with the conditions and specifications of the contracts, including inter alia setting-out data, detailed working drawings, field and laboratory tests as required, etc.
- c. Maintaining a supervisory presence on site at all times when contractors are executing permanent works.
- d. Assessing and enforcing as per the Contract, the adequacy of contractors' inputs in terms of materials, equipment, construction machinery, workers, and construction approach and methodologies.
- e. Advising the contractors on the interpretation of the engineering drawings and technical specifications and issuing supplementary details and instruction during the construction period, as required and with the prior approval of the Client.
- f. Reviewing the contractors' work plans including construction schedule and commenting on the procedures, methods and sequencing of the work.
- g. Considering and advising on alternative methods, equipment and materials proposed by the contractor and providing clearance to the contractor with the prior approval of Client.

- h. Monitoring coordination between the contractors and utility providers for the relocation or replacement of utility infrastructure, e.g. electric poles, telephone wires and especially any water supply works.
- i. Providing technical advice to the Client and recommending appropriate actions if needed during construction phase on planning and scheduling, cost and quality control, etc.
- j. Conducting regular site meetings with the contractor to discuss issues and problems affecting the progress and preparing and distributing detailed minutes of the same. Accordingly, the consultant shall prepare monthly progress reports, quarterly cost/financial reports in a form acceptable to the Client. These reports shall include details of the physical and financial status of the contract/project, details of delays and consequences if any, comments and solution on the quality of works in accordance with the contract. These reports shall also include updated status of all imported items in each contract. The report shall include the procurement status of items to be imported.

*Monthly Progress Reports shall include:*

- Planned and actual progress of works
- Status of incomplete works
- Material, labour, availability
- Revised schedules
- Design changes/ variations
- Financial particulars
- Progress photographs
- Environmental monitoring
- Factors adversely affecting progress of project
- Decisions yet to be taken
- Weather conditions
- Accidents on site and any other relevant details

*Quarterly Financial Reports shall include:*

- Contract particulars
- Contractor's claims
- Projected final costs of projects (Revised Bills of Quantity), if required
- Expenditure to date
- Cash- flow projections

- k. The Consultant shall also submit other reports following the agreed deliverables timeline or on an as-needed basis including but not limited to non-conformity reports, inform the Client of any material inconsistencies in the execution of the works, as well as environmental/social issues and suggesting appropriate corrective measures to be applied.
- l. Maintaining detailed records, correspondences, photographs and other documents concerning relevant events and activities.

- m. Examining the contractors' requests for time extension, variations, additional compensation and claims and making recommendations for appropriate actions including but not limited to preparing the necessary documents, determination of rates of works, advise the Client on alternatives and recommend these to Client for approval;
- n. Monitoring and enforcing, as detailed in the Safety Manual, the measures taken to ensure safety of the workers, other project personnel, general public and works.
- o. Monitoring and enforcing, as detailed in the Environmental and Social Management Plan (ESMP), the measures taken to ensure the protection of the environment, including sensitive natural habitat, river crossings, and landslide stabilization measures.
- p. Monitoring and enforcing, as detailed in the Social Engagement Plan and the Indigenous Peoples Plan, the measures taken to ensure the protection and safety of the persons and property.
- q. Checking measurement for works completed and in progress; verifying and endorsing bills for payment to the contractors; certifying the quality of the works accomplished and on their conformity to technical specifications and engineering drawings; ensuring that works are completed to the prescribed quality standards in accordance with the technical specifications, bid documents and quality assurance management system.
- r. Approving interim payment certificates and verifying that the quantities for such certificates have been completed consistent with the contract documents and approved quality standards.
- s. Certifying completion of part or all of the works, issuing the Certificate of Practical Completion and preparing a consolidated Project Completion Report in a format acceptable to the Client.
- t. Checking and certifying as-built drawings for the works as prepared by the contractors.
- u. Inspecting the works at appropriate intervals during the Defects Liability Period.
- v. Carrying out final inspections of the works during the Defects Liability Period, approving and recommending the final contract accounts for payment.
- w. Project Management Information System: Proposing and setting up a computer-based Project Management Information System (PMIS) which will keep an up to date record of the design reports, procurement process for the award of civil work contracts, signed contract, bill of quantity, quality control management system, environmental and social management system, progress reports, minutes of the

meetings, certification of contractor's invoices, completion reports and any other project related information on a web-based share point information system which can be used by all the three parties Consultants, Employer and the funding agencies. The PCU will determine the list of authorized users to whom a password would be given for making use of the PMIS.

- x. Providing any other specialized services within the scope of works of this project as may be requested by Client.
- y. Work in close coordination with MPWWRM&P and the PCU as required and submit a copy of all reports for review by MPWWRM&P through the PCU.
- z. Perform all other tasks not specifically mentioned herein but necessary to properly supervise and control all construction activities in accordance with the terms of the Contract.

#### **4.3 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

The consultants shall monitor and enforce the contractors' responsibilities as specified in provisions of the Environmental and Social Management Plan (ESMP) for the East Coast Roads project (in accordance with Bank Safeguards and the Project EMF), which include:

- An impact mitigation plan with a detailed description of each mitigation measure, the impact or liability to which it relates, the conditions under which it will be required and the procedures for its execution.
- A programme for environmental monitoring, including the institutional responsibilities for implementation of each mitigation measure, including: (i) implementation; (ii) operation; (iii) maintenance; (iv) control and supervision during construction and operation of the works; and, (iv) environmental monitoring and reporting.
- A communications and grievance management program.
- A timetable of activities, synchronized with activities for construction of the project components.

The mitigation measures specified in the ESMP which shall be enforced include, among others:

- Environmental measures for soil erosion control, slope stabilization, drainage management, and restoration of natural vegetation in temporary use areas.
- Environmental measures for the protection of surface and ground water courses and the preservation of their quality and quantity and of aquatic fauna.

- A plan for runoff and erosion control, with the goal to minimize the siltation or sedimentation of watercourses, drains, and spillways.
- Control of atmospheric emissions (dust and gasses) and noise which affect the workers, neighbouring inhabitants, crops or the general environment.
- Measures to manage and restore the areas impaired by the installation and operation of all ancillary facilities and restore routes to their natural condition.
- Measures for the management of domestic and industrial solid wastes and for control of sewage discharges during construction.
- Special measures to attenuate the barrier effect of the works and to avoid disturbing the native flora and fauna.
- Appropriate quarrying procedures to avoid excessive degradation of the areas to be worked and, afterwards, levelling, earth-filling, replanting and other needed measures to restore the quarried areas to their natural condition.
- Appropriate procedures for using the areas slated as dumps for refuse and spoil from levelling and other wastes, with due regard for the site selection and design of the dumps, how materials are to be placed in them, and appropriate cover to ensure their stability and revegetation.
- Measures to offset impacts that cannot be mitigated, such as compensation to owners of land, structures, businesses, crops and other installations to be affected by the widening of the road.
- Measures to protect nearby natural areas and wild life from direct impacts of construction or impacts due to increased access and land use change impacts (where required).
- Measures to protect and mitigate impacts on archaeological, historical and tourist sites (physical cultural resources) in proximity to the road, including management of access to these areas. The Consultant shall contact environmental, historical preservation and other pertinent authorities and ascertain the legal status of the areas and the specifications and requirements of the institute for appropriate treatment of the cases.
- Measures to protect local population from the influx of large numbers of workers and to deal with potential problems such as alcohol and substance abuse, disease prevention, etc.
- Measures to ensure compliance with local laws and the fundamental rights at work with respect to the contracting of labour for the project, and to implement assurance systems for worker health and safety.

- Measures for worker occupational health and safety per a Safety Manual.
- Measures to manage spills of fuels and oils, and their disposal during construction.
- Measures to manage traffic, noise and accidents during construction.
- Measures to control impacts during construction and operation including speed reduction elements, signals, barriers, and contingency plans in case of accidents and incidents involving hazardous materials, etc.
- Measures to inform the public of project activities, potential delays and caution for safety throughout the implementation of the Project works.
- The requirements of the Abbreviated Resettlement Action Plan that was prepared by the PCU. If further land acquisition and/or compensation of households, businesses or other land users become necessary, the consultant shall collaborate with the PCU Social Specialist in the preparation of resettlement plans that are in accordance with the Bank's guidelines for involuntary resettlement.

## 5 CONSULTANCY SPECIFICATIONS

### 5.1 FINANCE

The cost of the consultancy shall include the consultant's remuneration as well as the costs of all incidentals associated with the conduct of the consultancy. The incidentals shall include, but are not limited to: surveys, field tests, trips, travel allowances, international calls, local transportation, secretarial expenses, copying and office supplies. Penalties will apply for Project Delays.

### 5.2 DELIVERABLES/ REPORTING SCHEDULE

The reports produced by the consultancy shall be delivered in electronic format and in hardcopy and shall be the property of the PCU.

The outputs / deliverables of the study shall be submitted as follows:

- An **Inception Report**, covering the establishment, equipment, staffing and work plan of the services, shall be submitted to the PCU no more than fourteen (14) calendar days after the commencement date of the Contract. The PCU should forward comments on the Report to the Consultants within fourteen (14) calendar days of receipt.
- **Monthly Progress Reports** shall be submitted to the PCU no later than seven (7) calendar days after the last day of the reporting month, in electronic version and two (2) hard copies.

- **Quarterly Financial Reports** shall be submitted to the PCU no later than fourteen (14) days after the end of every quarter year period, in electronic version and two (2) hard copies.
- **Quarterly Progress Reports** - summarizing for all civil works under the services, inter alia physical progress, technical issues, environmental and social safeguards compliance, projected workplans, contractual issues - shall be submitted to the PCU no later than fourteen (14) days after the end of every quarter year period, in electronic version and four (4) hard copies.
- **As-built drawings** shall be submitted in file formats appropriate for use in AutoCAD v2014 software.

The Consultant shall host a minimum of two (2) **workshops** - after the third and sixth quarterly progress reports, respectively (or as required by the Client) - to present a construction progress report to the Project stakeholders, including the PCU, the MPWWRMP, the Lands and Surveys Department, other Government departments including Ministry of Kalinago Affairs, and Policy makers, representatives of the affected communities, and others, as may be directed by the PCU.

### **5.3 REQUIRED QUALIFICATIONS AND EXPERIENCE OF CONSULTANTS**

The consultancy will require the services of an international consulting firm with extensive experience in supervision of road and bridge construction and rehabilitation. It is essential that the consulting firm demonstrate experience working in developing countries, particularly in the Caribbean region and in steep terrain.

- The firm must have at least ten (10) years' experience in civil and structural engineering design and construction, with proven experience and success in the supervision of construction and rehabilitation of roads, bridges, slopes and drainage.
- At least two (2) successful similar assignments for supervision of rehabilitation or construction of roads, bridges, slopes and drainage during the past six (6) years, of which at least one (1) had a project value in excess of US\$30 million.
- Demonstrated experience in construction project management, the management of multiple contracts, dispute resolution, and sound construction health and safety management practices.
- Demonstrated experience in managing and mitigating environmental and social impacts, and in applying environmental and social risk management plans.
- Experience working in the Caribbean and in steep terrain will be an asset.
- The inclusion of Dominican or Caribbean nationals as experts will be an asset.

Table 3 – Requirements for Qualifications and Experience of Key Experts/ Staff

<b>Key Experts</b>	<b>Qualifications</b>	<b>Specific Experience</b>
<b>Project Engineer (Project Team Leader)</b>	Post graduate qualification in Civil Engineering or equivalent, and certification for professional practice	A minimum of ten (10) years verifiable overall professional experience, including in road and/or bridge design and construction. Experience must include being project or resident engineer in at least two (2) projects of substantial size within the past ten (10) years.
<b>Resident Engineer</b>	Minimum of bachelor degree in Civil Engineering or equivalent, and certification for professional practice	A minimum of ten (10) years verifiable overall experience including in road and/or bridge design and construction. Experience must include: (i) being resident engineer on at least one (1) project of substantial size within the past five (5) years, and (ii) a minimum of five (5) years' experience in site management of infrastructure works.
<b>Road, Pavement &amp; Safety Engineer</b>	Civil Engineer with bachelor degree or equivalent, and certification for professional practice	A minimum of six (6) years' verifiable experience, including at least five (5) years in road and pavement rehabilitation/ construction and road safety construction.
<b>Geotechnical Engineer</b>	Civil Engineer with bachelor degree or equivalent, and certification for professional practice	A minimum of five (5) years' verifiable overall experience, including geotechnical fieldwork, slope stabilization, retaining walls, bridge foundations and river embankment stabilization.
<b>Structural Engineer</b>	Bachelor degree in Civil or Structural Engineering or equivalent, and certification for professional practice	A minimum of five (5) years' experience including in: design and construction of bridges, retaining walls and drainage structures.
<b>Quantity Surveyor</b>	Graduate qualifications in civil engineering, surveying or similar	A minimum of five (5) years' professional experience in quantity surveying, including measurement and certification of civil works for payment

<b>Key Experts</b>	<b>Qualifications</b>	<b>Specific Experience</b>
<b>Environmental Specialist</b>	Bachelor degree in Environmental Science or related field	A minimum of five (5) years' experience in natural hazard mitigation, environmental monitoring and applying EMPs on similar projects.
<b>Social Specialist</b>	Bachelor degree in Social/ Environmental Science or related field	A minimum of five (5) years' experience in community mobilization, social impact management and stakeholder consultation on similar projects.

The Consultant shall provide at least four (4) qualified Clerks of Works during the supervision phase.

The language of all reports shall be English and all experts shall have an excellent command of English. The Consultant may propose other experts and supporting staffs required to accomplish the tasks outlined in the ToR. It shall be the Consultant's responsibility to select the optimum team and to propose the professionals which best meet the needs of the Client.

The Consultant must specify the qualifications and experience of each expert to be assigned to the assignment. For each expert proposed, curriculum vitae not exceeding four (4) pages shall be provided detailing the relevant experience and qualifications. Working experience in developing countries, including the Caribbean would be an asset.

#### **5.4 COORDINATION**

The PCU, as the Client will be contractually responsible for the Consultant's assignment. The Consultant shall work closely with the Project Coordination Unit and the MPWWRP, who will be responsible for the day-to-day coordination issues. The Consultant shall be responsible for carrying out pre- and post-contract services to verify the compliance of the approved engineering designs, bill of quantities, working drawings and technical specifications for all civil works in accordance with acceptable international design standards and engineering code of practices.

The Consultant shall provide all the necessary technical and support staff to administer, manage and supervise the Project and fulfill the requirements of the PCU and the MPWWRMP, according to the drawings and Contract documents. The Consultant shall also carry out any additional services which the PCU may reasonably require relating to the supervision of the Project.

Other key stakeholders include:

- Public Works Corporation
  - Road and Engineering Survey Department
- Ministry of Housing and Lands

- Lands and Surveys Division
- Ministry of Agriculture and Fisheries,
- Ministry of Justice, Immigration and National Security
  - Traffic Department
- Office of Disaster Management
- Dominica Meteorological Services
- DOWASCO
- Ministry of Finance
- Ministry of Planning, Economic Development and Investment
- Utility Companies
- Media

## **5.5 DURATION OF ASSIGNMENT**

The estimated total duration of the supervision services is thirty-three (33) calendar months, including an estimated duration of the construction/works phase of twenty-one (21) calendar months, commencing about May 2019 and ending about January 2021, plus a twelve (12) months Defect Liability Period ending about January 2022.

## **6 APPENDICES**

### **6.1 APPENDIX I - INCEPTION REPORT TEMPLATE**

The Consultant is free to format the Inception Report to their standard presentation, but the Report shall contain the following minimum content:

- Executive Summary
- Introduction
- Background and Description of various project elements
- Understanding of Project Objectives
- Contract signing and project commencement
- Team mobilization and project activities to date
- Data collection
- Data gaps
- Assumptions, Risks and Mitigation Strategy
- Comments on TOR
- Project Organization / Lines of communication
- Project execution, methodology and scheduling
- Proposed outlines for interim and final reports
- Appendices, e.g. meeting details, Organization Chart, TOR, Photographs etc.

### **6.2 APPENDIX II - FINAL COMPLETION REPORT TEMPLATE**

A Final Completion Report is expected to be prepared after the completion of Works. The Consultant is free to format the Final Completion Report to their standard presentation, but the Report shall contain the following minimum content.

This report shall address all aspects of the Project implementation, including financial summaries, suggestions and recommendations for future design and construction

methods, technical specifications, any changes in Special Conditions of Contract and photographs. Three sets of 'as-built' Drawings and USB Drives/CDs/DVDs containing all the information contained in the Final Report shall be presented to the Client. This shall be prepared by the Consultant within ten (10) weeks of completion of the works Contract.

### **6.3 APPENDIX III - TERMS OF PROJECT DATA AND GEO-SPATIAL DATA DELIVERY AND SHARING**

All geospatial data and other data (e.g. geotechnical analyses, etc.) collected and created by project activities shall become the property of the GoCD and must be preserved, consolidated and transferred to the Government of Dominica upon project completion, in a well-known or standard electronic format. Specifically the following terms shall apply:

**Licensing:** All data procured and developed for this project shall be done on behalf of the Government of Dominica and therefore all licensing agreements must be made similarly. In keeping with the World Bank commitment to open data, it is recommended that this license be under Creative Commons CC-BY-SA where possible and appropriate. Refer to <http://creativecommons.org/licenses/by-sa/2.0/> for more details.

**Vector Data:** Geospatial vector data must be converted into a standard OGC format or well-known format. This list includes, but is not limited to, shape file format. Additional formats may be delivered with prior approval. All files must include projection parameters. Vector data must adhere to topological standards.

**Raster Data:** Geospatial raster data must be converted into a standard OGC or well-known format. This list includes, but is not limited to, GeoTiff format. Additional formats may be delivered with prior approval. All files must include projection parameters.

**Tabular Data:** Tabular data must be converted into a readily accessible or well-known format. This list includes, but is not limited to, CSV, tab delimited text file, or spreadsheet. Additional formats may be delivered with approval.

**Media/Method of Transfer:** All data sets must be transferred on permanent media such as a USB Drives/CD/DVD disk. Very large data sets, too large for CDs and DVDs, may be provided on a hard drive or solid-state drive, as agreed by the Government of Dominica.

**Metadata:** Detailed documentation needs to be provided for each data set. This metadata must include description, source, and contact, spatial and attribute keywords, date, accuracy, restrictions. A description of attributes should to be provided for vector and tabular data sets. Spatial data must include details of projection. The World Bank has created metadata standards for internal use, based on ISO 19115:2003, that meets these requirements. Please refer to World Bank metadata standard for details. The metadata standard to be used in this consultancy will be discussed with the involved Ministries and the responsible Agency for the National Spatial Data Infrastructure.

**Other Data:** All other data/studies generated during Project Implementation, including geotechnical and hydraulic data must be transferred to the Government of Dominica in an agreed format.

**Derived Data:** All derived data generated for this project belongs to the Government of Dominica and must be transferred under these terms.

**Periodic Updates:** Ongoing updates of this data made by the selected must be provided as they are created.

**Disposal of Data:** The selected firm is free to maintain copies of data collected and developed through this project, without conflicting the terms of any license/contractual agreements. Ownership remains with, and must be stated as, the Government of the Commonwealth of Dominica. Further data sharing is permissible under these terms only if the data is made freely available without cost.