



**TABLE OF CONTENTS**

<b>1. PROJECT SUMMARY</b> .....	2
<b>1.2 Project Phases and Activities</b> .....	3
<b>2. PURPOSE AND OBJECTIVE</b> .....	4
<b>2.1 Objectives</b> .....	4
<b>3. ROLES AND RESPONSIBILITIES</b> .....	4
<b>3.1 Responsibilities Project Management Team</b> .....	4
<b>3.2 Responsibilities Project Manager</b> .....	4
<b>3.3 Responsibilities Construction Manager</b> .....	5
<b>3.4 Responsibilities Construction Supervisors</b> .....	5
<b>3.5 Responsibilities Environmental Manager</b> .....	5
<b>4. ENVIRONMENTAL COMMITMENTS</b> .....	6
<b>5. ENVIRONMENTAL ASPECTS AND IMPACTS</b> .....	6
<b>5.1 Noise Management</b> .....	7
<b>5.2 Air Quality Management</b> .....	7
<b>5.3 Waste Management</b> .....	8
<b>5.4 Vegetation Management</b> .....	8
<b>5.5 Archaeological Management</b> .....	9
<b>5.6 Surface Water Management</b> .....	9
<b>6. SPILL PREVENTION AND RESPONSE PLAN</b> .....	10
<b>7. ENVIRONMENTAL INCIDENT INVESTIGATION AND REPORTING</b> .....	12
<b>8. ANNEXES</b> .....	12

## 1. PROJECT SUMMARY

The **Government of Saint Vincent and the Grenadines** has received financing from the World Bank (Bank) toward the cost of **the VECP** and intends to apply part of the proceeds toward payments under the contract for **Construction of Abutments, Approach Roads, and Installation of a Temporary “By-Pass” Bailey Bridge at Noel.**

The scope encompasses the excavation of foundation footing for the bridge abutments, placement of rebar, formwork and concrete for the abutments, construction grouted boulder packing as a river defense mechanism to protect the main works, assembly and installation of a 90 feet span Bailey Bridge to accommodate single lane traffic, construction of concrete pavement approaches and associated drainage to both ends of the bridge and finally the commissioning and handing over of the Bailey Bridge to vehicular traffic.

The Project includes a temporary laydown area and stockpile site to store construction materials and bridge parts within the Project Area.

Aggregate will be supplied from a company owned quarry, located on the Winward side of the island. Concrete will be supplied from a project based batching system.

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1.2 PROJECT PHASES AND ACTIVITIES

Project Activity	Description
Construction	<p>Activities include:</p> <ul style="list-style-type: none"><li>• Excavations for abutment footings</li><li>• Construction of abutments</li><li>• Assembling and installation of Bailey Bridge</li><li>• Construction of retaining structures and approaches</li></ul>
Demobilization	<ul style="list-style-type: none"><li>• At the end of the project all construction materials and equipment will be demobilized. The structure will be commissioned and handed over for use</li></ul>

## 2. PURPOSE AND OBJECTIVE

The Environmental Report has been developed to focus primarily on environmental effects potentially caused by construction activities. The primary purpose of the report is to provide a reference document that ensures Project environmental commitments, safeguards, and mitigation measures are being implemented and adhered to.

### 2.1 OBJECTIVES

The following objectives are possible to mitigate adverse environmental impacts during Project construction activities, in the following ways:

- Minimize air pollution (fugitive dust and equipment emissions) and light pollution from construction and associated activities.
- Protect any archaeological or cultural heritage items or areas (as applicable) that may be affected by the Project.
- Protect vegetation and wildlife identified for protection within the Project footprint as well as receiving environments near the construction works.
- Prevent pollution and/or contamination of the environment caused by fuels, oils or chemicals stored on the construction site.
- Minimize waste resulting from Project construction and manage hazardous materials safely.
- Avoid interaction and conflict between human and wildlife.
- Prepare for potential incidents or environmental emergencies.
- Monitor and manage work procedures as necessary to limit environmental impacts.

## 3. ROLES AND RESPONSIBILITIES

### 3.1 Responsibilities Project Management Team

3.1.1 To comply with HSE legislation.

3.1.2 Reviews reports of the company's HSE performance.

### 3.2 Responsibilities Project Manager

The Project Manager will verify that all aspects of construction conform to environmental commitments and comply with regulatory requirements and permits and is accountable for meeting Environmental and Regulatory Requirements during the overall execution of the Project.

### 3.3 Construction Manager

The Construction Manager(s) are responsible for ensuring construction activities are performed in compliance with permit conditions, commitments, and environmental management requirements. They are to ensure that they provide sufficient resources within the Construction Teams to effectively oversee construction activities in compliance with environment and regulatory requirement.

### 3.4 Construction Supervisors

The Construction Supervisors are responsible for ensuring construction activities are performed in compliance with permit conditions, commitments, and environmental management requirements. Construction Supervisors provide oversight of the construction activities that take place on the worksite.

#### **Specific responsibilities include:**

- Planning construction activities with the inclusion of project commitments, and site environmental requirements.
- Monitoring construction activities to verify they comply with commitments, and site environmental requirements.
- Work with the Environmental Specialists, Permitting and Compliance Teams and other functional subject matter expertise as required
- Conducted regular site inspections to verify compliance with approved permits and environmental requirements.
- Participate in Environmental Incident Investigations and recommend corrective actions, as required.

### 3.5 Environmental Manager

The Environmental Manager is responsible for ensuring construction activities are performed in compliance with permit conditions, commitments, and environmental management requirements. Liaise with the project leadership team to resolve any escalated environmental issues which are unable to be mitigated at a working level within the organizations.

Provide sufficient resources within the Project to effectively oversee construction activities in compliance with

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environment and regulatory requirements and ensure investigations are conducted for environmental incidents as required.

**Specific responsibilities include:**

- Review construction activities for compliance with the overall Project environmental requirements.
- Coordinate environmental risk assessments and associated work planning processes.
- Identify and coordinate resource requirements for the Environment Team.
- Communicate with contractors and subcontractors and provide information aimed at avoiding or responding to potential environmental effects or incidents.
- Clarify regulatory issues that may arise at the construction site.
- Verify that relevant environmental permits, approvals, and authorizations are in place to support work.
- Ensure awareness and recommend implementation of the Stop Project work policy, for work that does not comply with or is in immediate danger of not complying with regulatory requirements.

**4. ENVIRONMENTAL COMMITMENTS**

- 1. Achieve Goal Zero:** We are committed to achieving environmental compliance at all our worksites. We will not compromise the environment or habitats to attain cost or schedule. Sustainability measures will be incorporated into our work activities to conserve and protect resources.
- 2. Seek to reduce the impact to local infrastructure and near communities:** We will build strong relationships and meet our commitments, as part of environmental regulatory compliance.
- 3. Put people first:** We will provide an environmentally responsible and culturally sensitive project, while maintaining peoples' safety and worker welfare
- 4. Employ competent people:** We will employ qualified staff that will cultivate further appreciation and respect for the environment. We are committed to ensuring all staff have the required level of environmental proficiency to maintain compliance with all environmental commitments and work plans.
- 5. Be a learning organization:** We will continue to build on mentoring and knowledge transfer to shape future generations and apply best management practices and lessons learned for continuous improvement.

## 5. ENVIRONMENTAL ASPECTS AND IMPACTS

An environmental impact is defined as an observed change to the environment, whether it is adverse or beneficial, direct, or indirect. The degree of impact resulting from any given construction activity will depend on the sensitivity of the receiving environment and the scale of the environmental aspect.

### 5.1 Noise Management

Construction noise results from the operation of construction machinery, including mobile equipment, as well as general construction activities while utilising equipment including land clearing, infrastructure excavations, demolition of existing facilities, compaction of unconsolidated soils etc. The Project alignment is in relative proximity to a sensitive receptor, this being a residential area.

Noise impacts caused by the operation of heavy equipment used to construct infrastructure, may cause overall increased noise levels, and general annoyance. To ensure noise impacts are minimized and managed appropriately, the following requirements will be established:

- If construction work occurs outside the normal working hours (Monday – Friday 07:30 am to 4:30 pm), as stipulated in the Contract, permission from the Consultant is required.
- Works will be limited to working hours with only emergency or night critical works being performed outside of these hours.
- Fitting of noisy construction equipment and vehicles with mufflers and other suitable noise reduction devices where possible and reasonably practical
- Avoid any idling of equipment and vehicles when not in use
- Maintain equipment, machinery, and vehicles regularly
- Signage and marking of noisy areas when the noise limit is exceeded (if necessary)
- Notify public in advance of any substantial noise-causing planned activities

### 5.2 Air Quality Management

The Project footprint is generally situated close to a residential area that may be affected by fugitive dust emissions from construction activities or emissions from construction vehicles and equipment. Air quality impacts during the project may include dust, particulate matter, carbon monoxide and nitrous oxide. Construction activities that may have an impact on the local air quality include movement of heavy equipment vehicles, (during excavations, casting). To ensure that air quality impacts are minimized, the following will be established

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- Dust suppression measures will be implemented such as water suppression, tarps, etc. (where applicable)
- Fugitive dust on stockpiles containing large amounts of fine particles will be managed through the placement of water or tarping to minimize fugitive dust.
- Reduce number of vehicles on the project site.
- Establish an anti-idling policy for all construction equipment, including vehicles and trucks
- Perform regular maintenance of equipment and vehicles according to a set maintenance schedule and manufacturer's specifications. Equipment found to be defective will be repaired or removed from site
- Store waste in enclosed containers where appropriate

### **5.3 Waste Management**

The Project will generate construction-related wastes, such as food waste, wood, paper, plastic, cement bags, cement residues, sections of stones or paving material. Management of wastes will follow normal operating practices that focus primarily on waste minimisation, recycling or reusing and disposal through authorised vendors and recyclers.

To ensure waste is managed accordingly,  
the following requirements will be established:

- All personnel and subcontractors under their control will adhere to the waste management arrangements on site.
- Litter bins will be emptied as the need arises
- Used oil for disposal shall be drained and contained in sealed containers.
- Appropriate measures in place to minimise windblown litter by either covering trucks or by transporting wastes in enclosed containers
- Flammable liquids, including paints, thinners and solvents will be kept in containers built for that purpose away from sources of ignition.

### **5.4 Vegetation Management**

Removal of vegetation can pose several potential environmental impacts. Below lists mitigations that are to be implemented to reduce impact:

- Clearing of trees will occur within the boundaries of the project where needed.
- Trees will be disposed of at suitable dumpsite



### **5.5 Archaeological Management**

This outlines the procedures to follow if cultural resources are discovered or if unanticipated effects to historic properties occur during project construction:

- During construction activities, in the event any archaeological, historical, or geological interest are discovered, these will be reported to the immediate supervisor in charge of the works. They shall be immediately safeguarded, and the Employer shall be immediately informed. Kelectric will follow the instructions of the Employer concerning preservation or removal.
- Project activities outside the discovery site may continue as directed by the Project Manager and the HSE Manager while documentation and assessment at the discovery site proceeds.

### **5.6 Surface Water Management**

Surface or stormwater runoff is generated by precipitation as the water flows through the exposed / disturbed areas at the construction site. During site preparation, surface runoff is expected to increase due to lack of ground cover, i.e., removal of vegetation, infiltration reduction, compacted ground, grading changes and increased impervious areas. Therefore, surface runoff carries high concentrations of sediment (sand, silt, and clay) due to increments in erosion and mobilisation of sediments. In addition, surface runoff contamination is possible from its interaction with construction areas, mobile and stationary equipment containing fuels, hydraulic fluids and other chemicals used on site during construction.

The following mitigations will be implemented to ensure surface water runoff does not impact the environment:

- Through site inspections, identify areas where runoff may impact the environment and develop a plan for appropriate controls to mitigate impact.
- Isolate freshly poured concrete from being into contact with surface run-off
- Cement slurry removed from mixer trucks after concrete has been poured will be disposed of via catch pit away from water courses
- Dried slurry will be removed and disposed of at appropriate dumpsite.

## 6. SPILL PREVENTION AND RESPONSE PLAN

- Preventive Measures

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Actions to minimize  
Potential for spills

- Only hoses, fittings, connections, couplers, and nozzles designed for the specific medium being conveyed will be used.
- Carefully monitor fuel contents during transfer of fluids. Have additional absorbent pads on hand while transferring fuel.
- Clean up drips and minor spills immediately. Immediately complete repairs if deficiencies are noticed. (i.e., Leaky hydraulic fitting)
- Regularly inspect drums, tanks, and hoses for leaks or potential to leak and for proper storage.
- Train personnel, especially those who will be operators, in proper fuel handling and spill response procedures.

Management  
Responsibilities

- 
- Provide up to date and accessible Safety Data Sheets (SDS) for all hazardous materials.
  - Encourage workers to take reasonable measures to prevent spills.
  - Keep drums/ containers sealed or closed when not in use.
  - Keep storage areas secure from unauthorized access.
  - Segregate incompatible materials (Review MSDS/SDS to confirm).
  - Ensure chemical storage areas are adequately protected from weather and physical hazards.

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- Spill Response Steps

If a spill of fuel, oil, grout, lubricants, or other harmful substances occurs, the following procedure will be implemented:

1. Ensure safety
2. Stop the Flow (when possible and only when safe)
3. Secure the Area (once in area that is safe prevent others from accessing)
4. Contain the Spill (when possible and only when safe)
5. Notify/Report to essential personnel
6. Clean Up

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1. Ensure Safety

Ensure personal / public, electrical and environmental safety.  
Wear appropriate Personal Protective Equipment (PPE).  
Never rush in, always determine the product spilled before acting.  
Warn people in immediate vicinity.  
Ensure no ignition sources if spill is of the flammable material.

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2. Stop the Flow

Act quickly to reduce the risk of environmental impacts.  
Close valves, shut off pumps or plug holes/leaks, set containers upright.  
Stop the flow of the spill at its source.

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3. Secure the Area

Limit access to the spill area.  
Prevent unauthorized entry onto site.  
Use delineation if required.

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4. Notify/Report

Report to supervisor or management

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5. Clean-up

If toxic fumes are present secure the area with caution tape or other forms of delineation to prevent other personnel from entering the immediate area. Deal with the spill in accordance with the SDS for that chemical. Handle such situation in a safe manner, wearing all PPEs as indicated by the SDS.

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### 3. • Diesel Fuel, Gasoline, Hydraulic Oils and Lubricating Oil

On Land	<hr/> <p>Build a containment berm using soil material and place a plastic tarp at the foot of the berm for easy capture of the spill after all vapours have dissipated.</p> <p>Remove the spill by using absorbent pads or excavating the soil or Remove spill splashed on vegetation using particulate absorbent material.</p> <p>Commence with the removal of any contaminate soil, gravel, or vegetation.</p> <p>Place contaminated material into drums for shipping off site.</p> <hr/>
Disposal	<hr/> <p>Any contaminated material will be shipped from site, in appropriate containment, to an appropriate and approved facility.</p> <hr/>

## 7. ENVIRONMENTAL INCIDENT INVESTIGATION AND REPORTING

An incident is an event or sequence of events that has an actual or potential health, safety, security, environmental or reputational impact. In the event of an environmental incident the events surrounding the incident will be investigated. Initial Incident notifications are communicated, and an incident investigation is required. An environmental investigation will include the following basic elements:

- Description of the event
- Identify the root cause of the incident (depending on the severity of the event)
- Identify the necessary corrective action(s)
- Identify the personnel responsible for carrying out the corrective action
- Implement or modifying controls necessary to avoid a repeat occurrence of the incident
- Record any changes in written procedures, as required

Any reports that are required to be sent to external agencies such as regulators will be submitted as required.

Any additional reporting requirements that arise from permits or authorisations will be completed as specified in the conditions.

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### **8.ANNEX**

#### Monthly Environmental Checklists