4.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The below includes revisions from comments received by the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology and subsequent comments by the World Bank provided by the Ministry of Finance.

A Introduction

The Contractor's responsibilities under the contract with respect to environmental matters are outlined in greater detail in the following to assist the Contractor to make the required allocation in the item in the Bill of Quantities to satisfy protection and mitigation of the environmental and social impacts of the works.

This Environmental and Social Management Plan attempts to identify the potential impacts, both positive and negative as a result of the construction phase of the project. The potential impacts have been identified based on the knowledge of the environmental, social and economic impacts from construction sites keeping in mind as far as possible the specificity of each project location.

The aim of the plan is to prevent or minimise as much as possible any adverse impacts from construction.

- Identifying potential impacts, mitigation measures that should be implemented;
- Identifying systems and procedures for that purpose; and
- Specifying the environmental indicators to monitor the effectiveness of mitigation measures.

The Environmental and Social Management Plan is complemented by the following:

(a) Monitoring Plan

(b) Emergency Preparedness and Response Plan

(c) Capacity building measures

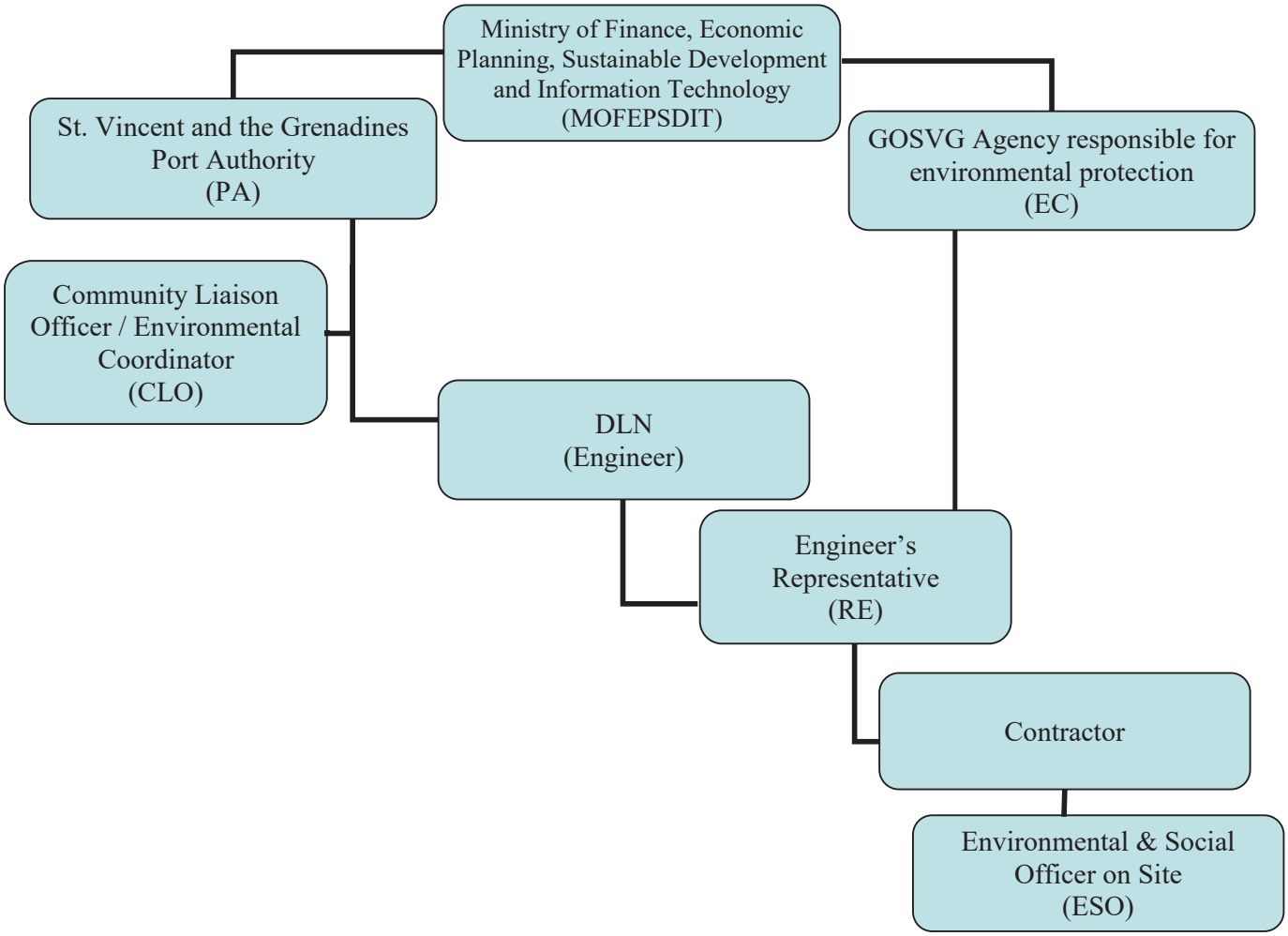
(d) Occupation Health and Safety Procedures

(e) Fire Prevention and Response Plan

(f) Oil Spill Prevention and Response Plan

B Structure and Responsibility

The structure and responsibility of the project is shown in the chart below. The roles of each party are then discussed.



Roles and Responsibilities for implementation of the ESMP and the management of the construction works of the new jetty and shore structures and infrastructure are discussed briefly below and shall form part of any contracts awarded to contractors.

Ministry of Finance, Economic Planning, Sustainable Development and Information Technology (MOFEPSDIT)

- Provide overall management of the project as Employer's Representatives.
  - Appoint a Community Liaison Officer (CLO) and Environmental Coordinator (EC)
  - The EC shall provide support to the contractors Environmental Site Officers regarding any significant non-compliance by the Contractors and the steps to be taken to rectify this.
  - The CLO shall be responsible for ongoing communication with affected communities during

the construction period. Responsibilities of the CLOs shall be set by MOFEPSDIT and may include the following:

- Support the RE and the EC in meeting the regular communication requirements of the ESMP.
- To keep communities informed about upcoming construction activities and progress of construction.
- To arrange organised/impromptu visits by personnel from the MOFEPSDIT or other community leaders in consultation with the RE.
- To support the Engineer in development of the project labour requirements by supporting development of a transparent recruitment process in consultation with local leaders and Government for recruitment of unskilled temporary construction.

Engineer

- Environmental and Social Management
  - The Engineer will manage and supervise the construction works carried out by the Contractor(s) through management of activities in such a way that pollution is mitigated, waste minimised and the rights of the environment protected.
  - The Engineer shall update the ESMP based on requirements of the works and the MOFEPSDIT.
  - The final decision on all environmental and social matters relating to the works between the Contractor and the Engineer will remain with the latter, where there is a disagreement of interpretation regarding the ESMP and actions to be taken.
  - the Engineer shall initiate, co-ordinate and manage all communication with the MOFEPSDIT via the Project Manager or any duly designated officer of the Employer.
  - The Engineer shall ensure the procedures in D to K inclusive following are met including their availability to the Employer as required.
- Community Communication
  - The Engineer shall appoint a Resident Engineers (RE), reporting to the Engineer.

Contractors

The Environmental and Social Management Plan (ESMP) shall form part of the legal agreement/contract with the Contractor to ensure compliance. This shall form part of the Construction Management Plan that will be developed by the Contractor.

- The Contractor shall comply with the requirements of the ESMP and shall do so by employing techniques, best practices and methodologies to ensure compliance.
- In ensuring compliance with this standard, the contract will minimise environmental damage, control waste, avoid pollution, prevent loss or damage to natural resources and minimise effects on surrounding residents and the general public.
- The Contractor shall prevent or minimise the occurrence of accidents which may cause damage to the environment, prevent or minimise the effects of such accidents and shall return the environment to a state as close to the condition existing prior to any such accident as possible.
- The Contractor shall appoint an Environmental and Social Officer (ESO) on site, who will be employed on a full time basis for the duration of the contract.
- The ESO shall perform all tasks necessary to monitor the performance of the Contractor with respect

to the specifications in the ESMP. Specific responsibilities of the ESO shall be as follows:

- Ensure the protection of the environment.
- Perform all of the day-to-day tasks necessary to monitor the performance of the Contractor(s) with regard to the requirements of the ESMP.
- Thoroughly familiarise him/herself with existing information regarding the project area and the ESMP.
- To liaise with the MOFEPSDIT through the Engineer's Representative in the case of incidents, non-compliance or any matter where the course of action is unclear.
- Verify the accuracy of the information contained in the ESMP and to bring any errors, omissions, oversights to the attention of the Contractor's and the Engineer's Representative as necessary.
- The ESO shall act as a guide and advisor to the Contractor in respect of the ESMP on environmental and social issues during the construction phase of the project. This will be achieved by ongoing internal inspections/auditing/monitoring of the project, identification of problem areas and provision of actions plans to avoid environmental damage.
- The ESO shall have experience in environmental and social management. The ESO shall be capable of evaluating the effectiveness of specified management measures and be familiar with environmental and social management techniques. The ESO shall be able to propose solutions to problems identified as regards the implementation of the plans.
- The Contractor shall take proactive steps to ensure that the standards in the ESMP are met during all phases of construction. These shall include, but not be limited to, the following:
    - Employment of competent and dedicated members of staff to oversee the implementation of the ESMP.
    - The appointment and replacement of staff responsible for the environmental and social management of the contract shall be subject to approval.
    - Instruction of staff about the relevant environmental sensitivities and the specific measures that each employee shall implement to meet the environmental and social protection and management standards defined by the ESMP.

Environmental Protection Agency (EPA)

The GOSVG Agency responsible for Environmental Protection as the sole regulatory body shall carry out monthly monitoring visits to the project sites.

Following are schedules of Potential Impacts with Proposed Mitigation Measures identifying the Responsible Party and Time Frame for Implementation for a range of mitigation measures.

C. Required Mitigation Measures

The Following is a list of mitigation measures as developed in the environmental and social impact assessment (ESIA) for the works.

	Potential Impact		Responsible Party	Time Frame for Implementation
Impact on areas of significant cultural, historical or archaeological importance	Excavation Works may unearth, obstruct and cause damage to artefacts that are *in situ*	• In the event that there is an inadvertent discovery of Historical or Prehistoric archaeological sites it is advised (best practice) that all operations are ceased and reported to relevant authorities in this case the GOSVG Agency for Environmental Protection, the National Trust and other relevant agencies. • Every effort should be made to maintain the integrity of these sites in recognition of their historical significance to the country and the communities they are in • All works executed within the area should be done with an established buffer zone this zone may vary depending on the stability of the structure to minimize damage that may be caused by vibration and the operation of heavy machinery • Site workers should be further informed of all sites within the area and be advised of precautionary measures	Contractor and Supervision Team	During the entire time frame for the project.
Natural habitat and biological resources	There is a possibility of direct loss of vegetation as a result of land clearing necessary to create access for heavy machinery in some project sites. This may lead to habitat loss/destruction Wildlife: potential-destruction of habitats; displacement of fauna	• Land clearing and vegetation removal will be restricted to the operational areas and cleared areas not being utilized would be re-vegetated • Ensure waterways are not blocked so as to allow for the free flow of water to prevent flooding of populated areas • Ensure water quality of streams within and around the project site is not compromised	Contractor and Supervision Team	As required

	Potential Impact		Responsible Party	Time Frame for Implementation
Pollution of Marine Areas	Excavation works and use of other heavy machinery can destabilise soil to release suspended solids into the existing water courses and the sea. The operation of heavy machinery and trucks within the project site can also give rise to the probability of fuel and chemical spills possibly contaminating the marine environment.	• As far as possible and practical, use preventative measures to ensure little to no loss of soils into waterways • Install silt curtains to minimise impact on marine life • In the event of loss of soil into waterways occurs, removal of same • Ensure trucks and other machinery used on sites have no spills of fuel and chemical • Locate fuel storage areas with necessary protection from work areas and any waterways • When handling fuel, care should be taken to prevent spillage and leaks; • Spill kits should be made available in the event of spillages • Ensure waste oil is collected and stored in covered containers on a bunded and impervious surface • Ensure fuel and lubricants are stored within a bunded area with an impervious surface	Contractor and Supervision Team	As required

	Potential Impact		Responsible Party	Time Frame for Implementation
Disposal of hazardous and non-hazardous waste	Disruption/blockage and contamination of waterways thereby altering the quality of water available to community and ecosystem	• Ensure construction waste is collected stockpiled in a designated area at the project site • Construction waste which includes materials remaining from the construction of sea defence works will be sorted and reused as much as possible • Disposal of all non-hazardous waste such as construction waste shall be done in the designated areas for each project site • Hazardous waste such as waste oil, will be collected and stored in covered containers and removed immediately • Any maintenance works of machinery or vehicles at the project location will be done at least 100 meters away from any waterway • Waste generated by workers such as food boxes, plastic bottles, cans and other personal waste shall be collected and removed from site to be disposed of in a garbage receptacle.	Contractor & Supervision Team	During the entire time frame for the project.
Impacts on area susceptible to erosion including soil erosion and sedimentation	Earthworks grubbing, cut and fills, scarification of soil surface, sub-soil exposure, erosion, soil compaction from the operation of heavy-duty machines Degradation of natural landscapes possible where access is not available. Assess long term impacts	• Use appropriate machines for all earth works to reduce the time taken to complete each activity. *Less machine time implies less compaction, less noise and less vibration;* • Consider the weather pattern before initiating major earthworks: earthworks should be avoided during periods of heavy rainfall; • Designate routes where there is more than one access, for heavy duty equipment to prevent compaction of soil. • Survey beach profile and bathymetry	Contractor & Supervision Team Contractor & Engineers	During the entire time frame for the project Pre & post construction as well as on yearly intervals

	Potential Impact		Responsible Party	Time Frame for Implementation
Vulnerability to natural hazard risk, taking into account the potential for landslides, floods, high wind and storm surge	Loss of and damage to soil, construction material and injury to workers	• Plan the work site for each project location using topographic maps to minimise the loss of soil to waterways or areas of low elevation; • Prevent the loss of materials to waterways as a result of high wind by maintenance of the work site • Stockpiled soil should be done so in manageable quantities and should be covered with the use of a tarpaulin to minimise loss • Monitor tides to reduce probability of flooding due to high/spring tide	Contractor & Supervision Team	During the planning phase of the project
Air pollution caused by the emission of dust and other particles into the atmosphere	Dust from soil and sand exposure, and the increased traversing of vehicles and heavy machinery may cause minor changes in microclimate.	• Plan the use of all machines so that they are **used only when required** • Vehicles should travel ***slowly <25 km/h*** whenever they pass worksites and communities. • During dry periods, routes should be soaked periodically throughout the workday. • Personnel working within dusty environments should be required to use dust masks and goggles.	Contractor & Supervision Team	During the entire time frame for the project

	Potential Impact		Responsible Party	Time Frame for Implementation
Noise nuisance and/or vibration from the use of equipment particularly for piling	Exposure to excessive noise and vibrations from the operation of machines for construction	• Plan the use of all machines so that they are used only when required • Monitor vibrations from piling operations and ensure noise and vibrations do not impact adversely on adjacent areas and particularly structures • Works requiring the use of noisy heavy machinery should not occur in close proximity to the housing areas during the night or on Sundays and Holidays unless works are dependent on the tide • All personnel on the work site should be outfitted with earmuffs • As far as practicable, noise emission should be controlled at the source with the installation of mufflers/silencers on heavy machinery	Contractor & Supervision Team	During the entire time frame for the project
	Exposure of heritage sites and historical structures to vibration from the use of heavy machinery	• With the use of excavators and the placement of boulders, operators will use the lowest level possible • Where known historical structures exist within the project location, the contractor will monitor the use of machinery to ensure no damage on these in particular		

	Potential Impact		Responsible Party	Time Frame for Implementation
Traffic disruption	Potential for traffic accidents and worker injury/fatality	• The project site will be cordoned with the use of barricades and appropriate signage • Machines are to be operated by competent, licensed and authorized personnel only and in a manner that does not endanger other employees or persons authorised to be on the work site • Vehicles with the exception of machinery and those actively involved in the construction works will be prohibited from entering the work site; residents will be notified of this restriction. • All site workers will undergo safety training to prevent the possibility of injury/fatality due to traffic accidents • Promote proper skills set through training among machine operators working near roadways • Drugs and alcohol use by workers on the work site should be prohibited;	Contractor & Supervision Team	As required

	Potential Impact		Responsible Party	Time Frame for Implementation
Public and Workers Safety	Injury to Public and Workers	• Work site must have appropriate signage and cordoned where applicable to restrict access and notify the residents/public of potential danger. • Machines are to be operated by competent, licensed and authorized personnel only and in a manner that does not endanger other employees or persons authorised to be on the work site • The Contractor will employ a health and safety officer or an employee who shall be trained in First Aid to be stationed at the worksite. • The health and safety officer will conduct weekly safety audits and random checks on workers to ensure compliance with safety guidelines and appropriate use of safety gears and personal protective equipment	Contractor & Supervision Team	During the entire time frame for the project
		• The Contractor will provide a first aid kit equipped for the number of employees working on site at any given time. • All personnel hired by the contractor, working on the project, shall be issued with the appropriate safety gears and personal protective equipment. • The Contractor will ensure workers are properly oriented to the safety and health rules and guidelines; • Provide adequate changing, sanitary and drinking facilities for male and female personnel.	Contractor & Supervision Team	During and after the project
	Inappropriate interaction with communities, possible rise in crime rate, use of alcohol and other disagreeable behaviour	• Drugs and alcohol use by workers on the work site are prohibited; • Personnel are properly informed on the correct protocol for interaction with the local communities.		

	Potential Impact		Responsible Party	Time Frame for Implementation
Socio-Economic Impacts	Creation of employment Visual disturbance	• Creation of employment opportunities via the supply chain • Generation of income • Improved economic empowerment • Disturbance of businesses along the coastline • Increased use of sea defence and surrounding areas for recreational purposes • Reduced flood risk and associated social vulnerability to floods due to breaches, overtopping etc. • Increased property value • More resilient livelihood activities related to agriculture, tourism and commercial activities	Contractor & Supervision Team	During and after the project.
	Potential for short term house rental and other accommodation	• In the immediate communities	Contractor and Consultants personnel	During the project
	Increased livelihoods for fisheries, farmers, tourism & commercial operations	• Improvements in income and increase distribution	Surrounding Communities	During and after the project
	Increases in fees and taxes to the Port Authorities	• GOSVG income generation and improvement in services	GOSVG	During and after the project
	Availability of emergency access	• Allows for access to the area for heavy equipment by sea when other infrastructure linkages are lost or inadequate for emergency requirements	GOSVG	After the projects

D Monitoring Plan

The mitigation measures outlined in the ESMP require that active monitoring of the physical, biological and socio-economic environment be done to ensure compliance with the ESMP and the relevant legislations and regulations. In so doing, it ensures that the construction works have no adverse long term effects on the physical, biological and socio-economic environment. The purpose of having a monitoring plan is also to ensure that the mitigation measures are implemented in a timely manner and done so consistently.

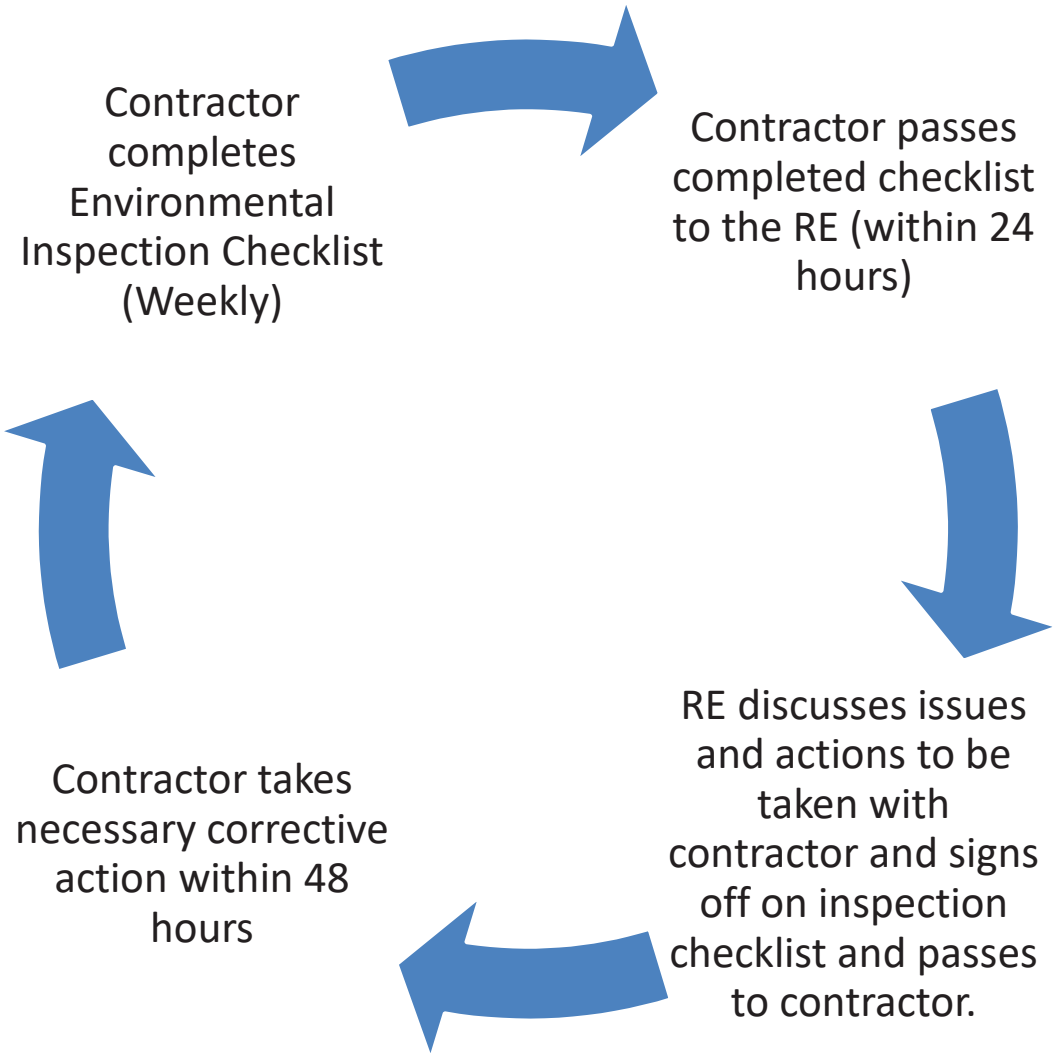
The monitoring plan identifies the parameters that need to be monitored, how often they need to be monitored and the appropriate reporting mechanisms that need to be undertaken. Any samples that are collected, such as soil or water samples will be analysed by available services from either GOSVG or as approved elsewhere. For any monitoring plan to be successful, it is crucial to have the necessary support mechanisms. These may be, but not limited to consultations with the local enforcement authority.

Parameter	**Frequency of monitoring**	**Institution (s) Responsible**	**Location of monitoring**
Physical Environment			
Earthworks: • All roads and tracks are marked • Machines are in a proper functional state	Weekly	Contractor/Engineer	Project Site
Water Quality: • *Surface water* drainage off roads • Cleaning of drainage structures (bridges, culverts, sluices) along roads and tracks • Observance of the integrity of buffer zones along water ways • Temperature (°C) • pH (6.5-8.5) • Conductivity (µs/cm) • Turbidity (ntu) • Oil & Grease (mg/l) • TDS (mg/l) • Dissolved Oxygen (mg/l	Commencement of contract and every other month thereafter	Contractor Contractor	Waterways surrounding project site and façade drains.
Noise • Decibel (100dB – daytime, 80dB night-time)	As needed	GOSVG local agency enforcement	Nearest resident to the project site
Waste Management • Compliance with mitigation measures outlined in ESMP • Littering • Waste accumulation & waste disposal procedures	Weekly Monthly	Contractor/Engineer	Project Site

Biological/Ecological Environment			
• Vegetation loss	On observance	Contractor/RE	Project Site
Socioeconomic Environment			
Conflicts: • Complaints lodged by residents or other institutions • Complaints lodged with the Employer	Monthly	CLO/EC and ESO	Project Site
Road safety: • Number of accidents/records • Number of fatal accidents/records • Number, type and position of advisory road signs/records	Weekly	The Engineer/ Contractor	Project Site including the main access roads
Health and Safety: • Emergency Response Plans, • Health and safety committees, • Status of first aid kits, fire extinguishers, spills kits • Implementation of OHS practices & the regular use of safety gear and personal protective equipment • Health conditions of staff, with particular interest to respiratory ailments • Weekly meetings will be conducted with the workforce on OHS concerns. In addition, peer education will be introduced on HIV/AIDS among other topics.	Weekly	RE/Contractor/LPA/ Ministry of Labour	Project Site
Land Use: • Illegal land use of sea defences and reserves • Access through private property	Ongoing	The Engineer/ Contractor	Project Area including all accesses to the site
Indigenous/Archaeological assets: • Auditing of archaeological resources	On observance	The Engineer/ Contractor	Project Area including all project sites.
Gender Employment			
Breakdown of males and females • Onsite employment of males and females and their roles and responsibilities	Monthly	Contractor	Project Area including all project sites.

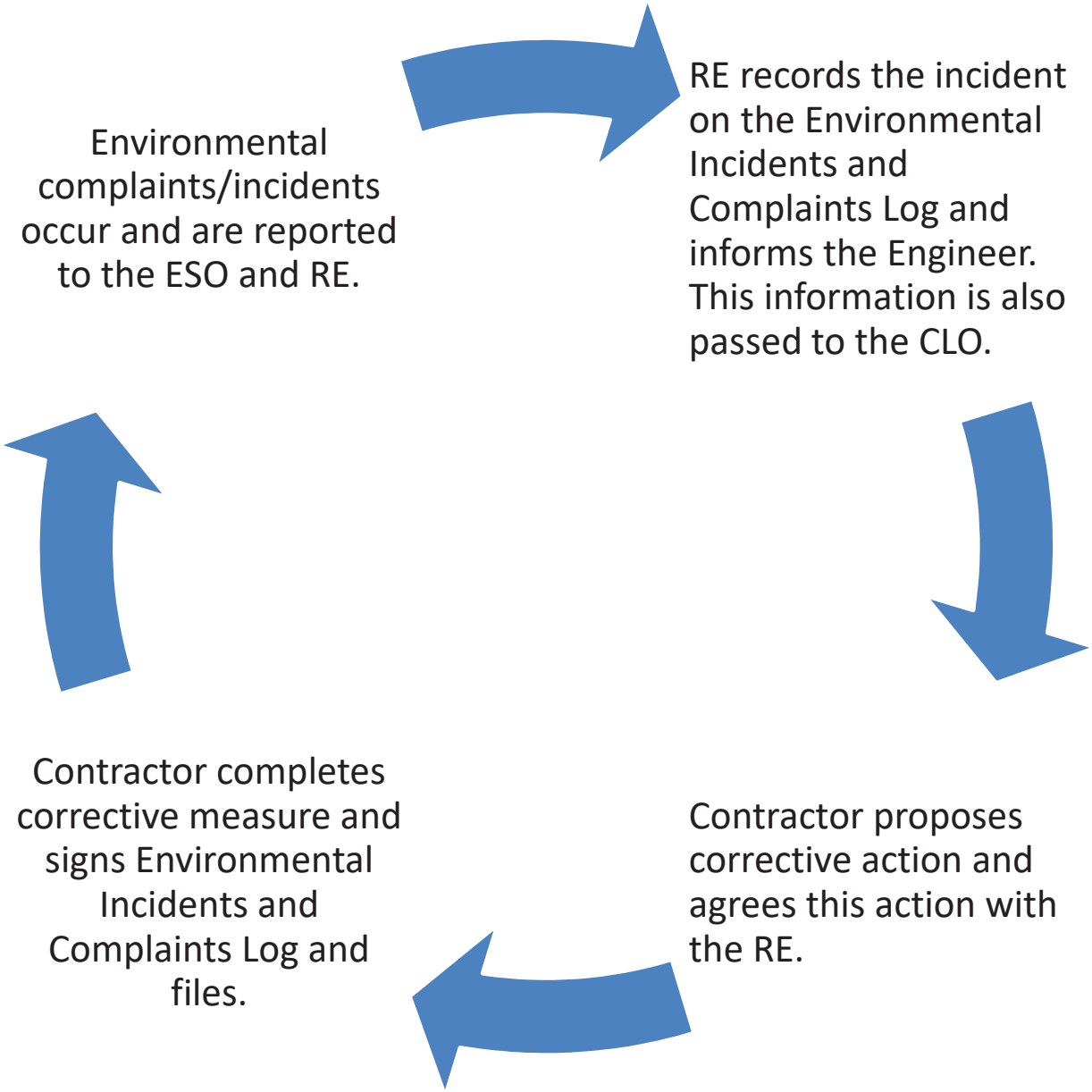
E Environmental Monitoring Procedure

The following flowchart shows the steps to be taken in the environmental monitoring procedure. An environmental monitoring checklist will be developed by the Engineer and RE based on the Required Mitigation Measures and will use it to check compliance in the field as completed by the Environmental Site Officer in duplicate. Each copy will be signed by the Environmental Site Officer and the Contractor's Foreman/Site Engineer; one signed copy will be submitted to RE for inclusion in monthly reports.



F Environmental Incidents and Complaints Procedure

The flowchart below outlines the procedure to be taken in the event of an environmental incident or should a complaint of an environmental nature be made about the project. A checklist is provided below and shall be completed by the Contractor's Environmental Site Officer (ESO) in duplicate. Each copy will be signed by the ESO and the Contractor's Foreman/Site Engineer; one signed copy will be submitted to RE.

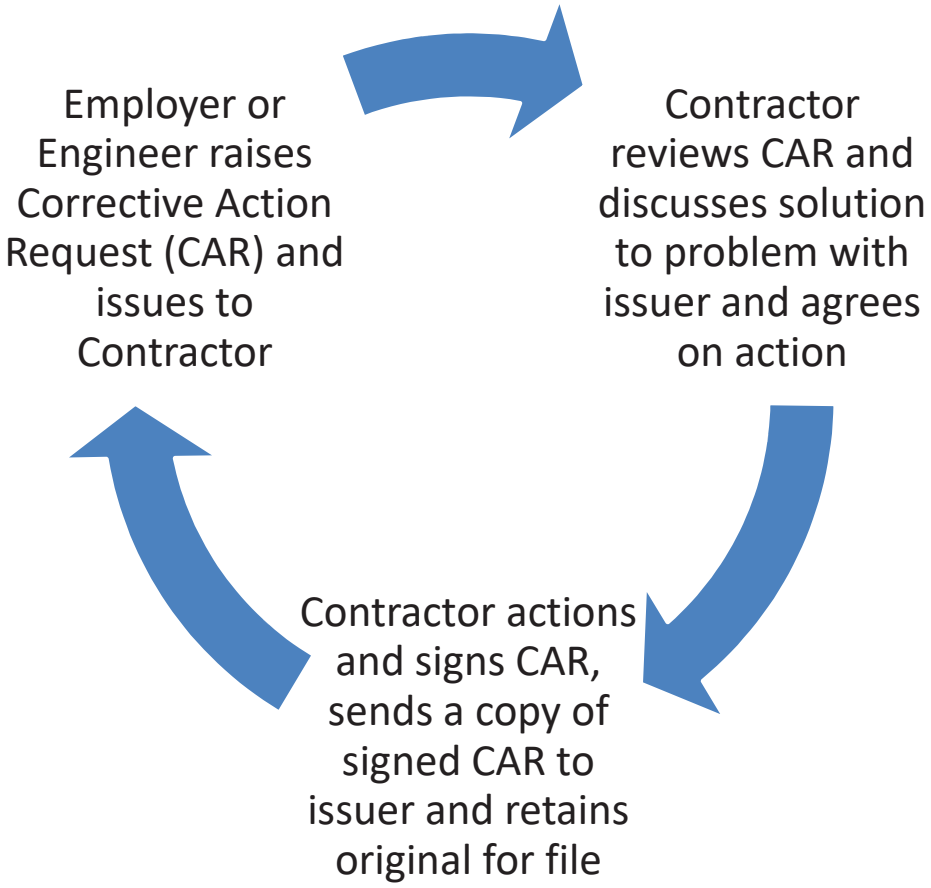


Environmental Incidents/Complaints Log

Nature of Incident/ complaint/ correspondence (Inform Client Representative)	Date Received/ Occurred	Name/address/ contact details of complainant	How was the incident/ complaint dealt with? When was action taken?	Date of any relevant correspondence	Signature of Contractor and date

G Corrective Action Request Procedure

This form may be completed by the Resident Engineer (RE) in consultation with the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology (MOFEPSDIT) as necessary; to issue a request for corrective action to the Contractor in respect of a particular environmental incident/complaint that has occurred or is likely to occur. Completed forms are to be kept readily available in the Project Environmental File for the duration of the Project during which time they can be inspected by the MOFEPSDIT or RE.

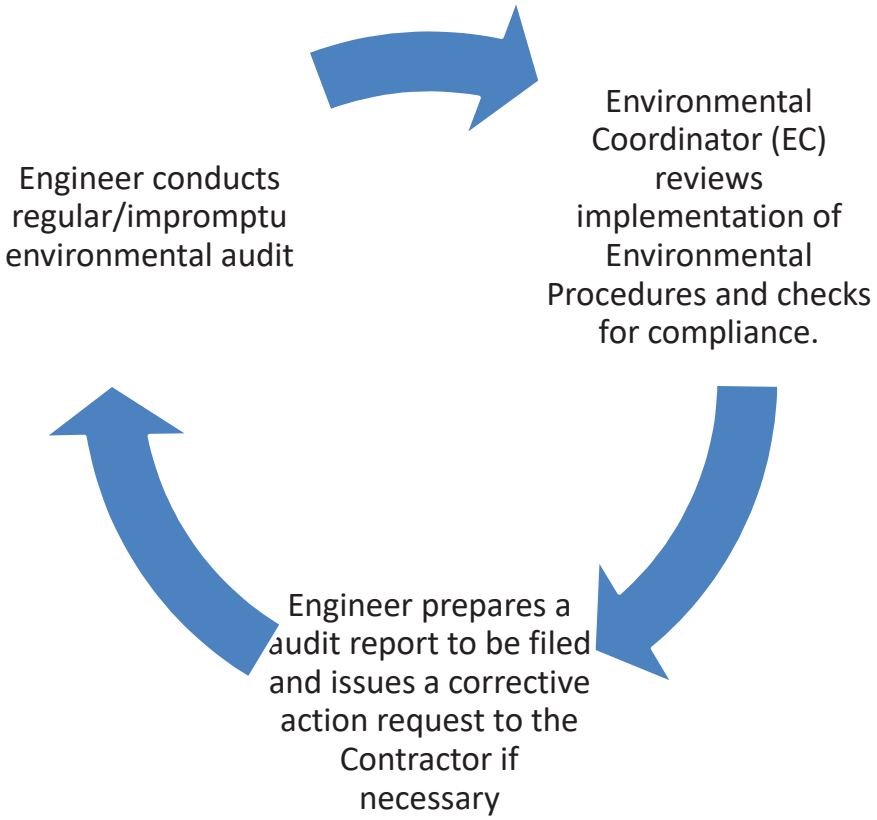


Corrective Action Request Form

Corrective action required and reasons	Date action to be completed by	Action taken by Contractor's Representative and date action completed

H Monthly Environmental Audit Procedure

This checklist is to be completed by the Environmental Coordinator (EC) employed by the Employer or by a duly designated officer of the Ministry of Finance, Economic Planning, Sustainable Development and Information Technology (MOFEPSDIT). Audits may be done either by scheduling with the Environmental Site Officer (ESO) of the Contractor or by impromptu visits to ensure compliance with the ESMP. The checklist will be a review of the Contractor's environmental file and records of all environmental inspections. However, the Resident Engineer (RE) will also carry out on site inspections to complete the Environmental Inspection Checklist above, to be kept on file for review by the Agency responsible for Environmental Protection.



Environmental Audit Checklist

Issue to be considered in the review	YES	NO	Comments and details of any corrective actions requested
Is there evidence that Contractor is undertaking weekly Environmental Inspections and filing the completed Inspection Checklist forms?			
Has the Consultant's Representative signed the completed checklist forms?			
Is there evidence that Contractor is maintaining the log of environmental incidents/complaints?			
Is there evidence that the Corrective Action Request (CAR) which have been issued have been signed off as completed by the Issuer of that CAR?			

I Emergency Preparedness and Response Plan

The Emergency Response Plan (ERP) is intended to minimise damage or manage accidents/incidents that may occur on site to prevent further injury or loss of life. Cuts, fractures and burns resulting from vehicular accidents, misuse of machinery/equipment and other tools are the more typical matters of concern in a construction setting.

Purpose

The purpose of the Emergency Response Plan is:

1. To set out procedures to be followed in case of emergencies;

2. To establish a chain of command in responding to emergencies;

3. To sensitise all construction personnel of the need to take preventive measures at all times, to protect themselves from accidents and prevent loss of life and damage to property and the environment.

Policies

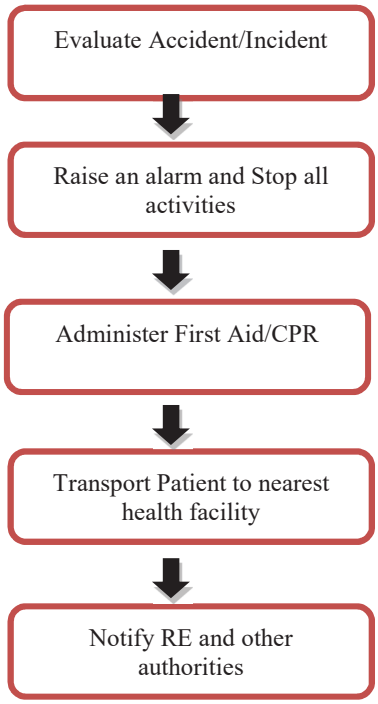
All personnel must be aware of, and take steps to manage hazards in their work area. Response procedures shall be posted at strategic points at all project sites and staff will be notified of the same during regular briefing sessions.

All incidents and emergencies will be recorded in the Accident and Emergency Record Book. Where necessary, the relevant notifications will be done to the Ministry of Labour by the designated Occupational Safety and Health personnel under the employ of the Contractor.

Emergency Medical Services and First Aid

A First Aid kit will be made available at all times by the Contractor at each work site. The first aid kit will correspond and be adequately equipped at all times for all employees on site.

Chain of Command



Capacity Building Measures

The Contractor is obligated to build the capacity of all employed personnel to address all environmental obligations to better implement approved construction practices and safety measures. In the event that time does not permit capacity building of employees, the Contractor shall employ qualified/certified experiences personnel to work. The objective is to ensure that each worker at the company takes responsibility for his safety and those around him/her. In addition, they will be responsible for the environment in which they are working and as far as possible prevent accidents/incidents through safe work practices.

J Occupational Health and Safety Procedures

The Contractor shall employ an Occupational Safety and Health Personnel who shall be present at all times during the construction works. This individual may be a member of the work force but duly trained in First Aid and CPR and shall act as the OSH representative for other arising OSH issues amongst the workers.

Industrial Accident Reporting

All industrial accidents/incidents causing temporary or permanent disability, fatality or damage to equipment shall be reported by the OSH personnel under the employ of the Contractor to management and supervisory consultant and client **within 24 hours**. Further reports to the Ministry of Labour, police and medical authorities as necessary will be the responsibility of the Contractor.

Personal Protective Equipment (PPE)

Personal protective equipment would be issued to all workers; these will conform to the standards specified below; these standards are rated specifically for construction sites. All workers or all persons visiting the work site will be required to wear a minimum of:

- High visibility/traffic vest
- Safety helmet (conforming to ANSI/ISEA Z89.1-2009) –Type 1 Class E
- Safety boots with steel toe (conforming to ASTM F2413-05 I/75 C/75)
- Earmuffs (NRR 28dB)
- Gloves (leather workman gauntlets)
- Goggles (Impact resistance)
- Life Jackets (US Coast Guard Approved #160.064/4085/0)

Every worker issued with PPE must use and wear them at work; failure to do so shall be liable to disciplinary actions by the Contractor and immediate removal from the site.

Fire Fighting

The possibility of fire on a construction site of this nature may stem from but not limited to overheating of machinery or oil spills. Fire extinguishers and sand buckets will be kept on site and placed at strategic locations within easy reach near said equipment. Safety equipment such as fire extinguishers will be checked to ensure they are still functional and the contents of first aid boxes with specific shelf-lives would be replaced or replenished before the expiry date.

General Health and Hygiene

All workers will be responsible for their own hygiene, including garbage and waste disposal; the Contractor will provide a garbage receptacle to be removed at the end of each work day. The Contractor will also be responsible for providing drinking water to workers.

Fuel and lubricating oils

All waste oils and used engine oils will be kept in drums clearly labelled and held in secure storage for disposal or reuse and shall not be left at the work site. The proper protective gear must be used at all times.

K Fire Prevention and Response Plan

In order to prevent fires and provide a plan, the potential hazards at a construction site must be identified. Some potential fire hazards to be avoided are listed below:

1. Accumulation of unnecessary combustible material
2. Improper disposal of smoking material e.g. throwing cigarette butts on the ground;
3. Improper use, handling and storage of flammable material e.g. gasoline, waste oil;
4. Improper housekeeping resulting in accumulation of flammable material e.g. paper, cardboard boxes, oil-soaked rags, flammable liquids;

Types of Fires and Fire Extinguishers

There are different types of fires and these determine the type of extinguisher to be used in an emergency. Fires can be classified into four general categories based on the type of materials or fuels involved:

a) Class A Fires: involve ordinary combustible material such as wood, paper, rags, rubbish and other solids.
b) Class B Fires: involve flammable or combustible liquids such as gasoline, fuel oil, paint and hydraulic fluids
c) Class C Fires: involve electricity or electrical equipment
d) Class D Fires: involve combustible metals such as magnesium

Classes A, B and C fires are the ones of major concern.

Fire Response Procedures

If there is a fire, employees would be required to:

1. Raise an alarm;
2. Attempt to extinguish the fire with the use of the fire extinguisher/sand bucket
3. Evacuate the area
4. Call Fire Service

L Oil Spill Prevention and Response Plan

Storage of Oil

Mismanagement of waste oil can lead to the contamination of water and soil. Many components of oil are toxic to living organisms. Contamination from waste oil results mainly from improper storage or disposal. Waste oil shall therefore be carefully stored.

In keeping with the Environmental and Social Management Plan, the following practices shall apply:

1. Waste oil must be stored in drums. Use of rusting drums shall be avoided as they are susceptible to leaks over time. Each drum must be labelled with the date that the accumulation started as well as the terms "Hazardous Waste", "Waste Oil", and "Toxic".

2. All drums containing waste oil shall be stored in the waste oil storage area which shall have retaining walls and floor made of material which is impervious to the flow of oil. The storage area shall have a clearly legible sign stating: "Waste Oil." The storage area shall also be protected from the weather by a shed. The drums shall be stored off the ground on raised pallets to facilitate detection of any leakage.

3. Weekly inspections of the waste oil storage area shall be carried out to check for any leakage or potential leaks. During these inspections the condition of the drums shall be checked. The floor and the palettes shall be checked for any sign of oil leakage.

Oil Spill Response Procedures

In the event of an oil spill the following steps shall be taken:

1. Evacuate the area and warn others as necessary
2. Contact security immediately
3. Ask for help if anyone is injured and/ or needs rescuing
4. Visually inspect the site of the oil spill to obtain enough information to describe the situation to security and response personnel. Be careful, be alert and keep clear if any hazardous chemical may be involved. The following minimum information shall be gathered:
    a) Spilt material (e.g. used oil or gasoline)
    b) Estimated quantity of spilt material (or surface area covered or rate of flow)
    c) Location and direction of the spilt material and direction of flow
    d) People involved, injuries

5. Help to direct response personnel to location of the spill

Since oil spills are likely to be small affairs[1], the Contractor shall maintain rags and old newspapers to sap up oil or fuel leaking from containers; such rags and newspapers shall be properly disposed at a designated landfill or disposal facility approved for such by the appropriate GOSVG Agency responsible for Environmental Protection (EC).

[1]Less than a 5,000 gals of fuel will be in storage at any one time…much of this fuel shall be put in drums so that the fuel can be taken to the various work sites.

M Traffic Management

Traffic, whether these are vehicles being used on the construction sites or by the public shall be managed to ensure minimal disruptions and prevention of accidents within the project area(s). Management will include:

- Heavy machinery and all other equipment shall as far as possible avoid use of the main road during peak hours for the transportation of materials.
- The Contractor shall adequately issue notices the community and general public through the Ministry.
- In the event of changes to routes or operating hours, the public shall also be notified.
- Project sites shall be appropriately cordoned to restrict access to the public.
- Construction signs, traffic cones and other barricade methods shall be employed to prevent access of public vehicles.
- Where there is likelihood that traffic will be disrupted on the access roads, traffic wardens shall be used to reduce delays and congestion.
- Equipment/Machinery shall be parked in a designated area, that is not close to main access roads. In the event that this is not possible, parking will be done in a properly lit area as far off the road as possible with reflective barricades, reflective triangles or reflective traffic cones appropriately placed in front of and behind the parked machinery/vehicle.
- Construction vehicles shall not exceed the statutory speed limit.