



Project Number JA-L1049

# ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

for the Health and Systems Strengthening Program for  
the Prevention and Care Management of Non-  
Communicable Diseases in Jamaica

**Phase 1 (St. Catherine)**

*Spanish Town Hospital, Greater Portmore Health Centre, St. Jago Health  
Centre and Old Harbour Health Centre*

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**Submitted by:**



**CL Environmental Co. Ltd.**

**Submitted to:**



**Inter- American Development Bank (IDB)**

**Project Number JA-L1049**

**ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)  
FOR THE HEALTH AND SYSTEMS STRENGTHENING PROGRAM FOR THE  
PREVENTION AND CARE MANAGEMENT OF NON COMMUNICABLE DISEASES IN  
JAMAICA, PHASE 1 (ST. CATHERINE)**

*Submitted to:*

**INTER- AMERICAN DEVELOPMENT BANK (IDB)**

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**March 2023**

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## LIST OF ACRONYMS

Acronym	Definition
A&E	Accident and Emergency
AMSL	Meters Above Mean Sea Level
AOI	Area of Influence
CEO	Chief Executive Officer
ED	Enumeration District
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
ESA	Environmental and Social Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
GPHC	Greater Portmore Health Centre
HVAC	Heating Ventilation and Air Conditioning
ICU	Intensive Care Unit
IDB	Inter-American Development Bank
IFC	International Finance Corporation
JPS	Jamaica Public Service
KMA	Kingston Metropolitan Area
MC	Municipal Corporation
MLSS	Ministry of Labour and Social Security
MOHW	Ministry of Health and Wellness
NCD	Non- Communicable Diseases
NEPA	National Environmental Planning Agency
NEPM	North Eastern Parks and Markets Limited
NRCA	Natural Resources Conservation Authority
NWC	National Water Commission
ODPEM	Office of Disaster Preparedness and Emergency Management
OHHC	Old Harbour Health Centre
PIOJ	Planning Institute of Jamaica
PM10	Particulate Matter 10 microns
PPE	Personal Protective Equipment
RHA	Regional Health Authorities
RINA	Rina Consulting S.p.A.

Acronym	Definition
SA	Service Area
SDC	Social Development Commission
SEP	Stakeholder Engagement Plan
SJHC	Saint Jago Park Health Centre
SMO	Senior Medical Officer
STATIN	Statistical Institute of Jamaica
STH	Spanish Town Hospital
UNOPS	The United Nations Office for Project Services
WHO	World Health Organization
WRA	Water Resources Authority
WWTP	Waste Water Treatment Plant



## EXECUTIVE SUMMARY

### PROJECT BACKGROUND

The Ministry of Health and Wellness (MOHW) is currently undertaking the Health Systems Strengthening for the Prevention & Care Management of Non- Communicable Diseases (NCD) Programme, with the objective being to improve the health of Jamaica's population by strengthening comprehensive policies and improved access to an upgraded and integrated health network. Phase 1 of the programme focuses on the hospital and health centre facilities in the parish of St. Catherine, namely **Spanish Town Hospital (STH)**, **St. Jago Park Health Centre (SJHC)**, **Old Harbour Health Centre (OHHC)** and **Greater Portmore Health Centre (GPHC)**. To review the existing environment and social context at each facility, assess the potential impacts of the rehabilitation and expansion activities and propose mitigation plans, the following were prepared:

1. Environmental and Social Management Plan (ESMP)
2. Environmental and Social Assessment (ESA)
3. Stakeholder Engagement Plan (SEP)

This report details the constituents of the **Environmental and Social Management Plan (ESMP)**, a basic instrument of environmental and social management to mitigate, prevent, or reduce the environmental and social risk and impacts identified and evaluated throughout the environmental and social risk and impact assessment. This ESMP is an update of that conducted for the MOHW in 2018 by RINA and takes into account the IDB Guidelines for the Environmental and Social Performance Standards (Inter-American Development Bank, 2021).

### CONTRACTOR'S CODE OF CONDUCT

A Code of Conduct has been prepared to ensure, so far as is reasonably practicable, the safety, health and welfare of all employees, visitors and contractors engaged in any activity on any hospital or health centre under the Ministry's direct control.

### PRE-CONSTRUCTION PHASE

Based on field observations and a desktop review, activities must be conducted or implemented, prior to the construction phase, to guarantee compliance with environmental and safety guidelines. Activities common to all four (4) facilities include a Training Program – Environment, Health and Safety; Communication Strategy; Hazardous Material Management; Biodiversity Management Plan; and Due Diligence Procedures for Photovoltaic Systems. Other facility-specific activities include Asbestos Containing Building Material (ACBM) Management, Daycare Facility and Laboratory, Pharmacy, Nursing Quarters and Maintenance Storage.

## CONSTRUCTION PHASE

The upgrade of facilities to the proposed type includes current infrastructure improvements, purchase of medical equipment, and the construction of new wards, surgical theatres, and intensive care units, among other functional areas. With this, the following main programme actions are outlined:

- Debris Waste Management Plan
- Solid and Hazardous Waste Management Plan
- Wastewater Management Plan
- Traffic Management Plan
- Mitigations Measure for Noise and Vibration, Airborne Emissions and Contaminants
- Heritage and Cultural Management Plan
- Grievance Redress Mechanism (GRM)
- Livelihood Restoration Plan (LRP)
- Occupational and Community Health and Safety Risk Management Plan
- Emergency Response Management Plan
- Monitoring and Supervision ESHS Compliance Report

## OPERATION PHASE

The main activities and associated plans applicable to all four (4) facilities during the operational phases of the project include:

- Solid and Hazardous Waste
- Medical Waste Management and Disposal Plan
- Stormwater and Wastewater Management Plan
- Occupational and Community Health and Safety Risk Management Plan
- Emergency Response Management Plan
- Traffic Management Plan
- Indoor Air Quality

# 1.0 INTRODUCTION

## 1.1 PROJECT CONTEXT

### 1.1.1 Programme Description

The Ministry of Health and Wellness (MOHW) is currently in the process of developing a comprehensive 10-year Strategic Development Plan for the health sector as part of the integrated health service delivery framework. The objective of the Strategic Development Plan is to provide an overarching strategic direction to the Ministry, which is aligned with Jamaica's commitment to universal access to health and universal healthcare coverage.

The MOHW received a loan from the Inter-American Development Bank (IDB) to support the Health Systems Strengthening for the Prevention & Care Management of Non- Communicable Diseases (NCD) Programme. The programme objective is to improve the health of Jamaica's population by strengthening comprehensive policies for the prevention of Non-Communicable (Chronic) Diseases (NCDs) risk factors and improved access to an upgraded and integrated primary and secondary health network in prioritized areas with an emphasis on chronic disease management, that provide more efficient and higher quality care. Phase 1 of the programme focuses on the hospital and health centre facilities in the parish of **St. Catherine**, namely **Spanish Town Hospital, St. Jago Park, Old Harbour and Greater Portmore Health Centres** (Figure 1-1).).

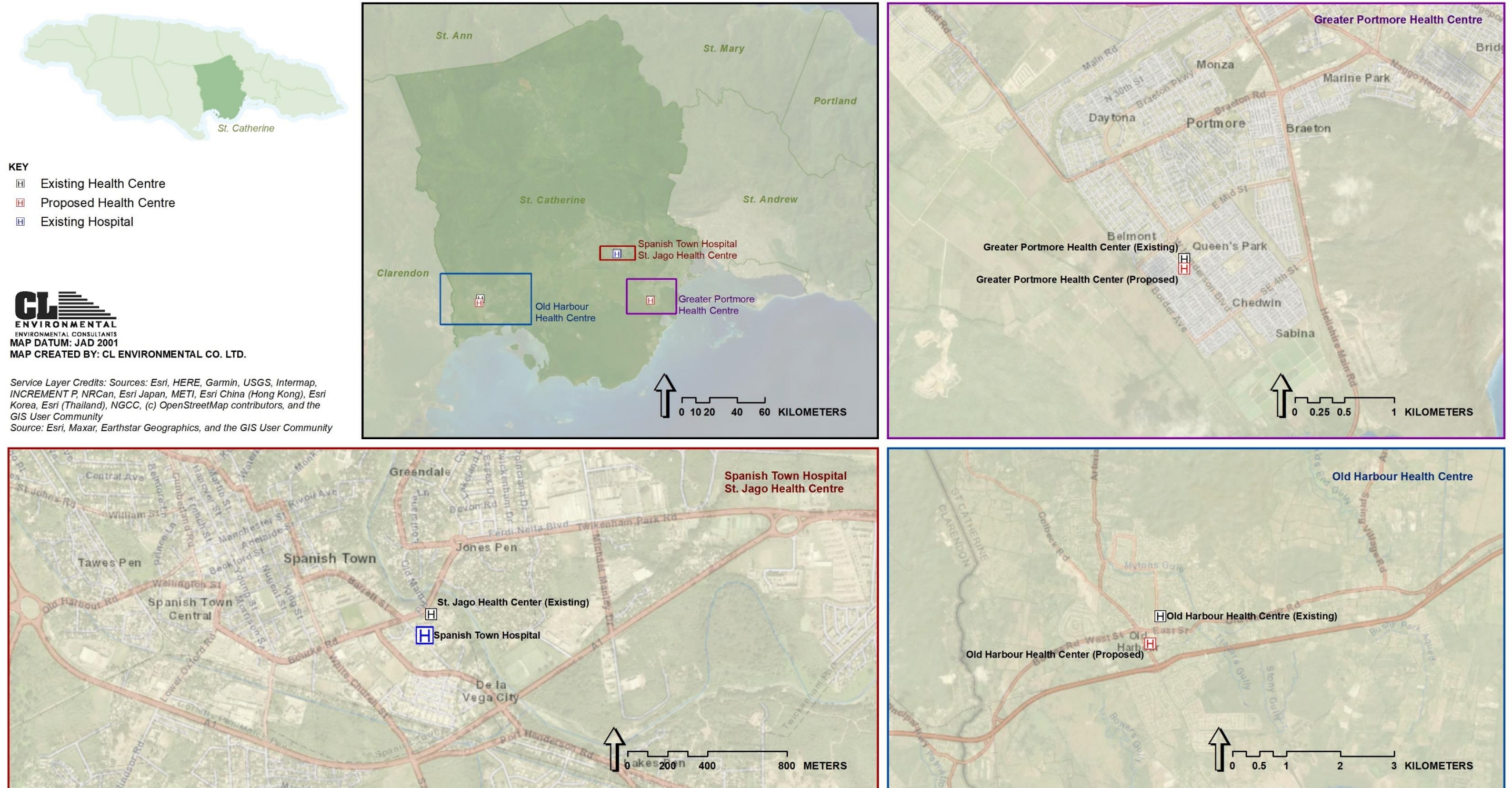
### 1.1.2 Environmental and Social Assessments and Plans

The implementation of the rehabilitation and expansion activities for the Jamaican hospitals and health centres generates both positive and negative environmental and social impacts within the area of influence (AOI). In order to review the existing environment and social context, assess the potential impacts and propose mitigation plans, the following were prepared:

1. Environmental and Social Management Plan (ESMP)
2. Environmental and Social Assessment (ESA)
3. Stakeholder Engagement Plan (SEP)

This report details the constituents of the **Environmental and Social Management Plan (ESMP)**. An ESMP is a basic instrument of environmental and social management and a firm commitment during the development of rehabilitation and improvement in activities, in order to mitigate, prevent, or reduce the environmental and social risk and impacts that were identified and evaluated throughout the integral process of the environmental and social risk and impact assessment. This ESMP is an update of that prepared for the MOHW in 2018 by RINA (RINA, 2018); it takes into account the IDB Guidelines for the Environmental and Social Performance Standards (Inter-American Development Bank, 2021).







## 1.2 INSTITUTIONAL STRENGTHENING RECOMMENDATIONS

Based on the evaluation conducted, it appears that the Ministry of Health and Wellness (MOHW) requires additional skilled resources to implement management plans specifically focused on environmental issues, with a strong emphasis on oversight and compliance. It may be useful to conduct an institutional strengthening review to determine where to best locate hospital and health centre-focused environmental compliance and oversight resources. Based on the compliance issues around wastewater management and hazardous waste disposal at the hospital and health centres, it is suggested to procure a minimum of one (1) trained environmental officer at the MOHW, with joint reporting obligations to MOHW and NEPA. The following are the proposed activities that need to be incorporated.

- Expand the responsibilities of the MOHW or create a new division to oversee all environmental compliance at the hospital/health centre level. With these added responsibilities, new staff needs to be hired.
- One full-time staff to oversee hospital compliance with environmental regulations. At least one full-time environmental specialist staff person should be hired to liaise with NEPA to develop a plan for bringing the hospital into compliance with all environmental regulations, including discharge limits, and disposal solid and hazardous waste. The staff also should be responsible for establishing guidelines along with NEPA for pollution prevention plans at each hospital/health centre and implementing key performance indicators at each.
- Increase staff in the Waste Management Unit to oversee hospital disposal of hazardous waste and medical waste. The staff should be responsible for upgrading and developing the procedures and guidelines to be implemented in each hospital, oversee compliance and implement key performance indicators.
- Staff should cross-report to MOHW and NEPA to ensure adequate environmental resource support.
- If environmental specialists with the adequate expertise are not available, the position could be outsourced to a third party company with the mandate to provide capacity building to less experienced personnel.
- Maintenance coordinators at Regional Health Administration (RHA) should be properly trained in environmental compliance by MOHW (or an appropriate third party) and required to report to the MOHW on a regular basis.
- Develop/upgrade regulations for handling medical records at the hospital level. Responsibility for compliance should be at the Regional Health Administration (RHA) level with oversight by MOHW.
- While the MOHW has a grievance mechanism to address healthcare related grievances this is not the same as addressing grievances related to construction. The MOHW will need to ensure that staff is adequately trained to address the very specific grievances related to construction activities if they wish to house these grievances under the same department. Staff should be trained in order to be able to implement the grievance mechanism plan outlined in the ESMP.

## 1.3 ACTIVITIES

### 1.3.1 Pre-Construction

In order to accommodate construction and rehabilitation upgrades, each facility requires a well-planned, staged, and phased approach in order to limit the impacts on current operations. This includes dissemination of information about the proposed project, in particular those to be directly affected. Stakeholder should be informed at least 2 months before the start of construction. Pre-Construction activities include:

- **Spanish Town Hospital and St. Jago Park Health Centre**
  - Inform vendors situated at the main entrance of the St. Jago Park Health Centre of dislocation due to construction of new main entrance.
  - Inform hospital and health centre staff of the relocation of the laboratory and pharmacy.
- **Old Harbour Health Centre**
  - Inform beekeeper and vendor of dislocation due to proposed project
  - Inform resident who uses the proposed site as a driveway to access his property, that this will no longer be accessible due to the proposed project.
  - Inform stakeholders and residents living to the south of the proposed project site, that the short cut from Walker Road to enter East Street will no longer be accessible due to the proposed project.
  - Inform the Lion's Club Centre of the proposed project. This facility is being used to temporarily house a church.
- **Greater Portmore Health Centre**
  - Inform stakeholders which use the football field for recreational purposes that the field will no longer be accessible due to the proposed project.
- **General**
  - Conduct a full assessment regarding available space within the facility that could be used during construction.
  - Develop a thorough project blueprints (drawings) and schedule, explaining (in detail) the project construction and rehabilitation works that will be completed per facility.
  - Medical waste management infrastructure (disinfection facility and/or incinerator) should be included in the upgrade works blueprints.
  - Determine the various phases of construction (e.g., construction schedule, based on the final blueprints of the construction and rehabilitation works to be completed).
  - Determine which activities will require the closure of wards or healthcare services, as well as any activities that will require abatement and decontamination (e.g., asbestos).
  - Appoint an Environmental, Health and Safety (EHS) Manager for each facility to monitor adherence to its tailored environmental management plans.
  - Conduct a risk assessment for all potentially hazardous construction and rehabilitation works to be conducted.

- Provide training regarding the appropriate PPEs and EHS mitigation measures to limit workplace hazards to workers and staff.
- Obtain all necessary local environmental permits and licences; follow applicable local and international guidelines and regulations.
- Review the specifications and dimensions for all new equipment and machinery to ensure its compatibility with the construction schedule; construction plans should accommodate the specific requirements of all new machinery and equipment. It is recommended that an architect with a specialization in health care infrastructure review applicable documents
- Develop a communication strategy to inform stakeholders (internal and external) of the construction timeline.

Conduct a launch workshop with the executing agency and contractors and subcontractors at each facility to review requirements and timeline.

### 1.3.2 Construction

Construction activities include:

- Provide transportation to affected patients that need to be moved to a neighbouring hospital during construction and rehabilitation works
- Follow specifically tailored environmental and social management plans
- Once the construction and rehabilitation construction documents are finalized, the EHS Manager should monitor the contractor's adherence to the ESMP, IFC's General EHS Guidelines for Health Care Facilities<sup>1</sup>, Management Plans, and International Standards

### 1.3.3 Operation

Operational activities include:

- Implement environmental and social plans during operation.
- Adhere to NEPA air and water quality monitoring requirements.
- Develop and implement a hospital-specific pollution prevention plan, as well as a medical waste plan (e.g., incinerator requirements, sharps management, wastewater treatment) to comply with the IFC's General EHS Guidelines for Health Care Facilities and International Standards. Implement necessary technical EHS trainings to hospital staff and contractors.

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<sup>1</sup> IFC's General EHS Guidelines for Health Care Facilities.

## 1.4 SECURITY OF MEDICAL RECORDS

During construction and operation, measures should be taken to ensure the safeguarding of medical records.

### 1.4.1 During Construction

- Create a locked, supervised medical record room or area in an area protected from the construction works and in accordance with all other safety codes (water, fire, sprinkler systems, etc.) in which to store patient medical records.
- Assign staff to monitor the medical record room and ensure that only authorized staff is allowed to access patient medical records.
- Develop and maintain an emergency plan in the event of fire, flood or other natural or manmade events that enable to medical records to be removed to a safe and secure location.

### 1.4.2 During Operations

- Assign staff to monitor the medical record room and ensure that only authorized staff is allowed to access patient medical records.
- Create an electronic record controlled exclusively by staff authorized to supervise the medical record area in which is logged the date, time, name and title of all individuals who requested or gained access to patient medical records, the records accessed, and indicating if any records were removed and when the records are returned.
- Maintain an emergency plan in the event of fire, flood or other natural or man-made events that enable to medical records to be removed to a safe and secure location.



## 2.0 CONTRACTOR'S CODE OF CONDUCT

### 2.1 INTRODUCTION

MOHW maintains a positive attitude towards Health, Safety and the Environment. This Code of Conduct has been prepared to ensure, so far as is reasonably practicable, the safety, health and welfare of all employees, visitors and contractors engaged in any activity on any hospital or health centre under the Ministry's direct control.

This Code of Conduct is designed to ensure that safe systems of work are in place, safe processes and procedures are designed, communicated, and implemented and that personnel engaged in work activities that impact on the physical environment have the competence and expertise to undertake those activities.

All Contractors and their employees are required to comply with this Code of Conduct and to adopt any additional measures as may be necessary to minimise the risks of dangerous, unhealthy, or unhygienic conditions arising from the activities of their employees.

The Project Manager, unless otherwise stated, shall be the MOHW's representative responsible for ensuring that the Contractor undertakes the works in accordance with the terms of the contract or order and that the requirements set out in this Code of Conduct are complied with.

The issue of this document does not relieve the Contractor of responsibility for taking all other reasonable precautions included in specification of work and general conditions of contract for building and civil engineering work. The Contractor shall give the name of his Safety Supervisor and the names of all his employees working on the hospital/health centre site to the Project Manager before work commences.

This Code of Conduct has been prepared to ensure, so far as is reasonably practicable, that Contractors adopt safe working methods to comply with statutory obligations. It must NOT be assumed that the contents embrace every contingency or hazard, and that observance of the Code of Conduct relieves Contractors of their statutory obligations.

#### 2.1.1 General Requirements

1. The Contractor shall provide and maintain such temporary fencing, hoarding, fans, planked footways, guard rails, gantries and the like as may be necessary for protecting the public and all other persons using the premises or site, including unauthorised persons.
2. The Contractor shall keep the site and property clean and tidy and not allow rubbish and scrap, etc., to accumulate. He should confine to as small an area as practical any operations that will affect the site. Work locations to be defined in consultation with the Project Manager.

3. The Contractor shall not enter any areas other than those allocated to him except as may be necessary for the purpose of carrying out his work. In such events, express permission must be given by the Project Manager.
4. The Contractor shall provide the Project Manager with a copy of his Health & Safety Policy, together with his Method Statement and Risk Assessment for approval before commencing work. These documents shall be maintained and updated as the work proceeds.
5. Possession of the site or property is granted solely for the purpose of proceeding regularly and diligently with the works. Access shall not be permitted to third parties especially children for any purpose other than directly related to the expeditious achievement of completion of the works without specific prior authority from the Project Manager.
6. Permission and all necessary permits to work must be obtained by the Contractor prior to commencement of work. The MOHW should be notified before delivery of any material commences in order that storage facilities can be arranged.
7. The Contractor and his Sub-Contractors must take reasonable care firstly to ensure their employees are safe in and about their work, and secondly that all other persons who may be affected by the work, or the carrying out thereof, are safe. This means, for example, that they must provide safe means of access, working places and systems of working, competent worker, adequate supervision and adequate plant and appliances in good order and safe condition.

### **2.1.2 Conduct and Behaviour**

1. The MOHW is strongly committed to the principles of equality and diversity, and it is central to the values that we hold. All individuals should be treated fairly and with respect and dignity and the MOHW considers the contractor responsible for ensuring their workforce do not undertake any form of discrimination or harassment of a patient, staff member or visitor of the health facility.
2. In the event that any person or persons engaged by the Contractor or their sub-contractors' workforce discriminate or harass a patient, staff member or visitor of the health facility, following a formal investigation appropriate action will be taken which might include removal of the person(s) from site, or it might be treated as a breach of contract.

### **2.1.3 Before Starting Work**

1. It is the responsibility of the Contractor to familiarise themselves with the current parking regulations and display a vehicle permit where applicable.
2. Before commencing work on any part of the health facility the Contractor shall contact the Project Manager and inform him that he is about to start work.
3. The Project Manager shall advise the Contractor of any special precautions to be taken or any special local circumstances that may affect the work and, where appropriate, issue a permit-to-work.

4. The Project Manager or his designate shall periodically visit the site or property to monitor health and safety. The MOHW's representative may issue instructions to the Contractor and the instructions shall be observed.

5. The Contractor shall make sure that the MOHW's Safety Guidelines are made known to and understood by his representatives and work people and must co- operate fully with the Guidelines. Unsafe working practices by the Contractor's workpeople will not be tolerated.

#### **2.1.4 Breach of Rules**

1. It is acknowledged by the Contractor that any breach of this Code of Conduct, or any relevant statutory provision by their employees or their sub-Contractors or their employees shall be deemed to be a fundamental breach of contract, which entitles the MOHW at its election to terminate the contract without prejudice to any right to the MOHW to claim damages in respect of the breach.

## **2.2 HEALTH SAFETY AND ENVIRONMENT**

### **2.2.1 Introduction**

This document is issued as a Safety Guidance Note to Contractors/Sub Contractors employed on MOHW's Health Systems Strengthening for the Prevention and Care Management of Non-Communicable Diseases Programme Contracts. It is designed to ensure a safe environment for the Contractor, health facility staff, patients and visitors and must be adhered to at all times.

### **2.2.2 Provision Of Safety Information**

1. No work may commence before the Contractor/Sub-Contractor has liaised with the Project Manager responsible for the works.

2. All Contractors must have a safety briefing prior to commencing any works and signed for on the Project Manager's onsite sign-in Register.

3. All Contractors must wear and display a formal badge of identification. The Project Manager will supply valid parking permits where required. Contractors must not block fire exits or routes with vehicles or equipment. Parking must be in authorised areas only.

4. The Contractor should similarly report the completion of a job. This requirement applies to each and every job.

5. At the initial contact with the Project Manager, you will be advised of any special hazards in the area where you are carrying out the work and of the procedures and precautions to follow to ensure that the (potential) risks to you or your staff arising from these hazards are controlled. In such instances, the Contractor shall, before commencing any work, furnish the Project Manager with a

detailed written task/site specific Risk Assessment on how he intends to control any hazards identified and seek their agreement.

6. In some cases, it may be necessary to demarcate the working area e.g., using barriers in order to prevent intrusion into the working area and Caution Notices displayed. The need for such demarcation should either be addressed in the contract or discussed with the Project Manager.

### 2.2.3 Competence Of Employees and Notification of Hazards

1. All Contractors must ensure that its employees are adequately trained and experienced to carry out their work safely.

2. To this end you must also ensure that specific hazards likely to be experienced on the project, whether notified to them or discovered by them, are notified to their workforce together with any precautions to be taken and local rules to be observed. Similarly, such hazards should be notified to their Sub-Contractors and where discovered by them to the Project Manager.

### 2.2.4 Materials And Equipment

1. All materials and equipment used by the Contractor must be of good construction, sound material, adequate strength, free from patent defects, properly maintained and competently operated and routinely inspected by a Competent Person (insurance inspector) when required.

2. All equipment used by Contractors including cranes (The Factories Act - Building Operations and Work of Engineering Construction (Safety, Health and Welfare) Regulation, 1968), lifting machines and lifting gear must be safe and fully efficient in use. Guarded and equipped with safety devices wherever required and tested and examined in accordance with regulations and when required, marked as to the noise level that is likely to be generated by the equipment. It is essential that equipment to be used is effectively silenced. Periodic maintenance must be carried out in accordance with the manufacturer's instructions. Statutory registers, certificates, and notices when appropriate are to be displayed or readily available for inspection.

3. All equipment and materials are to be stored safely on site and under cover to prevent deterioration. The area in which items are to be stored will be designated by the Project Manager. The Contractor shall be responsible for the security and loss of any materials.

4. All materials whether permanent or temporary used on the works are to be safe and properly used and any manufacturer's instruction or known hazard relating to use, handling, or storage, is to be made known to the Project Manager as well as their own and any other Sub-Contractors Workforce.

### 2.2.5 Waste Management

1. Contractors are responsible for the removal of their own waste. Any waste that is disposed of by a contractor on the health facility property must be agreed to by the Project Manager, prior to disposal.

2. In the event of accidental spillage, Contractors should be aware and abide by the MOHW's spillage procedure.
3. Contractors may not deposit any waste, chemical or any other substances whatever into the drains/waterways or gullies.
4. Waste materials are to be removed from site each day. Skips will be located in an area agreed by the Project Manager. This may be amended by the Project Manager to suit the required works.
5. Waste removed from site must comply with the conditions of the Natural Resources Conservation Authority environmental permit and the National Solid Waste Management Authority approvals.

### 2.2.6 Personal Protective Equipment (PPE)

1. Contractors not wearing appropriate PPE will be told to stop all work until properly kitted out for the activity. Repeated offenders will be excluded from the site.
2. The Contractor shall ensure when appropriate, that his workpeople are supplied with, appropriately trained, and use correctly, adequate, and suitable personal protective equipment, e.g., safety helmets, goggles, safety harnesses, reflective vests, etc. Suitable footwear and clothing shall be worn at all times.

### 2.2.7 Permit To Work

Hazardous work situations exist which can only be carried out under a Permit to Work System. These include:

- Hot Work Permit
- Work on Pressure/Steam Systems
- Work on excavations
- Work in Confined Spaces
- Work on Medical and Industrial Gases
- Work on High & Low Voltage Systems
- Work at height/roof works

1. It is imperative that in such circumstances all affected parties are informed and agree to the Permit to Work System to be adopted. Such work will then be carried out strictly within the limitations of the Permit to Work System under the direction of the person named as Co-ordinator of that operation.
2. Persons issuing the permits must be competent and authorised in writing by the Health, Safety, and Environment Coordinator.

3. Persons receiving the permits must be competent to accept a Permit to Work. Persons working in confined spaces must be medically fit. Hot work permits should normally be issued on a daily basis, the Authoriser is required to undertake a site visit to issue and clear the permits.

### 2.2.8 Ladders And Scaffolding

1. All scaffolding shall be erected only by trained and authorised competent persons.
2. Evidence of competency should be available for inspection.
3. Any scaffold which remains erected for more than one week should be inspected at least once per week and after bad weather which may have an effect on strength and stability. The inspection is to be carried out by a Competent Person and a register of such inspection(s) to be retained on site for inspection by the Project Manager.
4. Ladders used must be in good general condition and free of defects. Aluminium alloy or other ladders that will conduct electricity must not be used where there is danger from overhead electrical conductors.
5. All ladders must be secured at the upper resting place or at the bottom. If either of these methods are not possible a second person must be in attendance to “foot” the ladder.
6. Ladders, when not in use, must be made safe against unauthorised use, i.e., by children or intruders.

### 2.2.9 Protection Of Other Persons

1. Precautions must be taken to prevent the possibility of loose material or tools from accidentally falling from buildings. When necessary, barriers (e.g., Catch nets) and notices should be used to exclude access to areas directly below where the Contractor is working.
2. In addition to having suitable controls in place for the safety of your employees, Contractors must ensure the safety of all persons on site while undertaking work activities. Controls should be in accordance with the following reference. It should be noted that cones and tape are not usually effective and therefore physical barriers should be used.

### 2.2.10 Weapons, Violence, Smoking, Alcohol and Drug Use

1. MOHW’s commitment to providing a healthy and safe working environment is built upon a workplace that is free of impairment. While performing work for MOHW, Contractors and Representatives may not be impaired by any substance (including prescription drugs), alcohol or use illegal drugs.
2. MOHW operates a ‘No Smoking’ and ‘No Drug Use’ policy which must be complied with.

3. MOHW does not tolerate acts or threats of physical violence, intimidation, and harassment. Engaging in violence or threatening or intimidating behaviour may result in termination of your contract.

4. Unless otherwise expressly permitted by MOHW, no Contractor or Representative may carry, use, or store any type of weapon on the work site, in MOHW vehicles or when Contractor is engaged in performing work for MOHW. The term “weapon” includes firearms, ammunition and explosives but does not include tools used for legitimate business purposes.

### **2.2.11 Asbestos**

If asbestos or asbestos based materials are identified as being present in a building, a specialist contractor from the MOHW’s approved list of contractors shall be appointed to remove the materials. All materials shall be removed, handled, and disposed of as required by the Natural Resources Conservation Authority’s Guidelines for the Management of Asbestos.

### **2.2.12 Underground/Overhead Services**

Contractors engaged in operations where underground or overhead services may exist, must take adequate steps to locate, identify and mark such services and complete a Permit to Excavate. Relevant precautions must then be taken to prevent injury or damage to person or property

### **2.2.13 Emergency Response Plan and Disaster Risk Management Act**

1. Contractors should design and implement an Emergency Response Plan (ERP) (in consultation with the Office of Disaster Preparedness and Emergency Management (ODPEM) and the Fire Department) in the event of any emergency.

2. Contractors should adhere to applicable conditions of the Disaster Risk Management Act (DRMA), including Covid-19 protocols.

### **2.2.14 Accident Reporting**

1. The Contractor must have an “appointed person” on site at all times whilst work activities are being carried out.

2. The Contractor must notify the Health and Safety team of any accidents that occur. In respect of all notifiable and reportable or dangerous, the Contractor must inform, as soon as practicable, the Health and Safety Coordinator, the Project Manager, and any statutory agency.

3. The Contractor shall record all accidents, which arise out of the Contract Works in areas under his control. The Contractor shall keep these records for the minimum statutory time period and shall provide copies of accident forms and accident.

### **2.2.15 Noise And Vibration**

1. The contractor must ensure that any work activity or equipment brought onto the work site conforms to the requirements of the Natural Resources Conservation Authority Environmental Permit. Where requested, the Contractor will be required to provide evidence of written noise assessments carried out as a requirement of the permit.
2. The Noise at Work Regulations impose limits on exposure time of employees to harmful noise. The duty is on the employer of the employee so exposed. It is essential, therefore, that when any operation of the Contractor is likely to expose any employee on-site to an average noise level of 80 dBA or above, that assessments are carried out and findings acted upon.
3. In addition to the foregoing, noise must be kept to a minimum at all times and must not exceed acceptable or locally specified rules and any conditions relating to noise imposed by the environmental permit.

### **2.2.16 Traffic Management**

1. The Contractor should develop a Traffic Management Plan in consultation with the National Works Agency, the highway operators and facility stakeholders where relevant.
2. The Contractor should ensure the appropriate signage; flag persons and appropriate vehicular/pedestrian barriers be used where necessary.

### **2.2.17 Stakeholder And Community Engagement**

1. The Contractor should develop a Stakeholder and Community Engagement Plan to ensure surrounded businesses and residents are aware of work to be conducted and they are given a chance to voice their concerns etc.
2. The Contractor should develop a grievance redress mechanism for any business or residents negatively affected by construction activity. The grievance redress mechanism should assure complainants that their confidentiality will be protected.

## **2.3 ON-SITE FACILITIES**

### **2.3.1 Portable Toilets**

The Contractor should provide adequate toilet facilities for use by staff and sub-contractors. Care should be taken to adhere to the Ministry of Health's guidelines of a ratio of 25 workers per chemical toilet. These should be adequately maintained (cleaning, disposal, etc.).



### 2.3.2 Fuel Storage and Dispensing

If the Contractor requires fuel storage and dispensing on site, then an area must be identified in agreement with the Project Manager or his designate, and the requisite permits obtained from the relevant authorities.

## 2.4 Contractor Acknowledgements

I/We acknowledge that I/We have read and are aware of the foregoing Code of Conduct and undertake and agree that I/We and my/our employees and my/our Sub-Contractors and their employees shall at all times observe and confirm with each and every provision of the said Code of Conduct and agree to do everything possible to protect myself and others from danger when working at the MOHW health facilities. I/We acknowledge that the said Code of Conduct is incorporated into and forms part of the contract between the MOHW and the Contractor. If any of the terms of this Code of Conduct are inconsistent with the said Contract, the terms of the Contract shall prevail.

Contractors must ensure that all of their staff, and Sub Contractors are made aware of the content of these guidelines during their recorded induction to site when working on the premises of the MOHW health facilities.

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

TELEPHONE No: \_\_\_\_\_

POSITION: \_\_\_\_\_

NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

Please return to:

Ministry of Health and Wellness

10-16 Grenada Way, Kingston 5

## 3.0 PRE-CONSTRUCTION PHASE

Based on field observations and a desktop review, the following activities must be conducted or implemented, prior to the construction phase, to guarantee compliance with environmental and safety guidelines.

The various activities are grouped based on those that are common to all four (4) facilities, and those that are specific to each facility. These are outlined below.

### 3.1 PRE-CONSTRUCTION ACTIVITIES COMMON TO ALL FOUR FACILITIES

- Develop thorough project blueprints and schedule, explaining (in detail) the project construction and rehabilitation works that will be completed.
- Determine the various phases of construction (e.g., construction scheduled, based on the final blueprints of the construction and rehabilitation works to be completed).
- Conduct an environmental audit to quantify hazardous materials on site and determine best appropriate location and storage type. The audit should include oxygen and propane tanks.
- Develop stormwater management plans in conjunction with future construction works to determine upgrades and maintenance.
- Provide training regarding the appropriate PPEs and EHS mitigation measures to limit workplace hazards to workers and staff.
- Obtain all necessary local environmental permits; follow applicable local and international guidelines and regulations.
- Appoint an Environmental, Health, and Safety (EHS) Manager to monitor adherence to its tailored environmental management plans, including identifying training needs for staff and update the emergency response plan.
- Review the specifications and dimensions for all new equipment and machinery to ensure its compatibility with the construction schedule; construction plans should accommodate the specific requirements of all new machinery and equipment. It is recommended that an architect with a specialization in health care infrastructure review applicable documents.
- Develop a communication strategy to inform stakeholders (internal and external) of the construction timeline.
- Conduct a launch workshop with the executing agency and contractors and subcontractors to review requirements and timeline.
- Senior staff and operation staff should be engaged in the final design to identify the placement of new washing stations in order to mitigate infectious diseases.
- Inform local food vendors regarding the schedule for construction.

### 3.1.1 Training Program – Environment, Health and Safety

As part of the pre-construction procedures, the contractual staff will attend a training program and orientation which will include discussions on environmental and occupational health and safety issues linked to their job roles. This will be coordinated with each area manager after reviewing the experience and knowledge of the worker, in order to provide adequate training. The company will develop training programs for workers that are mentioned below:

**Table 3-1 Staff Induction**

Groups	Activities
Applicants to work	Short induction on the company's safety policies.
New workers	General induction on safety and on the tasks that they will develop in their work, focusing on safety, first aid, occupational health, environment, etc.
Permanent workers	Periodic update on security issues and on special techniques related to their work. This training should be carried out according to a program, both internally and externally.

New workers will be trained in the correct use of tools and equipment, comply with safety procedures and emergency response according to the nature of their work. Worker training will be reinforced through notices, posters, signage, and all possible means, periodically carrying out the respective follow-up.

Additional training procedures will be developed, as necessary, to reflect the level and type of technical knowledge required for a specific position. The training will include on-the-job training, as well as training through talks and discussions aimed at specific work activities. The level of training will increase within the level of responsibility of the employee, the complexity of the team and the process involved. Some topics to be discussed in the trainings are:

- Occupational Health
- First Aid
- Proper Use of Personal Protective Equipment (PPE)
- Ergonomics: General guidelines and recommendations.
- Occupational Health and Safety and Environmental Policy
- Environmental aspects: solid waste management, noise control, effluents management, etc.
- Unsafe acts: dangers and risk.
- Report of accidents and incidents.
- Waste Management
- Emergency Response Procedures

### 3.1.2 Communication Strategy

A communication strategy is needed to keep stakeholders and the wider population updated before the project begins and throughout as the project progresses.

All project-specific stakeholder engagement will include the following:

- Stakeholder identification and analysis including the identification of vulnerable and at-risk groups.
- Stakeholder engagement planning.
- Disclosure of information highlighting potential risks and impacts that might affect communities and disproportionately affect vulnerable and disadvantaged groups. Measures taken to avoid and mitigate these should be outlined.
- Meaningful stakeholder engagement, disclosure, outreach and communication to affected communities. This should be ongoing and iterative throughout the project cycle, starting as early as possible, including different stakeholder categories. This process is equitable, non-discriminatory and free of intimidation or coercion.
- Stakeholder engagement that is inclusive, culturally appropriate and takes into consideration the feedback provided through such engagement.
- Consultation processes that takes into account the need for participation. The feedback and concerns of women, men and vulnerable, at-risk groups will be recorded.
- Responsive approach to addressing grievances including the establishment of a Grievance Redress Mechanism to receive and facilitate resolution of concerns and grievances about any environmental and social performance of the individual projects, their contractors or any other agents operating on behalf of the PEU.

A standalone Stakeholder Engagement Plan (SEP) is submitted in support of this ESMP.

### 3.1.3 Hazardous Material Management

Existing hazardous wastes generated may include contaminated soil, waste fuel and lubricants, oil oxygen tanks, lighting equipment, dried sewage, medical waste and human waste. Good management practices of the Hazardous Waste (HW) include carrying out a proper packaging, labelling and storage. In this respect the obligations of the undertaking of HW are:

- Storage containers should be in good condition with no risk of spills or leaks. There should be no mixing of waste streams. Containers should have a lid and must be stored in a correct and safe place away from any potential risk of container breach.
- For liquid hazardous waste, containment basins should be watertight so as to avoid contamination from spills. The containment basins should be able to contain 110% of the total volume stored.

The hazardous waste storage area(s) shall be secured, and access shall be restricted only to personnel assigned the responsibility of handling hazardous waste. Hazardous waste containers will be labelled with the following information and hazard warning symbols:

- Its contents;
- The date of packing;
- The words, “hazardous waste”, if hazardous;
- The hazardous characteristics, if any;

- Its origin location; and
- A contact name and phone number

All collected hazardous wastes generated from designated points will be shipped to a location with the means of properly disposing hazardous waste. Hazardous waste must be stored for collection and disposal by the preapproved contractor and permits from relevant Agencies.

### 3.1.4 Biodiversity Management Plan

The proposed works are expected to have minimal negative impacts on the fauna and flora assessed on the various property. The proposed additions and/or rehabilitation will occur in highly disturbed areas that have been sufficiently modified by human activities over the years. None of the species encountered on the properties were endemic nor do they have any special conservation status by the IUCN.

For St. Jago Park Health Centre, there might be a slight displacement in some of the bird species that were observed throughout the assessment; however, these species are adapted to urban life and should easily migrate to nearby spaces; they will also return to the area after construction activities end.

As part of the plan, it is recommended that:

- For all facilities, ornamental and native trees should be planted (as part of a Landscaping Plan) wherever possible on the properties, after construction is complete to encourage faunal diversity and increase the aesthetics of the grounds.
- For Spanish Town Hospital;
  - Some of the fruit trees, such as Mango (*Mangifera indica*) and older trees (much larger DBH classes, >50 cm) such as Guango (*Samanea saman*) and Cannon Ball Tree (*Couroupita guianensis*), should be retained and integrated into the development to attract animals that feed on them, utilize these large trees as habitat. Fruit and ornamental trees should be planted where possible when construction is completed to bolster the flora present. The retention of some of the older/larger, and the addition of trees post-construction will also provide some amount of shade and aesthetic value on the property while increasing fauna diversity.
  - The large open space to the south of the facility has the highest fauna diversity; as such, some of the vegetation should be retained or integrated into the development to encourage fauna diversity post-construction.
- For St. Jago Park Health Centre, the large open space to the south of the facility has the highest faunal diversity; as such, some of the vegetation should be retained or integrated into the development to encourage fauna diversity post-construction.
- Regarding trees to be retained, those with trunks greater than or equal to eighteen centimetres (18cm) measured at a height of one metre (1m) above the ground should be clearly marked (flagged using fluorescent tape at three levels on the trunk) and mapped for preservation prior to the clearance of the project site.

The proposed development may have an impact on the Freshwater ecosystem of the Rio Cobre (STH and SJHC), such as reduced water quality as a result of excess sedimentation and runoff from construction activities.

As part of the plan, it is recommended that materials should be stockpiled in appropriate areas, away from the river, in order to limit or prevent excess sedimentation in the river. Barriers or settling pond areas should be utilized during construction.

### 3.1.4.1 Tree Compensation Plan

For **Spanish Town Hospital and St. Jago Park Health Centre**, sixty (60) trees were within the project footprint to be removed (Table 3-2). This table represents the replacement cost for the trees to be removed during the pre-construction and construction phases of the project. These values do not represent the loss of ecosystem services provided. To arrive at the compensation value, the replacement cost was doubled to take into account the loss of ecosystem services during the period of reestablishment of seedlings and trees. Therefore, the total compensation cost is US\$2,786.61 x 2 = **US\$5,573.22**.

Table 3-2 Replacement Cost of tree species to be removed

Scientific Name	Common Name	Number	Unit Cost (USD)	Total (USD)
<i>Annona squamosa</i>	Sweet Sop	3	\$40.00	\$120.00
<i>Magnifera indica</i>	Mango	4	\$60.00	\$240.00
<i>Spathodea campanulata</i>	Flame of the Forest	1	\$33.33	\$33.33
<i>Azadirachta indica</i>	Neem	2	\$26.66	\$53.32
<i>Enterolobium cyclocarpum</i>	Elephant Ear Tree	2	\$20.00	\$40.00
<i>Delonix regia</i>	Royal Poinciana	8	\$33.33	\$266.64
<i>Cordia collococca</i>	Clammy Cherry	1	\$40.00	\$40.00
<i>Senna siamea</i>	Cassia tree	4	\$40.00	\$160.00
<i>Pisidia piscipula</i>	Jamaica Dogwood	2	\$50.00	\$100.00
<i>Ficus sp</i>		2	\$33.33	\$66.66
<i>Thespesia populnea</i>	Portia Tree	1	\$33.33	\$33.33
<i>Phoenix sp</i>	Palm*	9	\$86.67	\$780.03
<i>Veitchia merrillii</i>	Palm tree*	2	\$86.67	\$173.34
<i>Ficus benjamina</i>	Weeping Fig	7	\$33.33	\$233.31
<i>Melaleuca viminalis</i>	Bottlebrush	5	\$33.33	\$166.65
<i>Bauhinia sp</i>	Poor Man's Orchid	2	\$40.00	\$80.00
	Unknown	2	\$40.00	\$80.00
<i>Ziziphus mauritiana</i>	Coolie Plum	1	\$40.00	\$40.00
<i>Samanea saman</i>	Guango	1	\$40.00	\$40.00
<i>Couroupita guianensis</i>	Cannonball Tree	1	\$40.00	\$40.00

Scientific Name	Common Name	Number	Unit Cost (USD)	Total (USD)
			<b>TOTAL</b>	<b>\$2,786.61</b>

*\*replanted as trees*

*Others are replanted as seedlings*

### 3.1.5 Due Diligence Procedures for Photovoltaic Systems

Facility Alternative Energy is also considered, e.g., a photovoltaic system, mounted on the roofs. Based on specifications, the contractor will be required to provide; details of purchase, supplier's name and location. Due diligence will be carried out by the PEU to rule out the risk of forced labour in the supply chain of these components. Due diligence on the primary supply chain for the solar panels will be done after the final tendering. A final plan will be put in place outlining the procedures when the final construction contract is put in place.

## 3.2 PRE-CONSTRUCTION ACTIVITIES SPECIFIC TO EACH FACILITY

### 3.2.1 Spanish Town Hospital

#### 3.2.1.1 Asbestos Containing Building Material (ACBM) Management

Based on the age of the facilities, Asbestos Containing Building Materials (ACBM) may be present in minimal quantities. Given that major demolition activities will be conducted at **Spanish Town Hospital**, this Section would apply mainly to this location only.

Where asbestos materials are in good condition and unlikely to be disturbed, they do not present a risk. However, where the materials are in poor condition or are disturbed or damaged, asbestos fibres may be released into the air. If these fibres are inhaled, they can cause serious lung diseases, including cancer. Asbestos is considered hazardous material and should be handled according to local and international regulations.

#### Acceptable Workplace Exposure Limits / Standards

NEPA has established Natural Resources Conservation Authority Guidelines for the Management of Asbestos, 2014 (National Environmental and Planning Agency, n.d.), which were approved by The National Resources Conservation Authority (NRCA). The guidelines were developed to document procedures and requirements for the abatement and removal of Asbestos Containing Materials. It is intended to support the Agency's environmental management and applies to all parties responsible for premises that contain asbestos or are suspected to contain asbestos. The guidelines are also relevant to all contractors recognized by NEPA and approved to safely and professionally abate asbestos.

**Table 3-3 Acceptable Asbestos Work Exposure Standards**

**Source: (NEPA, 2014)**

Form of Asbestos	Work Exposure Standards
Chrysotile	An Average concentration over any 4 hour period of 0.1 fibre per millilitre of air.
Amosite, crocidolite, fibrous actinolite, fibrous anthophyllite, and fibrous tremolite	An average concentration over any 4 hour period of 0.1 fibres per millilitre of air.

#### Asbestos Survey for Rehabilitation and / or Demolition Works

Prior to any construction work, an asbestos survey should be conducted at each facility. The survey to be conducted should be done by an authorized contractor. The survey must locate and identify all ACM before any construction work begins at a stated location or on stated equipment at the hospital. It will involve destructive inspection and asbestos disturbance. The survey should determine if the suspected ACM actually contains asbestos and whether or not the material is friable or non-friable. Samples should be shipped to a laboratory certified and accredited in asbestos analysis and analysed using the Polarized Light Microscopy (PLM) Method. The project area must be vacated during the survey and certified 'fit for reoccupation' before anyone occupies said space.

#### Asbestos Abatement Work Plan for Facilities

The authorized contractor should develop an asbestos abatement work plan tailored to each specific facility and rehabilitation works and it should contain at a minimum the following items:

- Identification
- Preparation
- Removal
- Decontamination

The contractor in charge of the construction phase will be the responsible to supervise the work of the authorized contractor who will develop the asbestos abatement plan. Local companies, C.L. Environmental Company Limited and Environmental Solutions Limited (ESL) can test for the presence of asbestos in air and bulk samples. Companies that provide asbestos abatement include: Pro SWAT Limited (Mr. Randall Williams), Initial Trading (Mr. Calvin Braham), and GDSS (Mr. Gordon-Smith).

For the management of Asbestos Containing Materials (ACM), NEPA has guidelines in that the final land disposal for ACM is facilitated through the NSWMA via land disposal within a designated "cell" of their disposal facility. Asbestos removal, packaging and disposal are regulated by NEPA; a permit to undertake the removal and packaging work will be sought from NEPA. Upon satisfactory completion of NEPA paperwork and queries, a permit to remove and package asbestos will be issued.

Personal and perimeter asbestos air sampling and monitoring will have to be conducted during the ACM removal exercises. Personal sampling pumps fitted with asbestos Phase Contrast Microscopy (PCM) 25mm 0.8µm cassettes set to a flow rate of 2.5 litres/minute, will be affixed to workers involved in ACM removal and pumps will also be placed in and around the work area to monitor any asbestos



fibres in the air. Samples should be shipped to a laboratory certified and accredited in asbestos analysis and analysed using the NIOSH 7400 Phase Contrast Microscopy (PCM) Method.

If the ACM is determined to be friable, the asbestos abatement contractor should first wet the ACM with a surfactant in an attempt to keep fibres to a minimum during removal procedures. ACM removed should be placed in either 45 gallon drums or 20-foot or 40-foot containers, depending on how much ACM was estimated during the initial survey. Upon completion of the abatement exercise, the container or drum should be sealed and transported to the permitted NSWMA disposal site where it will be entombed.

Post-abatement air sampling and monitoring of the abatement area will be conducted daily and considered final when the levels post abatement are  $\leq 0.1$  fibre per cubic centimetre of air as an eight (8) hour time-weighted average (TWA).

### **3.2.1.2 Other Activities**

- Procure lockers and/or assign a record room or area in a zone protected from the construction works and in accordance with all other safety codes (water, fire, sprinkler systems, etc.) in which to store patient medical records.
- Conduct a full assessment regarding available space within the hospital that could be used during construction.
- Medical waste management infrastructure (disinfection facility and/or incinerator) should be included in the upgrade works blueprints.
- Determine which activities will require the closure of wards or healthcare services, as well as any activities that will require abatement and decontamination.
- Coordinate the procurement/rental of suitable vehicles to transport affected patients to a predetermined neighbouring hospital during construction and rehabilitation works if it is determined that the hospital needs to be closed during upgrade works.
- Conduct an environmental audit to quantify hazardous materials on site and determine best appropriate location and storage type. In the case of Spanish Town Hospital, the audit should include oxygen and propane tanks.
- Inspect the current wastewater treatment plant system and determine demand and current capacity. The assessment should include testing of hospital effluent discharges.

### **3.2.1.3 Daycare Facility**

The proposed project will result in the loss of the daycare building and services provided to STH staff. During Stakeholder Consultations, it was determined that the daycare facility on site was highly valued by staff members. Alternative locations both on and off site have been discussed, but no final determination has been made. Staff are not in agreement for an off-site location due to the surrounding areas being volatile. Alternative daycare locations will be identified by the MOHW and presented to staff as part of a targeted consultation three (3) months prior to pre-construction activities.

#### **3.2.1.4 Laboratory, Pharmacy, Nursing Quarters and Maintenance Storage**

Other existing services include a pharmacy, a laboratory, nursing quarters, maintenance storage, staff parking and a number of both underground and overhead utility services to facilitate the proposed construction. The pharmacy and laboratory will be temporarily relocated to the north-western corner of the property (Figure 3-1). These buildings are currently under construction and are estimated to be completed by March 30, 2023. The existing Nursing Quarters was primarily being used as storage. The items being stored in the storage areas including the concrete structure and the storage container, along with the items in the Nursing Quarters will be relocated to the Manpower Building and Five (5) Storage Containers currently being constructed as illustrated in Figure 3-1.

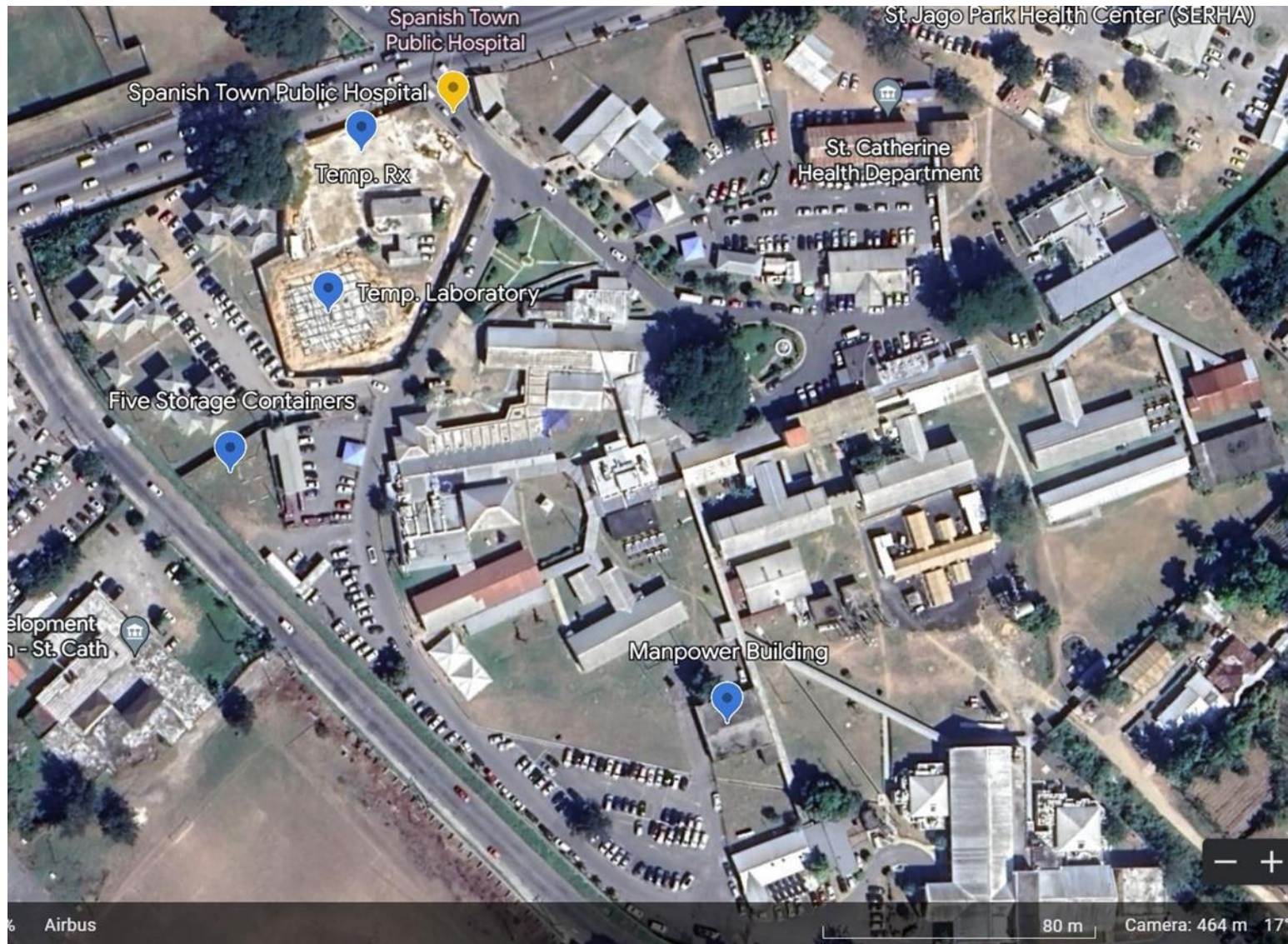


Figure 3-1 Map showing locations of the temporary laboratory and pharmacy and the Manpower building and area for the Storage Containers

### 3.2.2 St. Jago Park Health Centre

- Conduct a full assessment regarding available space within the health centre that could be used during construction.
- Medical waste management infrastructure (disinfection facility and / or incinerator) should be included in the upgrade works blueprints.
- Determine which activities will require the closure of wards or healthcare services, as well as any activities that will require abatement and decontamination (e.g., asbestos).
- Conduct an asbestos assessment, including testing, to determine the presence and quantity of Asbestos Containing Building Material (ACBM). See Section 3.2.1.1 for abatement details.
- Inspect the current waste water treatment plant system and determine demand and current capacity. The assessment should include testing of effluent discharges.

### 3.2.3 Old Harbour Health Centre

- Install fencing along the perimeter of the site.
- Have consultations with bee farmer to remove apiary located on property.
- Have consultations with the Lion's Club Community Centre regarding disruption during pre-construction phase.

### 3.2.4 Greater Portmore Health Centre

- Conduct a full assessment regarding available space within the health centre that could be used during construction.
- Medical waste management infrastructure (disinfection facility and / or incinerator) should be included in the upgrade works blueprints.
- Determine which activities will require the closure of wards or healthcare services, as well as any activities that will require abatement and decontamination (e.g., asbestos).
- Conduct an asbestos assessment, including testing, to determine the presence and quantity of Asbestos Containing Building Material (ACBM) See Section 3.2.1.1 for abatement details.

Table 3-4 Environmental and Social Monitoring Key Performance Indicators (during Pre-Construction)

Key Performance Indicators	TimeLine	Responsibility
Formation of Committees <ul style="list-style-type: none"> <li>• Communication</li> <li>• Training</li> <li>• Asbestos</li> </ul>	One month prior to construction activities	PEU Contractor
Site Preparation: <ul style="list-style-type: none"> <li>• Code of conduct and Staff Training</li> <li>• Acquisition of Sufficient PPE and ER Equipment and Supplies</li> <li>• Hoarding</li> <li>• Fencing and Signage</li> <li>• Removal of Assets, Construction Debris and Hazardous Materials</li> <li>• Tagging of Trees for preservation</li> </ul>	Day 1  Prior to Week 1 of any activity  Day 1 Day 1 Upon completion of hoarding and fencing	PEU Contractor



Key Performance Indicators	TimeLine	Responsibility
Security for site and staff	Prior to Site Activity Day 1	
Permit Requirements: <ul style="list-style-type: none"> <li>Notification to relevant agencies and stakeholders</li> </ul> Pre-approvals: Waste Disposal (Construction Debris and Solid Waste)	As outlined in the permit	PEU Contractor
Community Wellbeing/Concerns: <ul style="list-style-type: none"> <li>Employment</li> <li>Grievances which may arise</li> <li>Any emerging issue</li> </ul> GBV, SEA, SH, SOD grievances	Continuous	PEU Contractor Relevant Committees
Livelihood Restoration Plan Implementation of: <ul style="list-style-type: none"> <li>Relocation</li> <li>Business Training</li> </ul>	One month prior to construction activities	PEU

## 4.0 CONSTRUCTION PHASE

### 4.1 OBJECTIVES

The main objective of the program is to rehabilitate (i.e., upgrade and expand) one hospital and three health centres in Jamaica as part of Phase 1 of “Support for the Health Systems Strengthening Program for the Prevention and Care Management of Non-Communicable Diseases” project, financed in part by the IDB.

Within Jamaica’s public sector, health services are delivered through a network of primary, secondary, and tertiary healthcare facilities comprising of twenty-five (25) hospitals, of which twenty-three (23) are classified according to type (i.e., A, B, or C), specializations, bed capacity, and services offered.

Table 4-1 Hospital and Health Centre Improvements for Phase 1 of the project

Facility	Location	Current Type	Proposed Type
Spanish Town Hospital	Spanish Town, St. Catherine Parish	B	A
St. Jago Park Health Centre	Spanish Town, St. Catherine Parish	4	5
Old Harbour Health Centre	Old Harbour, St. Catherine Parish	3	4
Greater Portmore	Greater Portmore, St. Catherine Parish	3	4

The upgrade of the facilities to the proposed type will include expansion works, which include current infrastructure improvements, purchase of medical equipment, and the construction of new wards, surgical theatres, and intensive care units, among other functional areas.

As part of the technical assistance to the Program, the MOHW of Jamaica engaged the United Nations Office of Project Services (UNOPS) to conduct a study, entitled, “Needs Assessment and Analysis of Alternatives for the Strengthening of the Infrastructure and Medical Equipment.” The assessment included an evaluation of each hospital’s current infrastructure and medical equipment.

### 4.2 MAIN PROGRAM ACTIONS

The following sections describe the main program actions applicable to all four (4) facilities during the construction phase of the project.

#### 4.2.1 Debris Waste Management Plan

In the construction stage, debris waste will be generated. The following measures will be taken to manage this kind of waste during construction:

##### 4.2.1.1 Conditioning

- Generated debris waste will be stacked in designated, appropriately marked areas. These areas will be covered or watered while they are in the facilities to avoid the generation of dust.

#### 4.2.1.2 Collection

- The established collection route sheets will be strictly followed, as well as the frequencies and schedules of internal collection.
- After carrying out the waste, it has to be weighed and registered.

#### 4.2.1.3 Transportation

- Construction or demolition waste will be removed every week.
- Transportation will be made through the service of a company duly registered and authorized to provide this service. It must transport the solid waste to a sanitary landfill authorized by the corresponding authority.
- Before transport, ESHS personnel must be verified that the vehicles are equipped with safety equipment, such as fire extinguishers, first aid kit, toolboxes, etc.

#### 4.2.1.4 Final Disposition

- Final disposal will be made through the service of a company duly registered and authorized to provide this service.
- The companies that perform the final disposal in the landfill must have the proper authorization of the competent authorities and municipalities in their jurisdiction. Waste will be disposed of at the Riverton City Disposal Facility (Figure 4-1).

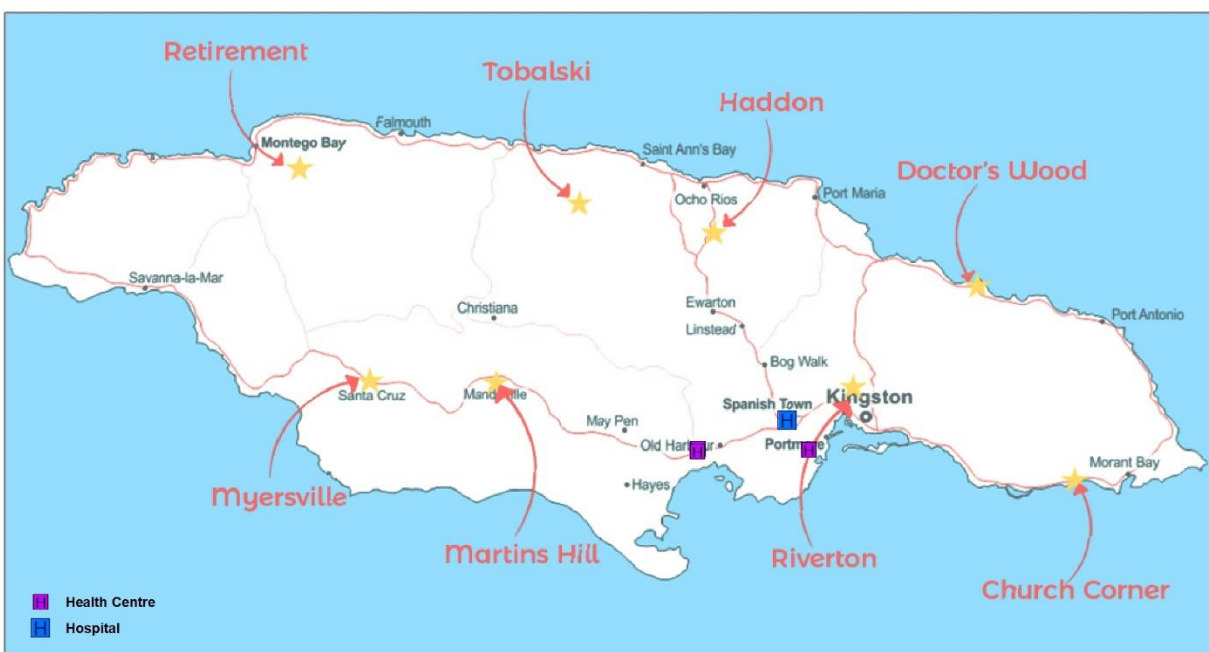


Figure 4-1 Disposal facilities, Jamaica

## 4.2.2 Solid and Hazardous Waste Management Plan

In the construction stage, solid waste to be generated is anticipated to be paint containers, metal waste, etc., which can be hazardous waste or common waste (recyclable and non-recyclable).

- Common waste generated by workers, which can be domestic, recyclable such as paper, cardboard, glass, etc. or non-recyclable.
- Hazardous waste like painting packaging, epoxies, varnishes etc.

The following measures will be taken to manage the waste during construction:

### 4.2.2.1 Minimization

The following measures must be enforced to reduce the production of the waste detailed above:

- Separate and classify mixtures of various types of waste with unknown compositions to ensure their proper disposal.
- Be aware that the use of materials and products that generate hazardous waste could be substituted by less polluting materials.
- Avoid the generation of odours from decomposing organic components.
- Obtain agreements for the return of containers and packaging to the suppliers. – Train personnel in waste minimization.

### 4.2.2.2 Conditioning

Storage and temporary storage points will be established in the expansion, construction, and rehabilitation site.

- Select the types of containers or bins and determine the quantity to be used for each area.
- Determine the quantity, colour and capacity of the bags (must be at least 20% greater than the capacity of the container) to be used according to the type of waste.
- Avoid bagging organic residues (food remains) containing liquids.
- The personnel in charge of the cleaning will place the containers with their respective bags in the generation points.
- Strategically place containers as close as possible to the generation source.
- Verify the fulfilment of the conditioning according to the type and volume of waste generated by the service.
- The bags containing solid waste, conditioned by the waste generators, must be hermetically sealed before they are deposited in the corresponding containers.
- The tanks for the deposit of the waste must be differentiated and labelled according to the type of waste that belongs in them and must be located in strategic and visible places.
- Hazardous construction waste, which may be the packaging of paints, epoxies, varnishes, etc., will be segregated from recyclables such as steel and wood.
- Common and hazardous solid waste will be collected and transported to the Central Storage, to be later transported and brought to its final disposal by an authorized company.



#### 4.2.2.3 Primary Storage

- In this stage waste management is carried out by the waste generator and the cleaning personnel. It consists in the generated waste being deposited in the receptacles or buckets for its subsequent internal collection. The objective of primary storage is to appropriately dispose of generated waste, while also differentiating the various types of waste in different containers. All the generators of hospital waste will be responsible for the correct execution of the primary storage.
- Receptacles and garbage cans are needed for primary storage, and should have appropriate colours, volumes and quantities. The primary storage process is aimed at achieving primary segregation of waste in: organic waste, inorganic recyclable waste, and hazardous waste. All receptacles and pans should look distinctive and have colours that allow generators to quickly recognize them.
- For the primary storage of hazardous solid waste, rigid containers such as fiberglass, stainless steel, high-density polyethylene or other rigid materials may be used to avoid the exposure of the waste.
- The primary storage of the waste in each receptacle will only be up to 80% capacity of the bag.
- The waste will remain in the receptacles until the cleaning personnel collect and deliver in the temporary storage for the respective differentiation; after this, the waste will be transported to the Central Storage, according to schedules and collection frequencies of the collection route sheet.
- Do not allow the dumping of leftovers, such as paints, solvents, additives for concrete, glue, resins and in general, any product that by its quality or composition are necessarily toxic and harmful to the environment. These residues should be stored in cylinders with a lid for subsequent treatment as hazardous waste and their final disposal in the authorized security landfill.

#### 4.2.2.4 Collection

- This activity is carried out by the personnel in charge of the transfer to Central Storage.
- The established collection route sheets will be strictly followed, as well as the frequencies and schedules of internal collection.
- The operator responsible for the collection of solid waste will be responsible for verifying that the waste is sealed and delivered according to the colours established for its disposal.
- After carrying out the waste collection, the number of bags or receptacles and the operator's name will be registered, the waste being coded for subsequent weighing.

#### 4.2.2.5 Central Storage

It is an infrastructure where waste from primary storage accumulates and activities prior to final disposal are carried out, such as segregation, characterization and conditioning. The Storage Patio will have the following facilities:

- Office: is the space provided for the administration of documents and logistics.

- Warehouse: space where cleaning products are stored, such as detergents, bleaches, disinfectants, etc., as well as cleaning equipment (brooms, mops, among others). ⓘ Hygienic services and changing rooms
- Changing rooms: exclusively for authorized company staff that operates the Treatment System.
- Spaces dedicated to the segregation and storage of common recoverable and non-recoverable waste and hazardous waste (biomedical, special, and other).

#### 4.2.2.6 Labelling of Hazardous Waste Containers

Hazardous waste containers will be labelled with the following information and hazard warning symbols:

- Its contents;
- The date of packing;
- The words, “hazardous waste”, if hazardous;
- The hazardous characteristics, if any;
- Its origin location; and
- A contact name and phone number.

#### 4.2.2.7 Transportation and Final Disposal

- A company must be hired that transports the solid waste to a sanitary landfill authorized by the National Solid Waste Management Authority (NSWMA).
- Before transport, ESS personnel must be verified that the vehicles are equipped with safety equipment, such as fire extinguishers, first aid kit, toolboxes, etc.
- The companies that perform the final disposal in the landfill must have the proper authorization of the competent authorities and municipalities in their jurisdiction. Currently, waste is disposed in the Riverton City Disposal Facility.

### 4.2.3 Wastewater Management Plan

#### 4.2.3.1 On-Site

- During construction, domestic wastewater will be generated by workers, for which portable sanitary units will be used, which must be evacuated and discharged by an authorized company, often established according to the need for maintenance. The chemical toilets are mainly an autonomous system, which contain sewage connections and special installations, which due to its construction characteristics is portable and totally dismountable.
- For the rental and maintenance of the portable chemical baths, the services of a duly authorized service provider will be contracted, who will have to perform the maintenance service of the portable toilets in the necessary frequency, according to the frequency of use that they give during the constructive maintenance activities. In addition, the service provider will be responsible for the transfer, installation, removal, drainage, cleaning and disinfection of the units. This procedure will mainly consist of emptying the deposit and placement of the new unit during the days that are required, and maintenance of said units.

#### 4.2.3.2 Spanish Town Hospital Wastewater Treatment Plant (WWTP)

The project will involve the rehabilitation of the Spanish Town sewage plant. While this is done the existing hospital will still be operational. This will necessitate that sewage will be transferred to the plant during the period of the rehabilitation. To ensure that there is no disruption in sewage plant process, it has been decided that the most critical/sensitive component of the system during rehabilitation would be the inlet lift station. We are proposing that a cesspool removal entity is engaged to pump the waste daily from the lift station and discard offsite to an approved sewage treatment plant. This is feasible as the average daily flow was measured to be 143.64m<sup>3</sup>/d. Using the larger-sized cesspool trucks, this works out to approximately 7-8 trucks required daily. This will allow rehabilitative works to be undertaken on the areas of the plant unhindered. Once complete, the inlet pipe could be plugged temporarily to affect the works there or the inlet pipe re-routed towards the oxidation ditch temporarily. A modified approach could entail modifying the lift station into two (2) compartments to allow Works to be done at the inlet simultaneously.

#### 4.2.4 Traffic Management Plan

During the construction phase, there will be vehicles that enter and leave the project area, which can cause an impact on vehicular traffic in the surroundings, for which the following measures will be taken:

- ESHS department and the construction contractor will be in charge of the Traffic Management Plan Compliance

##### 4.2.4.1 Prevention Measures

The design of the facilities includes ample parking lots, which include exclusive parking for loading and unloading vehicles, with vehicle accesses duly planned.

##### 4.2.4.2 Mitigation Measures during Construction

Construction activities may affect the normal traffic pattern around the facilities. The additional traffic will be caused by vehicles and trucks bringing construction materials (concrete, tools, equipment, workers, etc.). The main activities to be conducted to mitigate the impact are:

- There are three distinct peak times, these are between 8:30 – 9:30 am, 12:30 – 1:30 pm and 3:30 – 4:30 pm. Construction traffic entering or leaving the site will be scheduled for off-peak hours to minimize additional congestion at the intersection and/or disruptions in the regular traffic flow. During the construction phase, establish lookouts (especially at peak times) for when heavy machinery manoeuvres and / or vehicles inside and outside the project.
- Use of preventive road signs inside and outside the work site.
- Conduct daily inspections to ensure that flag persons where necessary are in place and that adequate signs are posted along the entrance and other access ways where heavy equipment interact with existing roads. This is to ensure that traffic have adequate warnings and direction.
- Ensure appropriate vehicular/pedestrian barriers be used where necessary. Speed limits on site should also be established and enforced.

- Personnel who will be in charge of vehicle ordering and parking control will be hired.
- Carry out road safety campaigns for customers and contractors.
- Mitigate any situation that may alter the development and operating conditions of the road network in the surroundings, allowing fluid access for the users of the project and minimizing the interference in the circulation of vehicles not linked to the hospital's own activity.
- Traffic should be monitored to ensure approved management plans at critical areas are being followed. NEPA and NWA and other relevant authorities should perform spot checks to ensure compliance. Monitoring should be conducted daily to ensure major disruption is avoided. Reports should be made to NWA on a fortnightly basis.
- Adequate covering up of the works to minimize danger to passing traffic.
- Designated parking areas for construction vehicles and equipment.
- Ensure that access to the hospital, and in particular emergency response vehicles and areas around A&E are unobstructed.

#### 4.2.5 Mitigations Measure for Noise and Vibration, Airborne Emissions and Contaminants

- Daily inspections to ensure that construction activities are not being conducted outside of regular working hours (e.g., 7:30 am – 5:00 pm) and to ensure compliance with the NRCA Noise Guidelines based on zonation (Natural Resources Conservation Authority, 1997) In addition to environmental noise monitoring, a noise survey should be undertaken to determine workers exposure and construction equipment noise emission. Noise monitoring to be conducted monthly at the site and settlements near to site (Figure 4-2 to Figure 4-4). The project engineer / site supervisor should monitor the construction work hours. NEPA should conduct spot checks to ensure that the hours are being followed. Noise level readings will be taken by using a Class 1 Sound Level Meter setup in outdoor monitoring kits. The octave band analysis will be conducted concurrently with the noise level measurements. Measurements should be taken in the third octave which provided thirty-three (33) octave bands from 12.5 Hz to 20 kHz (low, medium, and high frequency bands). The noise meters should be calibrated pre-and post-noise assessment by using a sound calibrator. The meters should be programmed to collect third octave, average sound level (Leq) over the period, Lmin (The lowest level measured during the assessment) and Lmax (The highest level measured during the assessment) every seconds. These meters should be left for the entire twenty-four (24) hour assessment period in an outdoor measuring system and programmed to collect data every second. A windscreen (sponge) should be placed over the microphone to prevent measurement errors due to noise caused by wind blowing across the microphone. The microphone of the meters should be at a height of approximately 1.5m above ground. There should be no vertical reflecting surfaces within 3 m (10 feet) of the microphone.
- 
- The following noise mitigation measures will be implemented:
  - Use equipment that has low noise emissions as stated by the manufacturers.
  - Use equipment that is properly fitted with noise reduction devices such as mufflers.

- Operate noise-generating equipment during regular working hours (e.g., 7 am – 7 pm) to reduce the potential of creating a noise nuisance during the night.
- Construction workers operating equipment that generates noise should be equipped with noise protection. A guide is workers operating equipment generating noise of 80 dBA (decibels) continuously for 8 hours or more should use earmuffs. Workers experiencing prolonged noise levels 70 - 80 dBA should wear earplugs.
- Where necessary, use vibratory pile drivers instead of impact pile drivers to lessen the noise impact on surrounding environs.
- Scheduling and phasing of construction work to minimise the operation of noisy equipment working simultaneously.
- Consultation with Stakeholders to inform them of the work schedule and activities and to get their feedback.
- No unnecessary revving of truck engines nor honking of horns nor use of engine brakes whilst on site or driving along site access roads.
- Construction activities can result in various degrees of ground vibration; this is dependent on the type of equipment used and the methodologies employed. Vibration has the potential to interfere with persons normal routines/activities. This can become more acute if the surrounding community has no understanding of the extent and duration of the construction. This can lead to misunderstandings if the contractor is insensitive although they may believe they are in compliance with the required conditions/ordinances. Vibration mitigation include:
  - Phase demolition, earth-moving and ground-impacting operations so as not to occur in the same time period. Unlike noise, the total vibration level produced could be significantly less when each vibration source operates separately.
  - Avoid night-time activities. People are more aware of vibration during the night-time hours.
  - Have regular meetings or devise a communication strategy to inform the residents and businesses of construction activities.
  - Phase construction activities on the Spanish Town Hospital and the St. Jago Park Health Centre to occur at different times to avoid cumulative vibration on close receptors.
- Daily monitoring to ensure that fugitive dust from raw materials is not being entrained in the wind and creating a dust nuisance. The following dust control measures will be implemented:
  - Areas should be dampened every 4-6 hours or within reason to prevent a dust nuisance and on hotter days, this frequency should be increased.
  - Minimize cleared areas to those that are needed to be used.
  - Cover or wet construction materials such as marl to prevent a dust nuisance.
  - Trucks transporting materials to and from site should be covered to prevent dusting and spillage onto roadway.
  - Where unavoidable, construction workers working in dusty areas should be provided and fitted with N95 respirators.
  - Ensure material stockpiles and construction debris are stored away from wards and patient areas.

- Installation of hoarding around the site. Additional hoarding will be installed in areas closer to vulnerable populations.
  - Visible evidence of fugitive dust as well as dust on surfaces
  - Monthly PM<sub>10</sub> particulate monitoring to ensure PM<sub>10</sub> concentrations remain below the 24-hr NRCA standard of 150 µg/m<sup>3</sup> (Natural Resources Conservation Authority, 2006) PM<sub>10</sub> and PM<sub>2.5</sub> particulate sampling exercises should be conducted for 24 hours on the US EPA Schedule (United States Environmental Protection Agency, n.d.).
- The project engineer / site supervisor should monitor the construction work hours. NEPA should conduct spot checks to ensure that this stipulation is being followed.
- Monthly Indoor Air Quality particulate assessments at select sensitive areas to ensure dust from construction activities are not having a negative impact.
- Daily monitoring of vehicle/equipment refuelling, and repair should be undertaken to ensure that these exercises are carried out on hardstands. This is to reduce the potential of water and soil contamination from spills. Spot checks should be conducted by NEPA.
- A schedule for loading and unloading material will be established.
- The vehicles that work in the construction, will be in perfect condition, and will have preventive and corrective maintenance to reduce gas and noise emissions.
- The drivers will be trained in noise prevention, speed control, hydrocarbons spills, and in safety road.





Figure 4-2 Noise and Particulate monitoring locations at Spanish Town Hospital and St. Jago Park Health Centre





Figure 4-3 Noise and Particulate monitoring locations at the Old Harbour Health Centre site





Figure 4-4 Noise and Particulate monitoring locations at the Greater Portmore Health Centre site



## 4.2.6 Heritage and Cultural Management Plan

Jamaica has a diverse culture influenced by the indigenous Taino people, African, European, Indian, and Chinese communities. The majority of Jamaicans identify as Christian, with the largest denomination being Protestant, followed by Roman Catholic. However, there are also significant populations of Rastafarians, Hindus, Muslims, Jews and Buddhists. Other religious practices include Revivalism and Obeah.

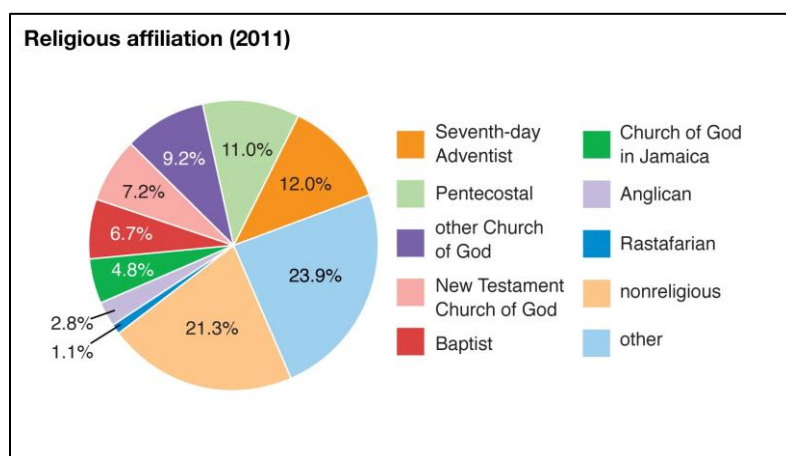


Figure 4-5 Religious practices in Jamaica (*Encyclopaedia Britannica*)

Religious practices in Jamaica include church services, prayer meetings, and religious festivals such as Christmas and Easter. Rastafarians celebrate several holy days, including the birthday of Haile Selassie I on July 23rd, and the coronation of Emperor Haile Selassie I on November 2nd.

Cultural practices in Jamaica include music, dance, food, and festivals such as Carnival and Independence Day.

Jonkonnu is a traditional dance and music form that originated in Jamaica and is typically performed during the Christmas season.



Plate 4-1 Jonkonnu costume (<https://www.about-jamaica.com/john-canoe/>)

Maroons were communities of escaped enslaved Africans in Jamaica who resisted recapture and formed their own independent societies. They played a significant role in Jamaica's history, and their legacy is still celebrated in the country today. Maroon villages are located throughout Jamaica, primarily in the eastern and central regions of the island. Some of the most well-known Maroon villages include Accompong, Moore Town, Charles Town, and Scott's Hall.



Figure 4-6 Map of Jamaica showing parish boundaries and locations of the major Maroon Settlements

The Tainos were an indigenous people who inhabited the Caribbean islands, including Jamaica, prior to the arrival of Europeans. Some Taino village sites have been identified in Jamaica through archaeological excavations, including:

- White Marl Taino Village Site located in the central parish of St. Catherine,
- Yallahs Taino Village Site located in the eastern parish of St. Thomas,
- Seville Taino Village Site located in the northern parish of St. Ann.

Religious aspects of medical ethics include refusal of treatment, reproduction, organ transplants, and rituals relevant to dying/death/burial, among others. The MOHW has a Compassionate Care Program which includes designated religious gathering spaces and a chaplaincy service at some health care facilities. These services are not expected to be impacted by the proposed works.

#### 4.2.6.1 Chance Find Procedures

Care should be taken during construction activities. The possibility of chance-finding of archaeological and cultural artefacts may exist. It should be noted that in case archaeological features are found within the project area, the Jamaica National Heritage Trust (JNHT) will evaluate and record the features and collect any such cultural material found. Storyboards should then be erected in the areas where these historical and archaeological features are present. There should be no disturbance of any other chance find further until an assessment of the area is done by the JNHT.

In addition, prior to the excavation of any historical and archaeological site, the JNHT should be contacted by the Project Executing Unit, two weeks prior to any works, and all requisite approvals obtained before any activity related to excavation commences. After the necessary approvals are granted, the JNHT will conduct a watching brief during excavation procedures.

#### **4.2.6.2 Consultation**

During consultations, the proposed project area for Old Harbour Health Centre is used by residents as a shortcut from Walker Road to enter East Street. However, based on community meetings, residents present have no issues using the official route.

The Lion's Club Community Centre located toward the north of the property is temporarily used as a church three times per week.

The community was enthusiastic of the proposed project and improved healthcare services.

#### **4.2.6.3 Community Access**

The proposed location of the Old Harbour Health Centre has a foot path currently used by community members as a shortcut. This will be impacted by the proposed works. Community members will have to utilize the surrounding main roadway. Consultations held indicated that the residents present have no issues using the official route (Section 4.2.6.2). A basketball court located within the project footprint will be impacted by construction activities. A new basketball court will be rebuilt on the project property.

The proposed expansion of the Greater Portmore Health Centre will impact the community football field. The MOHW plans to identify a nearby alternative location.

No other access issues (foot paths or heritage sites) were identified at any of the other facilities (Spanish Town Hospital or St. Jago Park Health Centre).

#### **4.2.6.4 Removal of Replicable Cultural Heritage**

The community football field located at the proposed Greater Portmore Health Centre site can be regarded as Replicable Cultural Heritage, and will be rebuilt in a nearby alternative location. The same goes for the basketball court located within the project footprint of the Old Harbour Health Centre. A new basketball court will be rebuilt on the project property.

#### **4.2.6.5 Removal of Non-Replicable Cultural Heritage**

This is not applicable to the project.

#### **4.2.6.6 Critical Cultural Heritage**

This is not applicable to the project.

#### **4.2.6.7 Project's Use of Cultural Heritage**

This is not applicable to the project.

## 4.2.7 Grievance Redress Mechanism (GRM)

### 4.2.7.1 Project Level GRM

With the aim of establishing and maintaining a harmonious relationship between the stakeholders (both internal and external) and the Project, a Claims and Complaints Absolution Program (CCAP) will be implemented as part of a Grievance Redress Mechanism (GRM) whose general objective is to create a system that allows stakeholders, who are perceived to be affected or harmed by any aspect of the Project, to document their complaints and in turn, receive a timely response. . These grievances should be documented, analysed and responded to efficiently. Stakeholders should also be able to submit comments and suggestions that they feel will increase the benefits of the project and reduce or mitigate any adverse impacts. Stakeholders should be informed of the grievance mechanism in place, as well as the measures put in place to protect them against any reprisal for its use. This should be done during interactions with stakeholders.

#### Grievance Procedures

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The Claims and Complaints Absolution Program should be responsible for making available various avenues for receiving and monitoring grievances received from affected parties. It is recommended that the following be put in place for receiving grievances:

- In Person/Face to Face: Grievance and complaints can be reported, collected, and recorded in person at stakeholder engagements, during site visits, and by visitors to the CCAP office. These grievances should be documented and entered electronically thereafter. The name and contact information should also be recorded so that there can be feedback on the issue. Should the complainant prefer to remain anonymous, the grievance should be given an identification number and date when it is being logged.
- Telephone/Email: AT project inception, the CCAP should set up a dedicated telephone number and an email address that will be used to receive grievances, complaints, and general feedback. This method can be used to receive grievance from the affected parties anonymously and discreetly. The telephone numbers and email should be published on all correspondence and public awareness advertisement from the project.
- Suggestion Dropbox: Suggestion dropboxes should be placed around the various project sites including and at the CCAP office. These will allow for equal opportunity for people to have access to the grievance mechanism, and be allowed to express those grievances in a manner that is best suited for their needs.

All grievances and complaints should be recorded in a register maintained on file until the end of the project. Information to be recorded include: complainant name, affiliation, and contact information if available, Grievances received via the various avenues should receive written acknowledgement response. Once the grievance has been identified and outlined within the scope of the project, it should then be analyzed to address the concerns of the grievance. Once the main issue has been identified, and analyzed, there should be a general consensus on how to move forward with the project, and the possible method of implementation of the recommendations. A response will be discussed and then

supplied to the complainant. This should be done within the scope of the project, while maintaining the aims and objectives of the project components.

The aim is for there to be a general consensus with the complainant on the response and actions to be taken. If an agreement is reached, the agreement should be implemented. If no agreement is reached, then the case should be reviewed by a Supervisory Committee, where details of the complaint will be further analysed. It should then be determined whether grievance can be resolved by the Project Team or whether outside authorities with regulatory or other responsibilities and relevant skills are to be consulted. Upon resolution, the redress of a grievance should be effectively communicated to the complainant in timely manner.

**Table 4-2**      **Grievance Procedure**

<b>Grievance Procedure</b>	<b>Timeline</b>
Receiving and registering the complaint	1 day
Determine merit of the complaint and acknowledgement of complaint	2 days
Investigation of complaint by the CCAP	5 days
Determination (and approval) of appropriate solution/response	1 day
Communication on the resolution to the complainant	1 day
Receive and acknowledgement of appeals by complainant (where solutions are not satisfactory) and subsequent review by Supervisory Committee	2 days
Activate arbitration mechanisms if necessary	1 week
Resolution of Issue	1 week
Updating of Grievance Log	1 day

#### **4.2.7.2      Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment**

In addition to the project level and worker GRM, a GRM to investigate and address allegations of Gender Based Violence (GBV), Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH) and Sexual Orientation Discrimination (SOD) will be formulated. The objectives of the GRM are outlined below:

- Ensure a fair and rapid response by the representatives of the Project to the questions, concerns and / or complaints of the stakeholders, so that they do not become negative impacts.
- Provide alternative methods to solve potential complaints in substitution of legal actions between the parties.
- Properly document complaints and claims, elaborating respective formats for each stage of the process.
- Build a process of mutual trust with local and regional groups of interest.
- Clearly defining policy statements about the handling of complaints and claims (including, when appropriate, mechanisms to ensure confidentiality and access to the information).
- Clearly establishing organizational responsibilities such as the assigning of specific personnel from the operation, managers, and/or functional units to implement the GRM, designating access points for complaints.

- Defining, documenting, and disclosing workflow procedures and standards to ensure that all complaints are understood and analyzed, as well as the criteria for decisions to determine the appropriate responses.
- Establishing clear communications mechanisms with claimants, both regarding how to bring problems to the attention of the authorities and how those authorities communicate with the claimants.
- Establishing systems to register and follow up on all complaints, disputes, or claims.
- Establishing an appeal process (or other solutions) for cases where the parties involved in a complaint or a dispute do not agree with the decisions at the operational level.

Each GBV, SEA, SH and SOD case should be logged by the PEU or its designate and survivor's/victims information should be protected by using codes to maintain confidentiality. Specifically, the GRM should only record the following information related to the GBV/SEA/SH/SOD complaint:

- The nature of the complaint (verbatim from the complainant)
- If, to the best of their knowledge, the suspect was associated with the project.
- Complaint should be documented but remain sealed and confidential. The GRM should aim to:
  - Refer complainants to the GBV/SEA/SH/SOD Claims and Complaints Absolution Program specialist
  - Record the resolution of the complaint
- The PEU should immediately notify both the MOHW and the IDB of any GBV/SEA/SH/SOD. complaints with the consent of the survivor/victim. If there is an anonymous compliant, the PEU should share information on the case with the IDB providing a code number to the case and avoiding disclosing any information that could help to identify the survivor.
- Assistance should be provided to survivors/victims by referring them to the Complaints Absolution Program specialist for support immediately after receiving a complaint directly from a survivor/victim.

### Recourse to the Judicial System

The Sexual Harassment Act of 2021 (Ministry of Entertainment, Culture Gender and Sport, 2021) is the bill passed to make provision for the prevention of sexual harassment and for connected matters. Main features of the act include:

**Workplace Protection:** Prospective employers must not suggest to applicants that their ability to get the job is dependent on them engaging in or tolerating any form of sexual conduct. Employers must make every reasonable effort to ensure the safety of their employees by forming a policy statement and compiling a register in which events of reported sexual harassment are recorded. Employees must not be forced to accept working conditions that depend on accepting or tolerating sexual advances from their employers or supervisors. Employees who have experienced any incidents of sexual harassment must be able to report them without being discriminated against by their employers. Clients must not be sexually harassed by employers or employees while conducting business.



Institutions: No student, ward, resident, inmate, patient or any member of an institution should sexually harass one of his or her peers. Members of staff or persons in a position of authority are not expected to sexually harass any student, resident, ward, inmate, patient or other member of staff.

Although it is hoped that all grievances will be resolved internally and through the aforementioned process, it will be communicated to stakeholders that at any time during the grievance resolution process, they retain their rights to refer their grievance to the appropriate arbitral or legal body within the Jamaican judicial system. In the event that a grievance becomes a case presented by the claimant's legal counsel, the Project's Legal Advisor will be directly responsible for responding to the claim.

### Employment Opportunities

It is important to try to source potential workers from nearby communities to strengthen community relations. In addition, diverse sexual orientations and gender identities may have the effect of excluding people from potential employment opportunities which prevents them from taking advantage of the opportunities available to other members of the community.

It is therefore important that the PEU:

- Anticipates and prevent adverse risks and impacts based on gender, sexual orientation, and gender identity, and when avoidance is not possible, to mitigate and compensate for such impacts.
- Achieves inclusion in project-derived benefits of people of all genders, sexual orientations, and gender identities.
- Implement measures to prevent Sexual and Gender Based Violence (SGBV), including sexual harassment, exploitation and abuse; and when incidents of SGBV occur, to respond promptly.

## 4.2.8 Livelihood Restoration Plan (LRP)

### 4.2.8.1 Rationale

The objective of this plan is to provide livelihood compensation and support to street vendors and the beekeeper in the event of temporary or permanent displacement as a result of the project with the long term goal of improving their economic conditions, enhancing their social inclusion, and promoting their formalization and access to rights. Efforts must be made to promote gender equity in all compensation, allowances and livelihood restoration measures.

There are approximately twenty-six (26) boxes of bees located at the southwestern corner of the proposed OHHC property which will have to be removed to facilitate the development. A survey of the vendors that could potentially be impacted at the proposed new main entrance for the Spanish Town Hospital (STH) facility was conducted on February 16, 2023. Seven (7) vendor stalls would potentially be impacted by the proposed project. Six (6) of these vendor stalls sell snacks, beverages, toiletries and one (1) vendor stall sells fruits. These vendors work Monday to Friday (5 days a week), but do not work on the fourth Friday of each month because this is not a "clinic day" (at the St. Jago Park Health Centre). The location of the vendor stalls, bus stops and taxi stand are depicted in Figure 4-7. It is

important to note that informal street vending is often characterized by low levels of income, job insecurity, and limited access to social protection, which can exacerbate poverty and inequality. There are ongoing efforts in Jamaica to address the challenges facing street vendors and to promote their economic empowerment and social inclusion.

The LRP for street vendors and the beekeeper could include relocation or business training. These are discussed below:

#### Relocation

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Nearby suitable relocation areas will be identified by the MOHW, and presented to these stakeholders as part of a targeted stakeholder consultation three (3) months prior to pre-construction activities.

#### **VENDORS**

Vendors will be given a one-off payment JMD\$9,500.00 (average daily income of the various vendors) during the relocation exercise. Relocation of the vendors is estimated to take approximately one (1) day to complete. This average one-off payment is based off of vendor income data collected on February 16, 2023.

The PEU will facilitate the regularization of the vendors with the Municipal Corporation. The Jamaica Social Investment Fund (JSIF) has a micro-enterprise development program that provides training and support to street vendors and other small businesses. The regularizing process can help street vendors to gain legal recognition, access to new markets, and financial support. By regularizing their businesses, street vendors can also contribute to the formal economy and promote inclusive economic growth in Jamaica.

#### *Travel Allowance*

Travel allowance during relocation will be paid per day to vendors undergoing relocation. Travel within nearby communities is estimated to be JMD\$500.00. Travel outside of the community is estimated to be JMD\$2,000.00.

#### *Replacement Structures*

The National Land Agency (NLA) will conduct a valuation of any structure that needs to be replaced, prior to any relocation exercise. Any relocation exercise undertaken will seek to improve the livelihood of the vendor.

#### **BEEKEEPER**

The MOHW PEU contractor will assist where necessary with the transportation of the bee boxes. During relocation, a permit must be sought from the Ministry of Agriculture and Fisheries prior to the relocation of the bee boxes.

#### *Travel Allowance*

Travel allowance during relocation will be paid per day to the beekeeper. Travel within nearby communities is estimated to be JMD\$500.00. Travel outside of the community is estimated to be JMD\$2,000.00.

#### *Replacement Bee Boxes*

The Rural Agricultural Development Agency (RADA) will assist with providing replacement bee boxes if needed.

#### Business Training

The plan could provide business training and capacity building to street vendors to help them improve their skills and knowledge in areas such as marketing, finance, customer service, and hygiene. The training could be delivered through workshops, mentoring, or online platforms, and would be adapted to the specific needs and interests of the vendors.





Figure 4-7 Locations of the bus stops, stalls and taxi stand in proximity of the Spanish Town Hospital and St. Jago Park Health Centre



#### 4.2.8.2 LRP Implementation

The implementation of the livelihood compensation plan for street vendors would involve the following steps:

**Needs assessment:** The plan would start with a needs assessment of the street vendor population, to identify their economic, social, and legal needs and barriers. The needs assessment would be conducted through surveys, focus groups, and interviews with the vendors and other stakeholders.

**Design and planning:** Based on the needs assessment, the plan would be designed and planned in collaboration with the vendors, the local government, civil society organizations, and other relevant stakeholders. The design and planning process would include the identification of resources, the selection of implementing partners, the formulation of indicators and targets, and the establishment of a monitoring and evaluation framework.

**Implementation and monitoring:** The plan would be implemented by the selected partners and stakeholders, with the support and oversight of the IDB and other donors. The implementation would involve the delivery of the different components of the plan, as well as the monitoring of the progress and impact of the plan. The monitoring would be done through regular reporting, data collection, and feedback mechanisms.

**Evaluation and scaling up:** The plan would be evaluated at the end of the implementation period, to assess its effectiveness, efficiency, and sustainability. The evaluation would be based on the established indicators and targets, and would include both qualitative and quantitative data. The results of the evaluation would be used to inform the scaling up of the plan to other areas and regions, as well as to inform the design of future plans for street vendors and other informal workers.

#### 4.2.8.3 LRP Management and Mitigation Measures

The PEU will ensure that the following measures are put in place to not disrupt the vendors' livelihood activities:

- Before the start of construction works, develop and distribute an initial project information packet to vendors.
- Alert vendors about local construction works two weeks in advance and of any changes in the initial scheduling.
- Engage a Livelihood and Gender Specialist ahead of and for the duration of the project to engage vendors and monitor activities and impacts.
- The cut-off date for the Livelihood Restoration Plan to determine eligibility criteria was February 16, 2023.
- Schedule meeting with vendors in the project area and share project information.
- Conduct procedures as outlined in Section 4.2.8.1 to alleviate any disruption in their service offerings during the project period.
- Monitoring impacts and implement restoration measures as required.
- Promote the use of the Community Grievance Redress Mechanism

It is the responsibility of the PEU to ensure that there are no disruptions in livelihood activities and as a result no negative social repercussions. If there is a potential challenge due to planned works, the PEU must ensure that all vendors are adequately aware, and the alternatives are clearly expressed to minimize social impacts. The PEU is responsible for ensuring that monitoring is being undertaken and mitigation measures are being enforced. Each specific project would be the responsibility of the Livelihood and Gender Specialist.

## **4.2.9 Occupational and Community Health and Safety Risk Management Plan**

### **4.2.9.1 Safety Measures**

Safety measures including use of warning signs and barricading will be employed to safeguard the working areas. The use of roads within the community will need to be designated with proper signage and a clear footpath that allows for pedestrian traffic will need to be in place. Vehicles will need to be able to use these existing roads while avoiding the project area without much inconvenience to them. Therefore, the active working areas will be fenced from areas to which the public have access.

Specific measures within the community will need to be addressed to ensure community safety for pedestrians and schoolchildren using footpaths on the project grounds in order to reach school. A clear footpath on project grounds could be created. Fencing measures will need to be taken to keep out community animals such as goats and dogs, that might cause accidents. The security management system is repaired under the principles of planning, organization, management, execution, and control – aimed at identifying, evaluating, and controlling all actions, emissions, and conditions that could affect the health or physical integrity of workers, cause damage to property, interrupt processes or degrade the work environment.

For the various activities for construction phase such as: demolition, earth works, rehabilitation, finish, etc., safe work procedures will be prepared by contractor, the workers will be trained, and their compliance will be supervised responsibly. Regarding personal safety equipment, the following will be provided: helmets, eye protectors, hearing protectors, gloves, safety boots, and respirators. If any additional equipment is needed, it will be provided according to the risk and work area of the personnel.

### **4.2.9.2 Environmental and Safety Training Plans**

The contractor staff will attend orientation talks, which will include discussions on environmental issues, Occupational Health and Safety and other plans that are linked to their work. This will be coordinated with each area manager after reviewing the experience and knowledge of the worker, in order to provide adequate training. The company will develop training programs for workers that are mentioned below:



**Table 4-3 Staff Induction**

<b>Groups</b>	<b>Activities</b>
Applicants to work	Short induction on the company's safety policies.
New workers	General induction on safety and on the tasks that they will develop in their work, focusing on safety, first aid, occupational health, environment, etc.
Permanent workers	Periodic update on security issues and on special techniques related to their work. This training should be carried out according to a program, both internally and externally.

New workers will be trained for the correct use of tools and equipment, for compliance with safety procedures and emergency response according to the nature of their work, for the proper use of safety equipment, and on the psychology of human behaviour at work. Worker training will be reinforced through notices, posters, signage, and all possible means, periodically carrying out the respective follow-up.

The Head of Safety of the contractor will statistically record the accidents, the critical works where these occur frequently, their causes and all the details relate to these events, in order to take the measures of prevention and correction and reinforce the training taking these cases into consideration. Additional training procedures will be developed, as necessary, to reflect the level and type of technical knowledge required for a specific position. The training will include on-the-job training, as well as training through talks and discussions aimed at specific work activities. The level of training will increase within the level of responsibility of the employee, the complexity of the team and the process involved. Some topics to be discussed in the trainings are:

- Occupational Health
- First Aid
- Ergonomics: General guidelines and recommendations.
- Occupational Health and Safety and Environmental Policy
- Environmental aspects: solid waste management, noise control, effluents management, etc.
- Unsafe acts: dangers and risk.
- Report of accidents and incidents.
- Waste Management

Other health and safety recommendations include:

- Provision of lifelines, personal safety nets or safety belts and scaffolding for the construction workers (if necessary). These should be used at minimum heights of 6 feet (1.83 metres).
- A trench 1.2m or more in depth must have a means of egress (ladders/ stairways/ramps) and should be located at 8m intervals.
- Excavated materials must be stored 0.6m or more from the open trench (not to be measured from the crown of the spoil).
- Adherence to applicable conditions of the Disaster Risk Management Act (DRMA)
- Designing and implementing an Emergency Response Plan (ERP) (in consultation with ODPEM and the Fire Department) in the event of any emergency.

- Undertake daily inspections to ensure that workers are wearing adequate personal protective equipment (PPE), such as hard hats, hard boots, hearing protection, safety glasses, reflective vests and fall protection is necessary. Ensure that safety signage is in place.
- Ensure that construction safety nets (catch nets) are installed that will catch personnel, debris, and small tools.
- Contractors engaged in operations where underground or overhead services may exist, must take adequate steps to locate, identify and mark such services and complete a Permit to Excavate. Relevant precautions must then be taken to prevent injury or damage to person or property.
- Hazardous work situations exist which can only be carried out under a Permit to Work System. These include:
  - Hot Work Permit
  - Work on Pressure/Steam Systems
  - Work on excavations
  - Work in Confined Spaces
  - Work on Medical and Industrial Gases
  - Work on High & Low Voltage Systems
  - Work at height/roof works

#### 4.2.9.3 Communicable Diseases

Additional precautions are necessary for construction sites in proximity to health facilities. This would not apply to the proposed Old Harbour Health Centre. Workers may come into contact with improperly disposed medical and non-clinical waste on property.

#### Covid-19

The current Covid-19 pandemic may affect construction and general health facility activities:

- Risk of exposure due to the increased number of persons on site.
- Disruption in global supply chains.
- Persons' desires to avoid large crowds (persons may be reluctant to seek medical care).

Recommended mitigation measures include:

- i. Increased sanitization stations.
- ii. Use of PPE (masks, face shields etc.).
- iii. Public Education and Awareness
- iv. Safety Signage
- v. Adherence to public health guidelines from MOHW
- vi. Vaccination
- vii. Early detection (regular Covid testing, Temperature checks)
- viii. Isolation areas
- ix. Limitations on gatherings,
- x. Wearing of masks in public spaces

- xi. Limit interaction between construction workers and healthcare workers, patients and visitors.

### Vector-borne Disease

There is the potential for an increase in solid waste generation which may increase the number of vectors on site. There is also a potential for vector breeding sites.

Mitigation measures include:

- i. Increased emphasis should be placed on managing garbage/solid waste disposal on the property. Efforts should include an increase in the frequency of the removal of garbage and also the use of garbage skips that are properly covered/ sealed to prevent animals from entering. This should aid in the vector issues that are present at the facility.
- ii. The project site should be inspected regularly to ensure that vector breeding sites (old tires, pans etc.) are identified and eliminated.
- iii. Fogging of facilities at night-time such as Greater Portmore Health Centre site, which is not in the vicinity of a hospital. Fogging of the proposed Old Harbour Health Centre can also be conducted.

### Sexually Transmitted Diseases (STDs)

The establishment of a construction site will increase the number of workers in the area which has the potential for increased sexual relations between workers and other individuals in the surrounding community. Increased income from employment may also encourage workers to pay for sexual services from individuals offering said this service. These scenarios have the potential to lead to the further spread of STDs amongst society. Mitigation measures include:

- Education and awareness surrounding the use of condoms and vaccines. Safe and highly effective vaccines are available for two types of viral STDs: hepatitis B and Human Papillomavirus (HPV). These vaccines have represented major advances in STI prevention.
- Provision of condoms on site: When used correctly and consistently, condoms offer one of the most effective methods of protection against STIs, including HIV.

## 4.2.10 Emergency Response Management Plan

### 4.2.10.1 Contingency Plan

A Contingency Plan has been established, in order to be prepared for emergencies or unforeseeable situations that could have adverse effects on the environment.

A Contingency Committee will be formed that will be in charge of coordinating the main actions, the human and physical resources to be mobilized in cases of emergencies and will make the basic decisions to be followed before and after the emergency. In cases of higher-level emergencies that require external participation, the contingency plan considers the following contacts: Police, Fire, and nearby medical centres.

The plan considers the following points of contacts:

- Police
- ODPEM
- Fire Station
- Parish Disaster Coordinator
- Jamaica Defence Force
- Parish Public Health Department
- Parish Municipal Corporation

An emergency assembly location in the event of fires or earthquakes must be established and marked with proper signage.

For the application of the Contingency Plan, one must have the necessary means of communication and mobility, and materials such as fire extinguishers, medical kits, safety tapes, absorbent cloths, various tools, personal protective equipment (boots with steel tips, helmets, dust respirators, safety glasses), among others.

#### **4.2.10.2 The present plan contemplates emergency situations such as the occurrence of earthquakes, fires and hydrocarbon spills. Hydrocarbon Spills**

##### **Description**

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Hydrocarbon spills are considered potential emergency situations due to any leakage, spill or failure during the use and handling of hydrocarbons (fuels, lubricants and greases) that are used in the construction activities. The machinery used in the transport of materials or diverse equipment can have a spill in the work zone, for which the following measures should be taken:

##### **Prevention and Minimization of Risks**

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##### **OPERATIONAL CONTROL**

- The staff and workers will receive training in Hydrocarbon Spill Management. Contractors must prove that they have training in spill response.

##### **ENGINEERING CONTROL**

- All units will have an anti-spillage kit, for the control of oil spills.
- There will be a preventive maintenance plan for all vehicles and equipment.

##### **RESPONSE PROCEDURE**

For **minor spills**:

- Determine the nature of the material that was spilled.
- Assess the safety of the situation. If it is safe to do so, stop the source of the spill. If it cannot be determined to be safe, or if the material spilled is unknown, notify the EHS Manager and take no further action.

- Initiate clean-up of spilled material by containing with sorbents, or other appropriate material. If possible, take steps necessary to prevent the spill from entering waterways.
- Dispose of spill residues (used sorbents, contaminated soil, etc.) as directed by the Environmental Manager.
- Complete spill report form and notify the EHS Manager.

**For major spills:**

- Determine the nature of the release including the nature of the material, the quantity spilled, and the source of the release.
- Take the necessary measures to stop the source of the release.
- Contain the flow of the spill to prevent discharge to waterways. This can be done through the use of diversion berms, containment booms, or other measures to be determined in the field.
- If the spill has reached water, deploy containment booms to confine the spill.
- Pump pooled liquids into tanks or containers.
- The EHS Manager shall then determine if outside resources (external contractors, Office of Disaster Preparedness and Emergency Management – ODPEM, Jamaica Defense Force, Jamaica Fire Brigade etc.) are needed to control and contain the spill and make the contacts as necessary.
- Once the spill is under control, the EHS Manager shall initiate an assessment of environmental damage, and restoration measures where necessary.
- The EHS Manager shall implement the post-spill restoration. shall monitor the progress of the restoration, provide the necessary technical support, and assess the effectiveness of restoration efforts.

**OPERATIONS NORMALIZATION**

- After the removal of the spilled material and the cleaning of the affected areas, the site will be inspected to assess the need to carry out repair actions, change equipment, etc.
- If repair actions are required, normal activities in said area will be paralyzed until the end of the repair actions, after which it will be notified for normal operation.

**TRAINING AND FOLLOW-UP**

- The personnel in charge of fuel operations and the driving personnel will be trained periodically, in terms of techniques, response procedures, etc.
- Used spill response materials such as absorbent pads, peatsorb, absorbent and barrier booms will all be collected by a licenced external contractor and eventually disposed via incineration.
- The person responsible for the spill fills the Contaminated Soil Report Format when leaving the floor in the transitory zone tiles.
- A Spill Report must be completed and submitted to NEPA within 48 hours of the spill, where the root cause of the spill is discussed, and action plans outlined to prevent it from happening again.

#### 4.2.10.3 Fire

##### Prevention and Minimization of Risks

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###### SITE CONTROL

- Form an emergency committee, which is properly trained to act in case of fire.
- An emergency assembly location must be established and marked with proper signage.
- Avoid the accumulation of garbage deposits in the vicinity of combustible and flammable materials.
- If incipient fire is suspected, act quickly using the extinguishers that will be located in a visible place.
- Flammable liquids must be kept away from sources of combustion.
- The escape routes of all the facilities will be properly signalled. Ensure escape should avoid emergency access pathways/driveways where possible.
- Audible alarms (bell, siren) should be raised to notify both construction crew members as well as those in nearby surrounding buildings.

###### RESPONSE PROCEDURE

- Before the occurrence of fires, the brigades of the zone will request the evacuation of the involved area and will look to identify the point of origin of the fire to control it with the emergency teams.
- Proceed to extinguish the fire with the use of fire extinguishers.
- If the fire cannot be extinguished, alarm systems will be activated to request help from other groups and the firefighting team, indicating the location, personnel affected-if any-and evacuation procedures that are being carried out.
- Communicate with the emergency committee.
- If the fire cannot be controlled or the help is not sufficient, it will be notified by means of radios, flashes of lights and personal notices indicating the location of the fire and the escape route(s) to be taken.
- If necessary, as required by the firefighting team, external support will be requested.
- Inventory and registration of the personnel that has been evacuated will be carried out to identify possible victims. Likewise, the first medical attention will be given in safe places and according to this; its referral to specialized institutions will be evaluated.

###### OPERATIONS NORMALIZATION

- Once the fire is controlled and extinguished, the trained personnel will evaluate the situation to authorize the entry of rescue personnel and to estimate the damages.
- Once all the areas involved have been evacuated and inspected, access will be restricted and the necessary cleaning, restoration and reconstruction procedures will be activated.
- The causes of the fire will be investigated, and corrective measures will be proposed.

###### TRAINING AND FOLLOW-UP

- All personnel at the facility will be trained in extinguisher management, evacuation routes and fire response procedures.



- Training in first aid and personal protection in case of fire will be given every six months.

#### DRILLS

The primary reason for conducting fire drills is to educate workers on site about the procedures to follow in the event of a fire. These drills provide an opportunity for workers to locate and use primary and alternative exit routes, and to familiarize themselves with the location of the emergency assembly locations any alarm system components found on site. Fire drills are the time to not only prepare for fire, but to enable workers to be better able to handle the many other non-fire situations they may encounter.

- Have a fire drill every month during the construction phase
- All workers are obliged to attend.
- Records of such drills must be maintained in a log book until the end of construction.

#### 4.2.10.4 Seismic Hazards

The prevention measures against probable seismic movements will be the following:

- A week before starting the activities and whenever considered necessary, discussions will be held, which will serve to indicate the measures before, during and after an earthquake.
- Establish security zones in the area of activity of the project.
- An emergency assembly location must be established and marked with proper signage.
- Carry out simulations to deal with seismic movements through the committee or emergency brigade, which must have the corresponding training.

The actions that must be followed during the occurrence of seismic movements must consist of:

- Move away from demolition or construction areas during movement.
- Evacuate towards the established safety zone.
- Stay calm.

After the occurrence of a seismic movement, the following activities must be carried out:

- Personnel accountability.
- Search and identification of accident victims.
- If there were injuries, call fire department immediately, or request ambulances if necessary.
- The injured must receive the necessary first aid before the arrival of specialized assistance, by the emergency committee.
- Assessment of damage to equipment and the environment.

#### Dos and Don'ts

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##### DO'S

- Remain calm.

- Stay outside, if there.
- Watch for falling objects.
- Check for injuries and administer.
- Check for fires.
- Check power sources - shut off where necessary.
- Be prepared for additional earthquake shocks.
- Respond to request from relief organizations.

#### **DON'T'S**

- Do not light a match or use any form of open flame.
- Do not go near buildings that may be weakened by earthquake.
- Do not turn on light switch or use any electrical appliance.
- Do not run downstairs.
- Do not go near to the window.

#### **Drills**

The primary reason for conducting earthquake drills is to educate occupants on the locations of the emergency assembly locations and about the procedures to follow in the event of an earthquake. These drills give employees opportunities to practice what they have learned and condition themselves to react spontaneously and safely when the first jolt or shaking is felt. To help protect workers in the immediate aftermath of earthquakes or other disasters, arrange for employees to be trained now in first aid, cardiopulmonary resuscitation (CPR), and the use of fire extinguishers.

- Have an earthquake drill once per month
- All workers personnel are obliged to attend.
- Records of such drills must be maintained in a log book until the end of construction

#### **4.2.10.5 Flooding**

Consider the following when preparing for floods:

- Establish warning and evacuation procedures. Make plans to move materials and equipment to a safe area in case of floods.
- Monitor the media and have a battery-operated radio and battery back-up for flood watchers and warnings.
  - Flood Watch – Flooding is possible. Be prepared to evacuate. Tune to local radio and television stations for additional information.
  - Flood Warning – Flooding is already occurring or will occur soon. Take precautions at once. Be prepared to go to higher ground. If advised, evacuate immediately.

Upon receiving a Flood Warning:

- Store drinking water in various containers, water services may be interrupted.
- Secure and store items such as materials tools and equipment.

- Consider the need for:
  - Portable pumps to remove flood water.
  - Alternate power sources as generators or gasoline-powered pumps.
  - Battery-powered emergency lighting.
- During the Flood:
  - Avoid areas subjected to flooding.
  - Do not attempt to cross waterways where the water levels are higher than 0.5m.
  - Do not attempt to drive over a flooded road.
- After the Flood:
  - Do not consume food that has come in contact with flood waters.
  - Test drinking water for potability.
  - Have bottled water and other filtering mechanisms on hand
  - Seek necessary assistance for medical care, food, clothing and first aid are available at shelters with Red Cross in attendance.
  - Do not visit disaster areas; your presence might hamper rescue and other emergency operations.
  - Do not handle live electrical equipment in wet areas; electrical equipment should be checked and dried before returning to service.
  - Use flashlights, not lanterns or torches to examine buildings. Flammables may be inside.

#### **4.2.10.6 Hurricane**

The Atlantic hurricane season starts on the first of June and ends on the thirtieth of November of each year; however, experience demonstrates that hurricanes are more frequent during the months of August and September. It is therefore essential that the site is prepared in case of an emergency caused by a hurricane.

It is essential to have dedicated Emergency Response personnel in the event of a hurricane. Personnel should make arrangements in advance to maintain the safety of the site, materials and equipment before, during and after a hurricane. The preservation of lives and the safety of personnel shall take precedence over all other considerations when determining the actions to be taken in case of threatened damage. After a hurricane has passed, it is essential to conduct clean-up activities as soon as it is safe to do so. This is to ensure no hospital/health centre emergency access routes/pathways etc. are not impeded. Monitoring and ESHS Supervision

#### **4.2.10.7 Responsibilities**

- For the constructions phase the PEU are responsibilities to monitoring, make and send to IDB the ESHS report, minimum each 6 month.
- The ESHS report will be done by the contractor and sent to the PEU and NEPA on a monthly basis.

#### 4.2.10.8 Objectives

Establish the necessary actions to monitor the implementation and the degree of effectiveness of each of the measures designed by the Environmental and Social Management Plan.

#### 4.2.10.9 Construction Phase

During the construction phase, 4 monitoring measures have been designed to evaluate the implementation of management measures and their degree of effectiveness. The following table presents the relationship of follow-up measures.

Table 4-4 Follow-up Measures during Construction Phase

Management Measure	Monitoring or Follow-up Measure
Waste Management	Waste management follow-up
Solid Waste Management	Monitoring of solid waste managing
Occupational Health and Safety Measures	Monitoring of occupational health and safety management
Rainfall and Effluent Management Measures	Monitoring of rain and effluent management
Stakeholder Engagement Plan (SEP)	Monitoring of SEP
Grievance Mechanism	Monitoring of possibly affected people (vendors, patients, etc.)

#### 4.2.10.10 Waste Management Follow-up

To verify compliance with the environmental management measure aimed at the management of the clearing, proceed as follows:

- Compliance Indicator:
  - A record of the amount of material transferred to the authorized sanitary landfill will be kept.
  - Register of cisterns used for the wetting.
- Period
  - Monthly during construction
  - A record of the amount of water used for wetting every month will be kept
- Committed Limit
  - Achieve that the clearing is taken to an adequate final disposition and that it does not generate particulate material.

#### 4.2.10.11 Monitoring of Solid Waste Management

- Compliance Indicator:
  - Solid Waste Management Declaration
  - Manifests of hazardous solid waste
- Period
  - The solid waste management (quantities) declaration will be annual, but the management registration is monthly.

- Solid waste manifests must be requested each time the final disposal of hazardous waste is conducted
- Committed Limit
  - Solid waste will be properly segregated and disposed according to its classification.

#### **4.2.10.12 Monitoring of Occupational Health and Safety Management**

- Compliance Indicator:
  - Occupational health controls of the personnel;
  - Inductions and Training
  - Safety Inspections
  - Reports of incidents or occupational accidents – Reports of environmental incidents or accidents.
- Period
  - The occupational health control will be carried out annually in operations phase
  - Inductions will be carried out every time a new worker enters to work
  - Training will be carried out once a month
  - Safety inspections will be carried out on a daily basis
- Committed Limit
  - All personnel in charge of the operation will comply with their occupational health assessments.
- Reports to the Authority
  - In case of incidents or occupational or environmental accidents, the report will be sent to the corresponding authority. Health reports will be archived and will be available at the request of the authority.

#### **4.2.10.13 Monitoring of Rain and Effluent Management Compliance**

- Indicator:
  - Monitoring of the effluent to be discharged
- Period:
  - Monthly
- Committed Limit
  - Comply with current regulations (NRCA Wastewater and Sludge Regulations (Natural Resources Conservation Authority, 2013).

#### **4.2.10.14 Monitoring of Social Management**

- Compliance Indicator:
  - Grievances reports
  - Grievances attended
  - Reports of social conflict.
- Period
  - The social management will be carried out daily
- Committed Limit



- 100 % of grievances attended.
- Staff should be updated on a regular basis on any updates to construction since construction timelines tend to run over and to provide information on how staff feedback has been incorporated. Staff suggested that posters as well as supervisors announce a town hall meeting for all staff interested in attending. Posters or written materials should be posted and staff should be able to provide feedback in written form after the meeting. Staff further suggested a town hall meeting be held in the morning and in the evening to accommodate different staff shifts.

## 4.2.11 Monitoring and Supervision ESHS Compliance Report

### 4.2.11.1 Responsibilities

- The ESHS report will be done by the contractor and must be presented to the ESHS chief of each facility.
- The ESHS chief of each facility will send the report to BID

### 4.2.11.2 Frequency

- The ESHS report will be done by the contractor and must be presented to the ESHS chief of each facility every month.
- The ESHS chief of each facility will send the report to BID semi-annually (every 6 months)

### 4.2.11.3 Indicators

- Monitoring of the effluent to be discharged to the body of water
- Occupational health controls of the personnel.
- Inductions and Training
- Safety Inspections
- Reports of incidents or occupational accidents
- Reports of environmental incidents or accidents.
- Solid Waste Management Declaration
- Manifests of hazardous solid waste
- A record of the amount of material transferred to the authorized sanitary landfill will be kept.
- Register of cisterns used for the wetting.

### 4.2.11.4 Report

The ESHS compliance report will contain the results of the management. It must contain at least the following:

- Reach
- Timeframe
- Trainings
- Inspections

- Statistics of accidents and incidents
- Summaries of indicator compliances for each ESHS specific plan.
- Photographic Panel
- Annex

**Table 4-5 Environmental and Social Monitoring Key Performance Indicators (during Project Construction)**

Key Performance Indicators	Frequency	Locations	Responsibility
<b>Air Quality:</b> <ul style="list-style-type: none"> <li>• Evidence of dust accumulation and suspended particles through visible observation</li> <li>• Period checks with receptors</li> <li>• Particulate PM10 levels compared to the NRCA Standard</li> </ul>	Continuous  Environmental Protection Agency Calendar (STH)  Monthly (SJHC, GPHC and OHHC)	<ul style="list-style-type: none"> <li>• Around active construction zones</li> <li>• Hospital buildings or facilities most proximate to active construction zones</li> <li>• Hospital boundaries to immediately adjacent land uses</li> </ul>	Contractor
<b>Noise:</b> <ul style="list-style-type: none"> <li>• Decibel levels</li> <li>• Decibel levels compared to the NRCA Standard</li> </ul>	Periodically  Monthly	<ul style="list-style-type: none"> <li>• Around active construction zones</li> <li>• Hospital buildings or facilities most proximate to active construction zones</li> <li>• Hospital boundaries to immediately adjacent land uses</li> </ul>	EHS  Contractor
<b>Drainage maintenance and Water Quality management:</b> <ul style="list-style-type: none"> <li>• Visual observation for sedimentation and oil and grease</li> <li>• Drains are clear and free of debris</li> <li>• No localized flooding</li> </ul>	Daily	<ul style="list-style-type: none"> <li>• Perimeter drains within the hospital compounds and drains near material stockpile areas.</li> <li>• Within and around the hospitals</li> </ul>	Contractor
<b>Waste Management:</b> <ul style="list-style-type: none"> <li>• Compliance with NSWMA waste management practices</li> <li>• Littering and waste accumulation</li> </ul>	As Needed  Daily	<ul style="list-style-type: none"> <li>• Waste receptacles, disposal sites and active construction sites.</li> <li>• Roadways</li> <li>• Hospital boundaries to immediately adjacent land</li> </ul>	Contractor
<b>Health and Safety:</b> <ul style="list-style-type: none"> <li>• Toolbox Meeting</li> </ul>	Daily	<ul style="list-style-type: none"> <li>• Active construction work areas</li> </ul>	Contractor

Key Performance Indicators	Frequency	Locations	Responsibility
<ul style="list-style-type: none"> <li>• Use of protective gear by workers</li> <li>• Adequate and appropriate signage</li> <li>• Availability of emergency response equipment</li> <li>• Health conditions of staff.</li> <li>• Demarcation of construction site</li> <li>• Vector control</li> <li>• COVID-19 (and other diseases) preventative measures</li> </ul>	<p>Weekly</p> <p>Continuous</p> <p>Daily</p> <p>Continuous</p> <p>Weekly</p>		
<p>Community Wellbeing/Concerns:</p> <ul style="list-style-type: none"> <li>• Employment</li> <li>• Grievances which may arise</li> <li>• Any emerging issue GBV, SEA, SH, SOD grievances</li> </ul>	Daily Logs, Weekly Review	<ul style="list-style-type: none"> <li>• Within and around the hospitals including staff, construction workers, patients, visitors and neighbours.</li> </ul>	Contractor
<p>Traffic Management:</p> <ul style="list-style-type: none"> <li>• Traffic congestion</li> <li>• Material and equipment on road shoulder causing encumbrances</li> <li>• Traffic control in place</li> <li>• Compliance with traffic rules</li> <li>• Emergency access roads not impeded</li> <li>• Pedestrian pathways clearly demarcated</li> </ul>	Daily	<ul style="list-style-type: none"> <li>• Within and around the construction areas and in nearby communities</li> </ul>	Contractor
<p>Code of Conduct:</p> <ul style="list-style-type: none"> <li>• Awareness by workers</li> <li>• Compliance by workers</li> </ul>	<p>Daily</p> <p>Daily</p>	<ul style="list-style-type: none"> <li>• Within and around the hospitals</li> <li>• In nearby communities</li> </ul>	Contractor
		•	
<p>Security:</p> <ul style="list-style-type: none"> <li>• Guards posted at access points and strategic locations</li> <li>• Regular Patrols</li> <li>• Security Lighting</li> <li>• Secure Personal Lockers</li> <li>• Secure Storage Areas</li> </ul>	Continuous	<ul style="list-style-type: none"> <li>• Around active construction zones and cordoned off areas</li> </ul>	Contractor

## 5.0 OPERATION PHASE

The following sections describe the main activities applicable to all four (4) facilities during the operational phases of the project.

### 5.1 SOLID AND HAZARDOUS WASTE

The facilities in question generate the following types of solid waste during operation:

- Common household waste (organic)
- Recyclable common waste: packaging, bottles, paper, cardboard
- Sweeping or cleaning residues
- Food waste
- Medical waste: bio-contaminated and special waste, sharp waste and other hazardous waste. The medical waste management plan is presented separately in Section 5.2.
- The management of solid waste during the operation will be carried out in the following steps:

#### 5.1.1 Minimization

- The following measures must be enforced to reduce the production of the waste detailed above:
  - Separate and classify mixtures of various types of waste with unknown compositions to ensure their proper disposal.
  - Be aware that the use of materials and products that generate hazardous waste could be substituted by less polluting materials.
  - Avoid the generation of odours from decomposing organic components.
  - Obtain agreements for the return of containers and packaging to the suppliers.
  - Train personnel in waste minimization.

#### 5.1.2 Conditioning

- Select the types of containers or bins and determine the quantity to be used for each generator or service area, while considering capacity, form and material of manufacture.
- Determine the quantity, colour and capacity of the bags (must be at least 20% greater than the capacity of the container) to be used according to the type of waste.
- Avoid bagging organic residues (food remains) containing liquids.
- The personnel in charge of the cleaning will place the containers with their respective bags in the generation points and service areas of the hospital.
- Strategically place containers as close as possible to the generation source.
- Verify the fulfilment of the conditioning according to the type and volume of waste generated by the service.

- The bags containing solid waste, conditioned by the waste generators, must be sealed before they are deposited in the corresponding containers.
- The tanks for the deposit of the waste must be differentiated and labelled according to the type of waste that belongs in them and must be located in strategic and visible places.
- It should be noted that classified waste could potentially be generated as special hazardous (batteries, toner cartridges, ink, fluorescents, spotlights) which will be stored in labelled cylinders that specify the waste.

### 5.1.3 Primary Storage

- In this stage waste management is carried out by the waste generator and the cleaning personnel. It consists in the generated waste being deposited in the receptacles or buckets for its subsequent internal collection. The objective of primary storage is to appropriately dispose of generated waste, while also differentiating the various types of waste in different containers. All the generators of hospital waste will be responsible for the correct execution of the primary storage.
- Receptacles and garbage cans are needed for primary storage, and should have appropriate colours, volumes and quantities. The primary storage process is aimed at achieving primary segregation of waste in: organic waste, inorganic recyclable waste, and hazardous waste. All receptacles and pans should look distinctive and have colours that allow generators to quickly recognize them.
- For the primary storage of hazardous solid waste, rigid containers such as fiberglass, stainless steel, high density polyethylene or other rigid materials may be used to avoid the exposure of the waste.
- The primary storage of the waste in each receptacle will only be up to 80% capacity of the bag.
- The waste will remain in the receptacles until the cleaning personnel collect and deliver in the temporary storage for the respective differentiation; after this, the waste will be transported to the Central Storage, according to schedules and collection frequencies of the collection route sheet.

### 5.1.4 Collection

- This activity is carried out by the personnel in charge of the transfer to Central Storage.
- The established collection route sheets will be strictly followed, as well as the frequencies and schedules of internal collection.
- The operator responsible for the collection of solid waste will be responsible for verifying that the waste is sealed and delivered according to the colours established for its disposal.
- After carrying out the waste collection, the number of bags or receptacles and the operator's name will be registered, the waste being coded for subsequent weighing.



### 5.1.5 Central Storage

It is an infrastructure where waste from primary storage accumulates and activities prior to final disposal are carried out, such as segregation, characterization and conditioning. The Storage area will have the following facilities:

- Office is the space provided for the administration of documents and logistics.
- Warehouse, space where cleaning products are stored, such as detergents, bleaches, disinfectants, etc., as well as cleaning equipment (brooms, mops, among others).
- Hygienic services and changing rooms
- Changing rooms, exclusively for authorized company staff that operates the Treatment System.
- Spaces dedicated to the segregation and storage of common recoverable and non-recoverable waste and hazardous waste (biomedical, special, and other).

### 5.1.6 Final Disposition

- A company must be hired that transports the solid waste to a sanitary landfill authorized by the corresponding authority.
- The transport is in charge of a waste company, which has the authorizations to transport non-hazardous waste as hazardous waste which is transported considering the following distribution:
  - Recyclable waste: marketing
  - Common waste: sanitary landfill
  - Hazardous waste: safety stuffing
- Before transport, the Hospital ESS personnel must be verified that the vehicles are equipped with safety equipment, such as fire extinguishers, first aid kit, toolboxes, etc.
- The companies that perform the final disposal in the landfill must have the proper authorization of the competent authorities and municipalities in their jurisdiction. Currently, waste is disposed in the Riverton City Disposal Facility.
- Weekly assessment of the quantity of medical and non-clinical waste generated must be undertaken and records maintained of its ultimate treatment and disposal.

## 5.2 MEDICAL WASTE MANAGEMENT AND DISPOSAL PLAN

In hospitals and health centres, medical waste and special waste will be generated during the operation of the facilities. Medical waste is hazardous waste generated in the process of medical care. Furthermore, it is contaminated with infectious agents, or may contain concentrations of microorganisms that are potentially dangerous for the person who comes in contact with them.

The following list contains the anticipated medical waste to be generated at each hospital:

- Patient care: solid waste contaminated or in contact with secretions, excrement and other organic liquids from patient care, including the remains of food and drinks from them. It also includes the disposable medical instruments used.

- **Biological:** biological samples, mixtures of microorganisms and inoculated culture media from the clinical or research laboratory, expired or unused vaccines, filter of air aspirators of areas contaminated by infectious agents and any residue contaminated by biological agents. It also includes expired, damaged, or used biological products, which were discharged according to current administrative procedures.
- **Bags containing human blood and blood products:** materials or bags with human blood content, blood samples for analysis, serum, plasma and other by-products or blood products, both expired or used.
- **Surgical and Anatomical-Pathological Residues:** Composed of tissues, organs, placentas, anatomical parts or remains of dead fetuses. These result from medical and surgical procedures and solid waste contaminated with blood or others.
- **Sharp points:** these include hypodermic needles, with or without syringes, pipettes, scalpels, lancets, culture plates, suture needles, and needle catheters, other objects of broken or whole glasses or short sharp objects thrown away.

Special waste is hazardous waste generated in the Support Medical Services, with physical and chemical characteristics that can be corrosive, flammable, toxic, explosive or reactive and of potential danger to an exposed person. Special waste can be classified as follows:

- **Hazardous Chemical Residues:** with toxic, corrosive, flammable, explosive, reactive, genotoxic or mutagenic characteristics, such as pharmaceutical products (chemotherapeutic), chemical products not used, solvents, acids and strong bases, chromic acid (used in cleaning laboratory glasses), mercury thermometers, solutions for development of x-rays, used lubricating oils, containers with petroleum products, toner, batteries, among others.
- **Pharmaceutical waste:** partially used, deteriorated, expired, contaminated or generated as a result of medical care and research.
- **Radioactive waste:** composed of radioactive materials or contaminated with radioisotopes.

For a successful waste management system, a systemic approach needs to be adopted both within and outside the facilities. These activities include the following:

- Segregation of waste at source and primary storage
- Effective sharp management
- Collection and internal transportation of waste
- Appropriate technologies for waste management (to be determined by UNOPS)
- Occupational safety and infection control
- Off-site facilities for transportation, final treatment and disposal of infectious waste

### 5.2.1 Segregation and Primary Storage

- Segregation consists of separation (classification) at the point of generation, according to its type (bio contaminated and special) in the corresponding container that is differentiated by colours; red (bio contaminated) and yellow (special).

- Clearly designated waste storage area which must be well ventilated.
- There must be containers placed in areas where medical, special and sharp waste will be generated.
- The containers must have the following characteristics: surgical steel material and / or seamless high density polyethylene, with a thickness of no less than 2 mm, funnel-shaped, inverted, red, and yellow with an international symbol with a lid; a half moon or pedal, resistant to perforations and filtrations, material that prevents bacterial growth, with a mechanism that makes it impossible to spill its contents for the best sanitary risk control, and it must also be washable. The containers located in the identified areas will have a capacity of approximately 30 L.
- The containers will contain red high density polyethylene bags for bio contaminated waste, and yellow for special waste.

Puncture-cutting waste containers must be rigid, waterproof, and resistant to transfer to the cutting material with a capacity of 0.5 to 20 litres with the lid on, which seals to prevent spills, and it must be properly labelled.

- Effective sharp management

Good sharps management practices help in reducing infections. HIV or hepatitis transmission through contaminated blood has triggered improvement in sharps safety and management. No studies are available on the percentage of HIV contamination from poor management of medical waste. There is the danger that syringes will be recovered from transfer depots and disposal sites by waste personnel for recycling (i.e., by drug users)

- Disinfection
- Effective needle destruction or mutilation (e.g., use mechanical or electrical needle cutters)
- Proper training of health providers

### 5.2.2 Collection and Internal Transportation of Waste

- Establish frequency for waste pick-up. The current frequency of waste collection may need to be adjusted as the rehabilitated hospital will serve more patients.
- Those responsible for the collection will be established and the routes will be enabled, and internal / external signage will be implemented.
- The vehicle container must have an articulated lid on the body and rotating wheels.
- The use of the forklift must comply with the hours stipulated for the collection, then it must be disinfected.
- All cleaning personnel who use the vehicle should check the cleanliness of the container after the transfer of solid waste.
- Obtain vehicles with a capacity of 200 litres, high density polyethylene material, washable, smooth internal surfaces, with blunt edges and equipped with an articulated lid. Thickness: no

less than 7mm. Form: variable. Requirement: car type with wheels of rotating type, stable, hermetic cover, waterproof, washable and light colour.

- The solid waste transfer vehicles of the facilities will not be used for any other purpose.
- Staff must have received mandatory Biosecurity and hospital solid waste management training.
- The cleaning staff should have long-sleeved jackets, long pants and caps that are all made of resistant materials and light colours. Additionally, industrial PVC gloves impervious and resistant to corrosive substances, as well as shoes that are impermeable to corrosive substances or light-coloured cut boots. White, semi-facial and waterproof masks that allow natural breathing, colourless panoramic lenses with resistant plastics, flexible plastic frames and side protection and a valve for ventilation.

### 5.2.3 Occupational Safety

Occupational safety measures are important for safeguarding the health of health-care workers and others collecting and treating waste, along with the added advantages of ensuring infection control and patient safety. Health care workers should be trained in the following:

- Chemical hazards
- Physical hazards
- Prevention controls
- Work stress
- Infectious agents

### 5.2.4 Transportation and Final Disposal of Waste

- For some waste, incineration may be used as a treatment process. However, waste from **Spanish Town Hospital** is currently transported to the Southeast Regional Medical (Infectious) Waste Treatment Facility in Kingston.
- The rest of the bio contaminated solid waste is collected and disposed of by an authorized company, which renders its services on a daily basis at the established time and is in charge of the treatment of the aforementioned waste. Currently, this waste is disposed at the Riverton City Disposal Facility.
- The characteristics of the transport vehicle should be the following: the model is a van type with internal coating with the presence of stainless steel or other washable material, it is used exclusively for that type of service, and it is duly identified.
- The personnel in charge of external transportation are wearing the corresponding clothing and accessories (cap, mask, gloves, and boots).
- The external transport of waste is duly coordinated, programmed, and executed according to the established contract.

## 5.3 STORMWATER AND WASTEWATER MANAGEMENT PLAN

The effluent generated in the facilities' operations consist mainly of storm water runoff from the paved surfaces and from the sanitary wastewater/sewage (**Spanish Town Hospital and St. Jago Park Health Centre only**) from the services for the public and employees.

The strategies to prevent and control the impact of storm water runoff rainwater are:

- Implementation of sand filters or other best management practices (BMP) to minimize pollutants generally present in storm water runoff,
- Implementation of a pollution prevention plan at each facility.

The strategies to control domestic sewage discharges sewage (**Spanish Town Hospital and St. Jago Park Health Centre only**) are:

- Upgrade of the Spanish Town Hospital domestic wastewater treatment plant on site to treat the domestic effluent (from both Spanish Town Hospital and St. Jago Park Health Centre) prior to discharge.
- In addition, there should be fortnightly monitoring of the wastewater treatment plant effluent and quarterly reports to be submitted to NEPA. Parameters to be monitored include BOD, COD, TSS, Nitrates, Phosphates, pH, Faecal coliform, and Residual Chlorine (as stated by NEPA Environmental Licence).

## 5.4 OCCUPATIONAL AND COMMUNITY HEALTH AND SAFETY RISK MANAGEMENT PLAN

### 5.4.1 Environmental and Safety Training Plans

Each facility must develop a comprehensive training program on a daily, weekly and annual basis, emphasizing technical training and safety, with a focus on the development of skills and behaviour. These programs will be developed taking into account the following provisions:

- New workers will receive induction or general orientation training of no less than 8 hours.
- The adequate training for the job will consist of the theoretical-practical learning of how to correctly, quickly, conscientiously, and safely complete tasks.

The Training Program is designed for all operators, workers and leaders of areas. The program covers the topics of safety, environment, and communities which will be touched on during daily talks and trainings. The topics that should be included in the program are:

- Occupational Health: following the risk analysis in Occupational Health based on the activities developed by the collaborators, training the personnel a proactive attitude in the prevention of occupational diseases.



- First Aid
- Cardiopulmonary resuscitation (theoretical-practical).
- Ergonomics: General guidelines and recommendations.
- Occupational Health and Safety Policy, Environmental
- Environmental aspects: noise, solid waste management, effluent management, water saving
- Unsafe acts: dangers and risk.
- Report of accidents and incidents.
- Waste Management

The permanent training of personnel in terms of environment, safety and occupational health, and emergency response is an essential element for compliance with the Environmental Management Plan. The guidelines will be the basis for the development and implementation of specific training programs based on the number of personnel, training level and requirements of each job.

#### **5.4.1.1 Training for Brigade**

During an emergency, there are many difficulties, situations and circumstances (foreseen and unforeseen) that demand effort and knowledge of the personnel. But the human lives that are in danger and that need help are the priority, which is why personnel will be trained to know what to do in these situations, and how to immobilize and transfer wounded patients. The staff of the brigade will receive training in first aid and firefighting, carrying out practices with equipment available to the rescue station. The training will be aimed at the entire staff community, who do not necessarily have previous knowledge related to the subject.

#### **5.4.1.2 Emergency Plan and Transfer of Wounded**

- Emergency Plan
- Injuries
- Transfer of Poly traumatized Patients
- Practical Patient Immobilization and Transfer Station

#### **5.4.1.3 Fire Fighting**

The purpose of this training is to provide basic knowledge in the fight against fire, handling and use of fire extinguishers. The related topics are:

- Presentation
- Fire behaviour
- Fire Extinguishing Agents
- Theoretical Evaluation
- Practice Station
- Cardiopulmonary resuscitation (CPR)

#### **5.4.1.4 Basic Life Support and Early Defibrillation**

- Presentation

- Sudden death
- Cardiopulmonary resuscitation
- Automatic External Defibrillation (AED)
- Practice CPR station and use of DEA
- Theoretical Evaluation

#### 5.4.1.5 Drills

Within the activities of the emergency committee, the head of hospital security will be responsible for approving the "Programming of Drills," referring to the response to environmental impact emergencies, in order to verify the effectiveness of the response procedures.

- Training for rescue personnel
- The rescue personnel must be trained in the following subjects:
  - Familiarization with the hospital
  - Emergency Communications Systems
  - Equipment and tools
  - Extinguishing agents and combustion chemistry
  - Assistance for emergency evacuation
  - Clothing and respiratory protection equipment
  - Adaptation and use of structural equipment for the rescue and extinction of fires
  - Firefighting operations
  - Emergency Plan
  - Basic life support and CPR
- All rescue personnel participate in supervised practices related to the tasks to be performed during an emergency, under supervision:
  - Immobilization and transportation of the injured.
  - Defibrillator operation
  - Control of leaks and spills of hazardous materials

#### 5.4.2 Control of Occupational Hazards

This sub program contains guidelines to ensure that there are no safety problems that put the workers at risk during the execution of the activities. Its purpose is to establish the methodology for the identification of hazards, assessment of occupational risks and determination control measures for activities that present significant risks, in order to reduce these risks to acceptable levels for the organization.

The identification of hazards, evaluation and control of risks will be updated at least once a year or when the working conditions change or any damage to the health or safety of the worker have been evidenced. To identify the greatest number of hazards in their activities, those responsible for each area will consider the dangers resulting from:

- The design of work areas, processes, facilities, machinery / equipment, operating procedures and work organization, including their adaptation to human capabilities.
- Routine, non-routine and emergency activities.
- Human behaviour and capabilities, as well as other human factors.
- Identified dangers that originate outside the workplace and are performing functions under the control of the organization, capable of affecting the health and safety of people.
- Infrastructure, equipment and materials in the workplace, whether provided by the organization or by others.
- Changes or proposals for change in the organization, its activities or materials.
- Modifications to the management system, including temporary changes.
- Any applicable legal obligation related to the risk assessment and the implementation of the necessary controls.
- Additionally, the following will be taken into account in the risk assessment:
- The risk factors that may affect the functions of procreation of workers.
- The focus on gender and protection of women workers.

After assessing the risks of each activity, the work team will suggest the control measures for those hazards that reached the "high" risk level. To control risks, regulations should be proposed taking into account the following hierarchy:

- Elimination of the Danger: modify the design to eliminate the danger; for example, introduce mechanical lifting devices to eliminate the danger of manual loading, etc.
- Substitution of the Danger: replace with a less dangerous material or reduce the energy of the system; for example, reduce force, amperage, pressure, temperature, etc.
- Engineering controls: use of new technologies; for example, install ventilation systems, machine guards, gears, soundproof booths, etc.
- Signalling / warnings and / or administrative controls: Its effectiveness depends on human decisions; for example, safety procedures, equipment inspection, safety signs, dangerous area marking, photo luminous signs, markings for pedestrian paths, sirens / alarm lights, alarms, access controls, safe work systems, work permits and labelling, etc.
- Personal protective equipment: as a final control measure, PPE will be delivered to workers; for example, safety glasses, hearing protectors, face shields, harnesses and safety slings, respirators and gloves, etc.

### 5.4.3 Internal Inspections

Inspection is one of the main tools that helps to identify the acts and / or substandard conditions in the work areas, with the aim of correcting and improving working conditions; for this, different types of inspections are available:

- Planned: those that are carried out through work schedules.
- Unplanned: those that can be done at any time of the day without prior notice.

Of the inspections, the following can be mentioned:

- Planned and unplanned inspections: carried out at the facilities by the people in charge of each area.
- Inspections to emergency response teams: made to fire extinguishers, fire hoses, smoke detectors and emergency lights.
- Unplanned inspections: carried out in the environments where the personnel and contractors work.

## 5.5 EMERGENCY RESPONSE MANAGEMENT PLAN

A Contingency Plan has been established, in order to be prepared for emergencies or unforeseeable situations that could have adverse effects on the environment. Operations will involve staff and patients who may have accidents. This may include fire safety, safe access routes, clearly defined pedestrian pathways, electrical hazards, eye hazards and radiation hazards. In addition, disasters such as earthquakes, floods and hurricanes are real possibilities.

A Contingency Committee will be formed that will be in charge of coordinating the main actions, the human and physical resources to be mobilized in cases of emergencies and will make the basic decisions to be followed before and after the emergency. In cases of higher-level emergencies that require external participation, the plan considers the following points of contacts:

- Police
- ODPEM
- Fire Station
- Parish Disaster Coordinator
- Jamaica Defence Force
- Parish Public Health Department
- Parish Municipal Corporation

An emergency assembly location in the event of fires or earthquakes must be established and marked with proper signage.

### 5.5.1 Fire

#### 5.5.1.1 Prevention and Minimization of Risks

##### Operational Control

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- Form an emergency committee, which is properly trained to act in case of fire.
- An emergency assembly location must be established and marked with proper signage.
- Avoid the accumulation of garbage deposits in the vicinity of combustible and flammable materials.



- If incipient fire is suspected, act quickly using the extinguishers that will be located in a visible place.
- Flammable liquids must be kept away from sources of combustion.
- The critical areas must have a complete signalling system according to the current regulations, making use of the colour code and signals.
- Part of the training of the personnel that enters to work will be the correct use of extinguishers, fire alarms, and for specific cases -according to type of work or work-, activation of hoses, pumps or foam system.
- All the installations will have the plans of evacuation in case of fires published in a visible place, indicating the location of extinguishers and alarms.
- The escape routes of all the facilities will be properly signalled.
- All personnel will be responsible for eliminating, controlling and informing the head of the corresponding area about the conditions and / or actions that may cause a fire situation.
- The initiation of open fires in the entire area of operations of the mine or its surroundings shall be prohibited.
- The personnel that enters the different facilities must be instructed in the entrances and / or exits, as well as in the evacuation routes.

#### Engineering Control

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- Have engineering designs that contemplate the safety standards necessary to avoid the occurrence of short circuits, cable crossing or any other similar event that could cause a fire event.
- All the areas will have devices in case of fire according to the activities that are carried out in those areas (extinguishers, hoses network and water tanks).
- All zones will have an immediate alarm system.

#### Response Procedure

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- Before the occurrence of fires, the brigades of the zone will request the evacuation of the involved area and will look to identify the point of origin of the fire to control it with the emergency teams.
- Proceed to extinguish the fire with the use of fire extinguishers.
- If the fire cannot be extinguished, alarm systems will be activated to request help from other groups and the firefighting team, indicating the location, personnel affected-if any-and evacuation procedures that are being carried out.
- Communicate with the emergency committee.
- If the fire cannot be controlled or the help is not sufficient, it will be notified by means of radios, flashes of lights and personal notices indicating the location of the fire and the escape route(s) to be taken.
- If necessary, as required by the firefighting team, external support will be requested.

- Inventory and registration of the personnel that has been evacuated will be carried out to identify possible victims. Likewise, the first medical attention will be given in safe places and according to this; its referral to specialized institutions will be evaluated.

#### Operations Normalization

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- Once the fire is controlled and extinguished, the trained personnel will evaluate the situation to authorize the entry of rescue personnel and to estimate the damages.
- Once all the areas involved have been evacuated and inspected, access will be restricted and the necessary cleaning, restoration and reconstruction procedures will be activated.
- The causes of the fire will be investigated, and corrective measures will be proposed.

#### Training and Follow-up

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- All personnel at the facility will be trained in extinguisher management, evacuation routes and fire response procedures.
- Training in first aid and personal protection in case of fire will be given every six months.

#### Drills

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The primary reason for conducting fire drills is to educate occupants about the procedures to follow in the event of a fire. These drills provide an opportunity for staff to locate and use primary and alternative exit routes, and to familiarize themselves with the location of the emergency assembly locations any alarm system components found on their floor such as manual pull boxes and warden phones. Fire drills are the time to not only prepare for fire, but to enable staff to be better able to handle the many other non-fire situations they may encounter.

- Have a fire drill within a month of the opening of the facility in order for staff to get acquainted.
- After the initial drill, these can be held quarterly for each shift. Patients are not required to participate in these sessions.
- All staff personnel are obliged to attend.
- Records of such drills must be maintained in a log book for three (3) years.

### 5.5.2 Seismic Hazards

The prevention measures against probable seismic movements will be the following:

- A week before starting the activities and whenever considered necessary, discussions will be held, which will serve to indicate the measures before, during and after an earthquake.
- Establish security zones in the area of activity of the project.
- An emergency assembly location must be established and marked with proper signage.
- Carry out simulations to deal with seismic movements through the committee or emergency brigade, which must have the corresponding training.

The actions that must be followed during the occurrence of seismic movements must consist of:

- Move away from demolition or construction areas during movement.
- Evacuate towards the established safety zone.
- Stay calm.

After the occurrence of a seismic movement, the following activities must be carried out:

- Personnel accountability.
- Search and identification of accident victims.
- If there were injuries, call fire department immediately, or request ambulances if necessary.
- The injured must receive the necessary first aid before the arrival of specialized assistance, by the emergency committee.
- Assessment of damage to equipment and the environment.

#### 5.5.2.1 Dos and Don'ts

##### Do's

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- Remain calm.
- Stay inside, if there.
- Stay outside, if there.
- Watch for falling objects.
- Check for injuries and administer.
- Check for fires.
- Check utilities-shut off where necessary.
- Be prepared for additional earthquake shocks.
- Respond to request from relief organizations.
- Take cover under a nearby, desks table or in a doorway.

##### Don'ts

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- Do not light a match or use any form of open flame.
- Do not go near buildings that may be weakened by earthquake.
- Do not turn on light switch or use any electrical appliance.
- Do not run downstairs.
- Do not go near to the window.

#### 5.5.2.2 Drills

The primary reason for conducting earthquake drills is to educate occupants on the locations of the emergency assembly locations and about the procedures to follow in the event of an earthquake. These drills give employees opportunities to practice what they have learned and condition themselves to react spontaneously and safely when the first jolt or shaking is felt. To help protect workers in the immediate aftermath of earthquakes or other disasters, arrange for employees to be trained now in first aid, cardiopulmonary resuscitation (CPR), and the use of fire extinguishers.

- Have an earthquake drill within a month of the opening of the hospital or health centre in order for staff to get acquainted.
- After the initial drill, these can be held quarterly for each shift. Hotel guests are not required to participate in these sessions.
- All staff personnel are obliged to attend.
- Records of such drills must be maintained in a log book for three (3) years.

### 5.5.3 Flooding

Consider the following when preparing for floods:

- Establish warning and evacuation procedures. Make plans to move records and equipment to a safe area in case of floods.
- Monitor the media and have a battery-operated radio and battery back-up for flood watchers and warnings.
  - Flood Watch – Flooding is possible. Be prepared to evacuate. Tune to local radio and television stations for additional information.
  - Flood Warning – Flooding is already occurring or will occur soon. Take precautions at once. Be prepared to go to higher ground. If advised, evacuate immediately.

Upon receiving a Flood Warning:

- Store drinking water in various containers, water services may be interrupted.
- Move essential items to safe ground.
- Move from lower to a safe area before access is cut off by flood water.
- Ask your insurance carrier for information about flood insurance. Regular property and casualty insurance does not cover flooding.
- Consider the feasibility of flood proofing your facility. These include:
  - Installing check valves to prevent water from entering where utility and sewer lines enter the facility.
  - Reinforcing walls to resist water pressure. Sealing walls to prevent or reduce seepage.
  - Building watertight around equipment or work areas within the facility that are particularly susceptible to flood damage.
  - Installing permanent watertight doors.
  - Installing permanent pumps to remove flood waters.
- Consider the need for backup systems:
  - Portable pumps to remove flood water.
  - Alternate power sources as generators or gasoline-powered pumps.
  - Battery-powered emergency lighting.
- During the Flood:
  - Avoid areas subjected to flooding.
  - Do not attempt to cross a flowing stream where water above your knees.
  - Do not attempt to drive over a flooded road you can be stranded and trapped.



- After the Flood:
  - Do not use fresh food that has come in contact with flood waters.
  - Test drinking water for potability.
  - Seek necessary medical care. Food, clothing and first aid are available at shelters with Red Cross in attendance.
  - Do not visit disaster areas; your presence might hamper rescue and other emergency operations.
  - Do not handle live electrical equipment in wet areas; electrical equipment should be checked and dried before returning to service.
  - Use flashlights, not lanterns or torches to examine buildings; flammables may be inside.

### 5.5.4 Hurricane

The hurricane season in the Caribbean area starts on the first of June and ends on the thirtieth of November of each year; however, experience demonstrates that hurricanes are more frequent in the geographical area during the months of August and September. It is therefore essential that the site is prepared in case of an emergency caused by a hurricane.

It is vital that there exists correct organization of human resources to face up to such conditions, therefore the Emergency Response personnel listed should be designated. Personnel should make arrangements in advance to maintain the safety of the site, materials and equipment before, during and after a hurricane. The preservation of lives and the safety of personnel shall take precedence over all other considerations when determining the actions to be taken in case of threatened damage.

The basic checklist includes:

- Ensure there is enough water (potable and non--potable), food, oxygen, linens, pharmaceuticals, blood supply and essential medical supplies (plan for 7--10 days).
- Remove and secure all oil/gas cans, drums and buckets.
- Secure all loose items/equipment outside the buildings.
- Secure Company records ensuring that back-ups are done and stored off-site.
- Secure Electrical cables and electronics.

## 5.6 TRAFFIC MANAGEMENT PLAN

Increased patient volume has the potential to increase traffic volumes along hospital routes, adjoining roads and within the boundaries. This may also lead to delays (for commuters and emergency response vehicles) and safety hazards (vehicular and pedestrian).

The following measures will be taken:

- Mitigate any situation that may alter the development and operating conditions of the road network in the surroundings, allowing fluid access for the users of the project and minimizing

the interference in the circulation of vehicles not linked to the hospital/health centre's own activity.

- The hospital/health centre should ensure that roads, pathways, and access ways are properly maintained to account for increased vehicular traffic.
- Install pedestrian/vehicle barriers to ensure separation of the two to reduce potential of accidents.
- Ensure proper signage and functioning signals.

## 5.7 INDOOR AIR QUALITY

In order to maintain a healthy indoor environment, the following steps should be taken during operations:

- All HVAC systems must have a service schedule where units are cleaned and maintained, and filters are inspected.
- Monitoring of temperature, relative humidity and carbon dioxide inside the building/offices etc.
- Review pressure gradient semi-annually to ensure areas designated to have negative pressure (restrooms, chemical storage rooms, operating theatres, infectious disease rooms etc.) remain under negative pressure.
- Building envelope must be inspected for leaks.
- Interior of building must be inspected for leaks and evidence of mould growth.

Table 5-1 Environmental and Social Monitoring Key Performance Indicators (during Project Operation)

Key Performance Indicators		Frequency	Responsibility
Management of waste	<ul style="list-style-type: none"> <li>• Compliance with and regulations and guidelines for health facilities</li> <li>• Adequate collection and storage receptacles for medical and non-clinical waste</li> <li>• Mechanism for the collection, storage and disposal of medical and non-clinical waste</li> <li>• Appropriate trained personnel</li> <li>• Compliance with waste management practices by staff</li> <li>• Appropriate PPE being utilized in handling of waste</li> </ul>	Daily	MOHW
Maintenance of health facilities	<ul style="list-style-type: none"> <li>• Electrical, plumbing, air-conditioning, sanitation, wastewater and sewage systems are fully functional</li> <li>• Maintenance programme in place and active</li> </ul>	Daily	MOHW
Air pollution from onsite incinerators	<ul style="list-style-type: none"> <li>• Open burning is prohibited</li> <li>• Waste collection and management system functional and permitted</li> </ul>	Monthly	MOHW
Particulates		Quarterly	Contractors

Key Performance Indicators		Frequency	Responsibility
	<b>PM 10 and PM 2.5 Monitoring</b>		
Noise from electricity back-up systems	<ul style="list-style-type: none"> <li>Decibel levels from generators and compressors</li> </ul>	Periodically or as Needed	MOHW
Water Quality	<ul style="list-style-type: none"> <li>Monitoring of sewage plant</li> <li>Potable Water</li> </ul>	Bi-monthly Quarterly or as Needed (If contamination suspected)	Contractor
Occupational Health and Safety Systems	<ul style="list-style-type: none"> <li>OH&amp;S personnel on staff</li> <li>Reports from OH&amp;S personnel on training, awareness, etc.</li> <li>PPEs available and are utilized</li> </ul>	Monthly	MOHW
Green Space Maintenance	<ul style="list-style-type: none"> <li>Maintenance of existing green spaces</li> </ul>	Continuous	MOHW
Vector Control Mechanisms	<ul style="list-style-type: none"> <li>Regular inspections and removal or potential breeding sites</li> <li>Bait Stations</li> <li>Waste Management</li> </ul>	Continuous	MOHW
Emergency Response System including Fire Safety and Prevention	<ul style="list-style-type: none"> <li>Emergency Response System in place</li> <li>Emergency detection and response equipment provided including firefighting equipment</li> <li>Record of maintenance of equipment</li> <li>Record of orientation and training conducted</li> <li>Record of drills conducted</li> </ul>	Continuous  As per specifications  Monthly	MOHW
Security Risk	<ul style="list-style-type: none"> <li>Adequate security personnel</li> <li>Use of security cameras</li> <li>Use of security lights</li> <li>Regular security patrol</li> </ul> Adequate Security Checkpoints	Continuous	MOHW
Disaster Management Arrangements and Drainage Maintenance	<ul style="list-style-type: none"> <li>Disaster Risk Assessments conducted</li> <li>Interventions being made to reduce risk</li> <li>Disaster Response Mechanism developed and implemented</li> </ul>	Monthly	MOHW
Grievance Mechanisms: <ul style="list-style-type: none"> <li>Staff</li> <li>Stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Contact arrangements such as notices, phone numbers, social media links etc. are active and accessible.</li> <li>There is ongoing collection, acknowledgement, assessment and responses to grievance</li> <li>Documentation of grievances and responses</li> <li>Timelines for responses</li> <li>Assessment of effectiveness of responses</li> </ul>	Continuous	MOHW

Key Performance Indicators		Frequency	Responsibility
	<ul style="list-style-type: none"> <li>Ensure equitable healthcare for minority groups and vulnerable populations</li> </ul> <p>Adequate diversity and representation at all levels of staffing</p>		

## 6.0 ESTIMATED COSTS

Table 6-1 Costs to implementing the mitigations measure include in the Environmental Management Plan<sup>2</sup>

Description	Unit	Unit Cost	Total (USD)	Grand Total (USD)
<b>Environmental and Social Management Plan (ESMP)</b>				
Institutional Strengthening Management Plan	1	\$30,000	\$30,000	\$30,000.00
<b>Pre-Construction Phase</b>				
Training Program- EHS	4	\$12,000	\$48,000	
Communication Strategy	4	\$12,000	\$48,000	
Hazardous Material Management	4	\$12,000	\$48,000	
Tree Compensation Plan	1	\$5,573.22	\$5,573.22	
Total Pre-Construction Phase Plans				149,573.22
<b>Construction Phase</b>				
Solid, Debris, and Hazardous Waste Management Plan	4	\$12,000	\$48,000	
Asbestos Management Plan and Abatement ( <i>Spanish Town Hospital only</i> )	1	\$40,000	\$40,000	
Traffic Management Plan	4	\$12,000	\$48,000	
Noise, Air and Vibration Emissions Mitigation Plan	4	\$8,000	\$32,000	
Noise, Air and Vibration Emissions Monitoring ( <i>per monitoring exercise</i> )	4	\$3,800	\$15,200	
Heritage and Cultural Management Plan	4	\$5,000	\$20,000	
Heritage and Cultural Watching Brief	4	\$4,000	\$16,000	
Grievance Mechanism Plan	4	\$12,000	\$48,000	
Livelihood Restoration Plan (LRP)	4	\$12,000	\$48,000	
LRP Vendor Relocation Assistance and Travel Allowance	8	\$80	\$640	
OHS & Community Risk Management Plan	4	\$12,000	\$48,000	
Emergency Response Management Plan	4	\$12,000	\$48,000	
Monitoring and EHS Supervision ( <i>per month</i> )	4	\$18,000	\$72,000	
Total Construction Phase Plans				\$483,840.00
<b>Operation Phase</b>				
Solid Waste Management Plan	4	\$12,000	\$48,000	
Medical Waste Management Plan	4	\$12,000	\$48,000	
Stormwater and Wastewater Management Plan	4	\$12,000	\$48,000	
Sewage Effluent sampling and monitoring ( <i>Spanish Town Hospital and St. Jago Park Health Centre only</i> ) ( <i>per monitoring exercise</i> )	1	\$3,500	\$3,500	

<sup>2</sup> These are estimated costs, to be defined once the final project plans for each facility are completed.



OHS & Community Risk Management Plan	4	\$12,000	\$48,000	
Emergency Response Management Plan	4	\$12,000	\$48,000	
Traffic Management Plan	4	\$12,000	\$48,000	
Indoor Air Quality Management Plan	4	\$8,000	\$32,000	
Indoor Air Quality Monitoring ( <i>per monitoring exercise</i> )	4	\$25,000	\$100,000	
Total Operation Phase Plans				\$423,500.00
<b>GRAND TOTAL</b>				<b>\$1,086, 913.22</b>

## 7.0 REFERENCES

Inter-American Development Bank, 2021. *Guidelines for the Environmental and Social Performance Standards*, s.l.: s.n.

Ministry of Entertainment, Culture Gender and Sport, 2021. *Sexual Harassment Act of Jamaica*, s.l.: Jamaica Printing Services Limited.

National Environmental and Planning Agency, n.d. *nepa.gov.jm*. [Online] Available at: [https://www.nepa.gov.jm/sites/default/files/2021-01/Asbestos\\_Management\\_Guidelines\\_2014.pdf](https://www.nepa.gov.jm/sites/default/files/2021-01/Asbestos_Management_Guidelines_2014.pdf) [Accessed 15 February 2023].

Natural Resources Conservation Authority, 1997. *Noise Abatement Act*, s.l.: s.n.

Natural Resources Conservation Authority, 2006. *Air Quality Regulations*, s.l.: s.n.

Natural Resources Conservation Authority, 2013. *Wastewater and SLudge Regulations*, s.l.: s.n.

Planning Institute of Jamaica, 2019. *Jamaica Survey of Living Conditions 2018*. s.l.:s.n.

RINA, 2018. *Environmental and Social Assessment (ESA) & Environmental and Social Management Plan (ESMP) for the Health and Systems Strengthening Program for the Prevention and Care Management of Non-Communicable Diseases in Jamaica*, s.l.: s.n.

United States Environmental Protection Agency, n.d. *Sampling Schedule Calendar*. [Online] Available at: <https://www.epa.gov/amtic/sampling-schedule-calendar> [Accessed 16 February 2023].