ENVIRONMENTAL & SOCIAL MANAGEMENT FRAMEWORK (ESMF)

for the

OECS Regional Health Project (P168539)
SAINT LUCIA

ACRONYMSAND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BMP	Best Management Practice
CEHI	Caribbean Environmental Health Institute
CUBiC	Caribbean Uniform Building Code
CZMAC	Coastal Zone Management Advisory Committee
DCA	Development Control Authority
EA	Environmental Assessment
EHD	Environmental Health Department
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
EOC	Emergency Operations Centre
ESSS	Environmental and Social Safeguards Specialist
HIV	Human immunodeficiency virus
ILO	International Labor Organization
MCH	Maternal and Child Health
MOPD	Ministry of Physical Development, Environment and Housing
MOHW	Ministry of Health and Wellness
MCWTPU	Ministry of Communications, Works Transport and Public Utilities
NEAP	National Environmental Action Plan
NEC	National Environmental Commission
NEMAC	National Emergency Management Advisory Committee
NEMO	National Emergency Management Organisation
NEOC	National Emergency Operations Centre
NEP	National Environment Policy
NEMS	National Emergency Medical Services
NGO	Non-governmental Organisation
OAS	Organisation of American States
OECS	Organisation of Eastern Caribbean States
OP	Operational Policy
PCU	Project Coordination Unit
PAHO	Pan American Health Organisation
PIU	Project Implementation Unit
PPP	Public Private Partnership
UN	United Nations
UNFCCC	United Nations Framework Convention on Climate Change

WBG	World Bank Group

EXECUTIVE SUMMARY

The Government of Saint Lucia is collaborating with the World Bank Group (WBG) to develop a health project with the objectives to improve the resilence of the health system and to improve the responsiveness of health service delivery during public health emergencies. The OECS Project for Saint Lucia has three (3) main components:

1. **Component 1: Health Facilities and Laboratory Networks** focused on bolster select health facilities and lab infrastructure to improve resilience to weather related disasters and strengthen lab capacity to handle priority infectious diseases.
2. **Component 2: Public Health Preparedness and Response** which will focus on Health Information Systems and Surveillance andPublic Health Emergency Preparedness and response.
3. **Component 3: Institutional Capacity Building and Project Management**to support country level implemnetation of the project with a focus on:
   - Project Management
   - Fiduciary capacity building for implementation
   - Project monitoring and evaluation of project activities

The precise location of some activities is not yet known in detail, so an Environmental and Social Management Framework (ESMF) is being created to present the details of agreed policies and procedures, implementation roles and responsibilities for managing the Government's safeguard responsibilities, the framework will describe the general approach that will be followed to avoid or mitigate any negative harms which may arise from project activities.

The activities are not expected to lead to significant negative environmental impacts, nonetheless there is potential negative impacts associated with activities during typical small civil works during retrofitting works on the health facilities and, during vector control and management activities. These are all addressed using the Banks Policy 4.01 and this document which provides of a generic list of potential harms with mitigation measures, alongside any Best Management Practices (BMPs) and standard contract clauses for small civil works (Appendix 3), and a pre-design screening tool in 5.1, to identify any special conditions requiring additional mitigation measures.

Saint Lucia, under the concurrent Health Sector Strengthening Project, will develop a Medical Waste Management Plan (MWMP).The main objective for the development of this plan is to identify the level of medical waste management that will be relevant to help implement and enforce proper health and environmentally sound, technically feasible, economically viable, and socially acceptable systems for management of health care waste during and beyond the implementation of the project.

The Public Health Act of 2006 is the main legal instrument used in St. Lucia to assure the health and wellbeing of the public from communicable diseases and other threats to public health. It covers aspects such as vector borne diseases, vaccine preventable diseases, environmental and food related conditions and diseases. The Act also authorizes the inspection of premises, issuance of licenses and the prescription of standards for drinking water, waste water and sewage disposal etc. The Minister with responsibility for health authorizes a Public Health Board as the administrators of the Act. This board is chaired by the Chief Medical Officer. Though emergencies are not explicitly mentioned in the Act, it does provide a framework for leadership and action by the Ministry of Health in the event of public health related emergencies.

The activities proposed by the OECS project are not new to the Government of Saint Lucia. The Ministry of Health through its Environmental Health Department carries out routine vector control measures within communities throughout the year. Recently, under the SMART health care facilities fifteen of our thirty four health facilities have been retrofitted to improve resilience to disasters. Similarly, with this project, minor works will be undertaken and such, as is customary, the Ministry of Health will maintain stakeholder consultations throughout the project in the communities affected.

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1.0 INTRODUCTION

1.1 Project Description

The Government of Saint Lucia with the assistance of the WBG is developing the OECS Project to assist with the rehabilitation and resilence activities currently underway within the health sector through its Ministry of Health and Wellness (MOHW).

The development objective is to strengthen health systems for disaster and pandemic preparedness in select OECS countries. The proposed Project will have three components as described below.

Component 1: Health Facilities and Laboratory Networks

This component seeks to strengthen infrastructure of selected health facilities to improve their disaster vulnerability through civil works and equipment. The lab infrastructure strengthening seeks to upgrade laboratory facilities and capacity at the field- and national-levels based on identified gaps for priority infectious diseases. Laboratory data management systems will be improved for interoperability with surveillance information systems at national and regional levels. This also includes a capacity building to provide training to ensure sufficient human resource capacity for managing essential laboratory functions at field and national levels as we continue to work towards achieving accreditation standards.

Component 2: Public Health Preparedness and Response

This component consists of activities geared towards strengthening information and surveillance systems for early detection and collection of incidence and prevalence data to inform planning interventions. It will also include the harmonization of technical procedures on disease surveillance and information sharing with regard to infectious disease protocols, including specific guidelines for microcephaly testing and confirmation in pregnant women suspected to be Zika infected. This activity will also seek to develop regional information and communications technology platform for surveillance and management, including Geographic Information Systems for community mapping for diseases and disaster vulnerability.

Component 3: Institutional Capacity Building, Project Management and Coordination.

This Component supports project implementation efforts, including project management, fiduciary tasks and monitoring and evaluation (M&E). This component would involve monitoring and evaluation and project management costs associated with supervision of the Project.

The institutional arrangements for managing the social and environmental safeguards are described in section 2.3.

1.2 Purpose and Scope of ESMF

Objective of the Environmental and Social Management Framework.

The objective of the ESMF is to guide the project in environmental and social matters, since because at this stage of the project's preparation, the specific locations, scale and environmental and social characteristic of the sub-projects to be financed by the project are unknown. This will involve identifying the risks associated with different project interventions and defining the mitigation and management procedures and measures that will need to be implemented during the implementation phase of the OECS. More specifically the ESMF will:

- Describe the initial state of the country with emphasis on the state of the physical and biological environment and social characteristics;
- Identify the major environmental and social issues in the municipalities implementing the project;
- Identify the strengths and weaknesses of the institutional and legal environment framework among the main project implementation actors;
- Identify environmental and social risks and propose concrete risk management measures and impacts associated with the various project interventions; and
- Develop a Framework Plan for Environmental and Social Management with all the institutional arrangements for implementation with a budget.

The ESMF includes an environmental and social screening process that will allow project implementing institutions to identify, assess and mitigate the potential environmental and social impacts of project activities at the planning stage. The ESMF will consider the requirements of the World Bank's safeguard policies while abiding by the Saint Lucian environmental and social management laws and regulations. The ESMF also determines the institutional arrangements and responsibilities to be taken during the implementation of the project, including those related to capacity building, as well as follow-up activities. However, as this document is an ESMF, it is anticipated that some of the sub-projects may require the preparation of an ESIA or an ESMP during implementation.

2.0 LEGAL AND REGULATORY FRAMEWORK

2.1National Regulatory Framework

Current legislation of most relevance to the present project and how they are aligned to the WB's standards are summarized below.

Table 1: Legislation and Regulation

Area	Sections of County laws and policies relevant to this project	Corresponding WB policy and standard
EIA Scope	Physical Planning and Development Act 2005	OP. 4.01 and annexes
Public health law	Public Health Act 2006	
Cultural heritage protection and procedures during construction	Saint Lucia National Trust Act 1975	OP. 4.11 Cultural Heritage
Medical Waste Management and disposal	1, Public Health Act 2006 2. Solid Waste Management Authority Act 2004	OP 4.01 and annexes
Solid and liquid waste management	Solid Waste Management Authority Act 2004	OP 4.01 and annexes
Occupational health and safety	Employees (Occupational Health and Safety) Act 1985	OP 4.01 and annexes
Land acquisition	Land Acquisition Act 2008	OP 4.12 Involuntary Resettlement
Building code and standards	OECS Building Code and Guidelines	OP 4.01 and annexes
Zoning regulation	1. Physical Planning and Development Act 2001 2. Land Conservation and Improvement Act 1992	OP 4.01 and annexes
Grievance redress Mechanism/ complaint handling	Labour Code of 2006	OP 4.01 and annexes
Disclosure of documents	Freedom of Information Act 2009	OP 4.01 and annexes
Public consultation for social and Environmental Impact Assessments	Physical Planning and Development Act 2005	OP 4.01 and annexes

2.2 Environmental and Social Management Capacities

Ministry of Health and Wellness

The MOHW, through its Environmental Health Department (EHD), it has the responsibility for reviewing plans, monitoring and enforcing public health and sanitation regulations and practices, and promoting public awareness on matters relating to public health and the environment. These include practices that affect health such as food preparation, sanitation, solid waste management, liquid and solid waste disposal, dust and air pollution, water quality, some occupational health and safety matters.

The EHD bears the major responsibility for the organization of resources and services for health of the nation. The Ministry is organized into sub-divisions, which are responsible for various health programs including preventive services, health education and promotion, environmental health, hospital and curative services. Private sector health services in Saint Lucia comprise medical, dental, pharmacy and laboratory. Private sector services are concentrated in the capital city of Castries and its suburbs in the north. Health services in Saint Lucia are provided from 33 health centres, 2 district hospitals, 1 polyclinic, 2 general hospitals, 1 mental hospital, 1 drug rehabilitation facility, 1 private hospital, approximately 70 private offices, approximately 15 private pharmacies, three private laboratories, and two private radiology facilities.

Primary curative and preventive care in the public sector is provided by a network of thirty-two health centres, two district hospitals and a polyclinic. These facilities are widely dispersed throughout the island in nine defined health regions. Geographic access to services is good. In addition to routine medical clinics, the health centres and district hospitals offer special services in obstetrics/gynaecology, paediatrics, surgery, sexually transmitted diseases, dermatology, pharmacy, nutrition counselling, environmental and health education services and mental health. Special clinics and services are also offered for diabetes, hypertension, family planning and maternal and child health (MCH) and a focus on men's health. Casualty and emergency episodes are mostly handled within the accident and emergency departments within the general hospitals.

The EHD within the MOHW is responsible for monitoring and regulating environmental health conditions, including programme areas of vector control, food safety, water and wastewater, industrial hygiene and air pollution. The Environmental Health Unit carries out inspection of food handling premises as part of the public health programme. This Unit also facilitates the issuance of health permits to food handlers and deals with public complaints as it relates to waste, water and other environmental health aspects. The MOW is represented on the Solid Waste Management Authority Board, the Development Control Authority and the National Emergency Management Advisory Committee (NEMAC) and collaborates with the DOF in some coastal water quality monitoring. The Epidemiology Department collects statistics and maintains a database on the incidence of various diseases.

The Corporate Planning Unit of the MOHW manages capital projects and plant (structure and equipment) maintenance. The Unit is charged with the responsibility of analysing and utilising

data to inform project and programme conceptualisation, health policy development and implementation, and other health related interventions for the health sector.

The Department has on staff an Engineer who reviews plans, inspects work locations, and ensures that all projects are implemented in accordance with the building code and other health related spatial standards which may exist. The Department has also recruited a Quality Assurance Manager within the last two years to standardise service delivery through standard/ guideline development and licensure. The Department also has a Biomedical Engineer on staff whose main duties include procurement of appropriate technologies and standardisation of medical equipment and devices within the sector.

Ministry of Physical Development, Housing, and Urban Renewal

This Ministry has responsibility through the functions of its various departments/ sections which impact directly on the management of the country's natural resources. The Physical Planning section is the technical arm of the Development Control Authority (DCA). The Ministry is also responsible for the implementation of the Saint Lucia Building Codes and guidelines which are supposed to provide guides for best construction practices.

Caribbean Public Health Agency

The Caribbean Public Health Agency (CARPHA) is a regional CARICOM institution and the lead agency in matters related to public health including water quality and water pollution prevention and management. It has been involved in testing for and quantifying various inputs into the coastal waters of the island and establishing monitoring and controls especially as part of water quality monitoring programmes. It collaborates with the Department of Health performing testing and analysis for that Department as well as other ministries, agencies, and the private sector who may wish to employ its technical services. This organization has a well-equipped laboratory to assist its functions. The Department of Health relies on the Caribbean Public Health Agency (CARPHA) to perform many of its analytical functions. CARPHA also provides technical assistance and support to water resource management initiatives.

Saint Lucia National Trust

This statutory body has responsibility for the conservation and management of buildings and objects of historical and architectural value as well as areas of natural and scientific importance. The Trust is responsible for protecting and promoting the patrimony of the country. It manages the Pigeon Island National Landmark, the Praslin Protected Landscape, and the Maria Island and Frigate Island Nature reserves.

A related entity is the Archaeological and Historical Society, which is an NGO founded in 1954. It is custodian of many of Saint Lucia's archaeological and historical collections and is supposed to serve as a "Preserver of Records". The area of preservation of historical buildings and sites has remained a grey one between the Society and the Trust, and this has caused some conflict at times. The Society also promotes itself as the custodian of underwater archaeological sites as well.

Saint Lucia Solid Waste Management Authority

This statutory authority has the responsibility for providing a coordinated and integrated systematic approach to collection, treatment, disposal, and recycling of wastes including hazardous wastes. The Authority is also responsible for the management of two sanitary disposal sites, one in the north at Deglos, and the other in the south in Vieux Fort. The agency has also developed guidelines for medical waste management.[1]

Ministry of Public Service, Sustainable Development, Energy, Science and Technology

The Ministry of Public Service, Sustainable Development, Energy, Science and Technology is the government body responsible for the following-up of the international commitments signed by Saint Lucia related with environmental issues, including the Climate Change Convention (UNFCC). The Sustainable Development, Energy, Science and Technology Section oversee all matters relating to sustainable development within the country and ensure that the various protocols are adhered to. It is the lead environmental agency in the country and spearheads the National Environmental Policy (NEP), National Environmental Management Strategy (NEMS), the National Climate Change Committee (NCCC), and other initiatives related to biodiversity, marine and terrestrial pollution, energy efficiency, sustainable development and environment.

National Emergency Management Office (NEMO)

The role of the National Emergency Management Organisation [NEMO] is to develop, test and implement adequate measures to protect the population of Saint Lucia from the physical, social, environmental and economic effects of both natural and man- made disasters such as hurricanes, landslides, oil spills, and fires. Its responsibility is to ensure the efficient functioning of preparedness, prevention, mitigation and response actions. NEMO is responsible for preparing and managing the National Emergency Management Plan. NEMO is the chair of the National emergency Management Advisory Committee which convenes whenever there is a national emergency.

[1] http://sluswma.org/how-to-manage-medical-waste/

Labour Relations Department

This Department of the Ministry of Education, Innovation, Gender Relations and Sustainable Development is responsible for standards of occupational health and safety in places of employment and largely focuses on workers safety in the work place and employer/employee relations, grievances, and other aspects of the Labour Act.

2.3 World Bank Safeguard Policies

The World Bank projects and activities are governed by Operational Policies (OP)which are designed to ensure that development projects are economically, financially, socially and environmentally sound[2]and sustainable, and thus improve decision-making. There are ten safeguard policies, including Environmental Assessment (OP/BP 4.01); Natural Habitats (OP/BP 4.04); Pest Management (OP/BP 4.09); Indigenous People (OP/BP 4.10); Physical Cultural Resources (OP/BP 4.11);Involuntary Resettlement (OP/BP 4.12); Forests (OP/BP 4.36); Dam Safety (OP/BP 4.37); International Waterways (OP/BP 7.50) and Projects in Disputed Areas (OP/BP 7.60).

The Environmental Assessment (OP/BP 4.01), as the umbrella policy for the Bank's environmental safeguard policies, is used to identify, avoid, and mitigate the potential negative environmental impacts associated with Bank lending operations.

Under OP4.01 the Bank will undertake environmental screening of each proposed project to determine the appropriate extent and type of environmental assessment required. Proposed projects are classified into one of four categories, depending on the type, location, sensitivity, and scale of the project and the nature and magnitude of its potential environmental impacts. The categories of potential environmental impacts are classified as A, B, C and FI, this project is classified as Category B, sumarized in the box below, meaning that environmental impacts for the type of work anticipated under the project are expected to be moderate to minimal in nature and can be readily managed through the application of appropriate and well established engineering and management measures.

Table 2: World Bank project categories

Category	Description

[2]Source: http://www.worldbank.org/opmanual

Category A	Category A project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. The EA for Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" scenario), and recommends any measures needed to prevent, minimise, mitigate, or compensate for adverse impacts and improve environmental performance. For Category A project, a borrower is responsible for preparing an Environmental Impact Assessment (or a suitably comprehensive regional or sectorial EA).
Category B	Category B project has potential adverse environmental impacts on human populations or environmentally important areas, including wetlands, forests, grasslands, and other natural habitats - which are less adverse than those of Category A projects. These impacts are site specific; few if any of them are irreversible; and in most cases mitigation measures can be designed more readily than for Category A projects.
Category C	Category C project is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required.
Category FI	Category F or FI project involves investment of Bank funds through a financial intermediary, in subprojects that may result in adverse environmental impacts.

The World Bank Safeguard Policy OP4.01 requires that an Environmental and Social Management Framework (ESMF) be prepared along with an Environmental and Social Management Plan (ESMP) to guide the project's screening of project risks and its implementation of recommendations to reduce those risks. This program-level ESMF includes guidance during project execution for screening possible sub-projects (i.e., individual civil works or other project-related activities) and identify complex projects which would require additional studies to comply with safeguards policies. All future subprojects which are as yet not identified in detail are included within this single ESMF document, and will be incorporated into the Project Operations Manual to serve as a guide for environmental management of future subprojects or activities once they are defined in sufficient detail for execution. The ESMF as a public document, serves to inform stakeholders and guide environmental management of activities to be implemented.

Below are briefly describes the other safeguard policies not triggered by the project's activities, across the four participating countries, but whose provisions can still be used to guide MOHW in the screening of sub-projects.

- **Natural Habitats (OP/BP 4.04)** strictly limits the circumstances under which any Bank-supported project can affect or alter natural habitats (land and water areas where most of the native plant and animal species are still present) as well as parks, natural areas, or other declared protected areas. Projects must avoid, minimize, restore, or offset any activities that cause degradation of natural habitat. Projects that would cause significant conversion or degradation of critical natural habitat (legally protected areas, or those with high conservation value) are not eligible for funding.

- **Physical Cultural Resources (OP/BP 4.11)** seeks to avoid, or mitigate, adverse impacts on cultural resources (movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance) from development projects that the World Bank finances. In addition, as a standard practice, a chance-find procedure is required for all projects with earth-moving activities (excavation, trenching, grading, or ploughing) to stop work and notify authorities to prevent damage or destruction of these resources if encountered.

- **Indigenous Peoples (OP 4.10)** The Bank provides project financing only where free, prior, and informed consultation results in broad community support for the project by Indigenous Peoples who are affected by the project. Such Bank-financed projects include measures to (a) avoid potentially adverse effects on the Indigenous Peoples' communities; or (b) when avoidance is not feasible, minimize, mitigate, or compensate for such effects. Furthermore, Bank-financed projects must be designed to ensure that the Indigenous Peoples receive social and economic benefits that are culturally appropriate and gender and intergenerationally inclusive.

- **Involuntary Resettlement (OP 4.12)** For the purposes of this policy, "involuntary" means actions that may be taken without the displaced person's informed consent or power of choice. The Bank's policy requires that projects avoid, minimize, or otherwise mitigate land acquisition and associated adverse impacts. Where resettlement is deemed unavoidable, the project must assist all affected people to improve, or at least restore, incomes and living standards

- **Forests (OP/BP 4.36)** Operational Policy (OP) 4.36 applies to all World Bank investment operations that potentially have an impact on forests, regardless of whether they are specific forest sector investments. It also addresses cross-sectoral impacts on forests. The policy provides for conservation of critical natural habitats and prohibits World Bank financing of any commercial harvesting or plantation development in critical natural

habitats. It also allows for proactive investment support to improve forest management outside critical forest areas, with explicit safeguards to ensure that such World Bank–financed operations comply with independent certification standards acceptable to the World Bank, or operations with an agreed upon, time-bound action plan to establish compliance with these standards.

The objective of OP 4.36 is to assist clients to harness the potential of forests to reduce poverty in a sustainable manner, to effectively integrate forests into sustainable economic development, and to protect the vital local and global environmental services and values of forests. Where forest restoration and plantation development are necessary to meet these objectives, the World Bank assists clients with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality.

The PIU must screen all potential facility sites for potential risks using the screening forms (Appendix 1) in this document. Because this project is a category B, project activities that could be categorized as level A will be screened out.

3.0 DESCRIPTION OF EXISTING ENVIRONMENT

3.1 General Context

Saint Lucia is a small island developing state (SIDS) located at 13°53'0"N, 60°58'0"W between Saint Vincent and the Grenadines to the south and Martinique to the north in the Caribbean Sea bordering the Atlantic Ocean (refer to Figure 1). The island is approximately 616.4km^2 [238 square miles] in area with approximately 169,000 inhabitants[3]. The island exhibits an undulating mountainous terrain with a forested interior and is subject to a tropical climate. The major communities are located along the coast with the population concentrated in the northwest of the island at Castries and Gros Islet.

[3] 2012 Mid year population estimate from 2012 fact sheet from the Central Statistics Office, Castries, St.Lucia

Figure 1. Map of Saint Lucia

3.4 Climate and Geography

Saint Lucia is part of the wider Antillean Arc of islands that are geologically young, not more than 50 million years old and predominantly volcanic in origin. While the active tectonic processes appear to have ceased in the region, there is still some minor activity as evidenced by the dormant volcano in Soufriere with some near-surface hydrothermal hot spots.

Saint Lucia is almost entirely volcanic with the oldest rocks, largely of rhyolite, andesite and various basalts, dating from the early Tertiary period. The rock formations have been grouped into three wide island classes – northern series (early Tertiary [Eocene]), central series (middle Tertiary [Miocene/Pliocene]), and southwestern series (Holocene [mid to late Pleistocene]) series[4].

Annual rainfall in Saint Lucia ranges from 250 inches in the wet central mountainous interior to 60 inches in the dry coastal locations. This is largely due to the orographic effect as a result of

[4] Organization of American States, Saint Lucia Development Atlas. Department of Regional Development, OAS General Secretariat, Washington D.C. USA. 1987

the general topography of the island with a high central mountain range and lower coastal areas. Saint Lucia has two seasons; a dry season which starts from December and usually ends in May, and a wet season which is from June to November. It is during the wet season that Saint Lucia is very vulnerable to hurricanes and other tropical storm occurrences as this is known as the hurricane season. The rainy season, during which the island receives ~70% of total annual rainfall, coincides with the period of highest tropical storm activity in the region.

There is also considerable inter-annual variability in the rainfall record. 1997 was among the driest years on recent record (~160 cm), but was followed by one of the wettest years, 1998, (~295 cm). There is evidence that some of the variability is driven by global climatic fluctuations such as the El Niño-Southern Oscillation (ENSO) or by large scale gradients in tropical Atlantic and Pacific sea surface temperatures.

Mean temperatures vary by 2^{o}C throughout the year and peak between May and October. Maximum temperatures can reach a high of 31^{o}C during these months, and minimum temperatures a low of around 23^{o}C in February. Highest temperatures on record were seen in 1998, which is consistent with global estimates. Both the maximum and minimum temperature records show a warming trend over the past 22 years. The warming is consistent with the rest of the Caribbean (Peterson et al. 2002) and the rest of the world (Alexander et al. 2006). Also, like the global averages, maximum temperatures for Saint Lucia are increasing at a slightly faster rate (0.2^{o}C/decade) than minimum temperatures (0.15^{o}C/decade).

Relative humidity across the country tends to be generally high year round (above 70%) and predictably highest during the main rainfall period. Winds are generally E to ESE, and wind speed is strongest (>9 metres per second) through the dry period to the beginning of the rainy period (December-June). During this period the north Atlantic high is a persistent and dominant influence on the region. Notwithstanding, strong wind gusts are also common from June to November during the passage of tropical waves, depressions, storms or hurricanes.

3.5 Socio-economic and Human Settlement

Socio economic data

Saint Lucia is an upper-middle income country which has been challenged by relatively low levels of economic growth and high unemployment in recent years. The country has a population of 169,000 nearly 30 percent of which reside in Castries, where the capital (also called Castries) is located. The country ranks high on the United Nations Development Programme's (UNDP) Human Development Index (HDI).[5] Gross National Income (GNI) per capita is US$7,350, life

[5] The Human Development Index is a summary measure of average achievements of countries in three key measures of human development: a long and healthy life, knowledge, and achievement of a decent standard of living (UNDP, 2016).

expectancy at birth is 75 years, and the Under-Five Mortality Rate is 14 per 1,000 live births. The country is politically stable, and held national elections in 2016 where a peaceful transition in political power was seen.

The island nation has been able to attract foreign business and investment, especially in its offshore banking and tourism industries. Tourism is Saint Lucia's main source of jobs and income - accounting for 65% of GDP - and the island's main source of foreign exchange earnings. The manufacturing sector is the most diverse in the Eastern Caribbean area. Crops such as bananas, mangos, and avocados continue to be grown for export, but Saint Lucia's once solid banana industry has been devastated by strong competition.

Notwithstanding the above, Saint Lucia economy expanded by 2.5% in 2017[6], with growth taking place in the tourism (29.6%), construction (10.8%), manufacturing (3%) sectors. However, negative spillovers associated with the impact of tropical storm Matthew in late 2016 and lower banana exports contributed to a contraction in the agricultural sector by 6.3% following a recorded growth of 4.1% in 2016[7]. As a result of those expansions in the various sectors, a slight decrease in the unemployment rate which averaged 20.2 %t in 2017 compared to 21.3 % in 2016[8] was recorded. The revenue earning capacity impacts on the capacity of the country to fund and sustain activities in the social sectors including health. Economic and financial problems coupled with increasing natural disasters creates challenges for Saint Lucia as it struggles to retain the policy decision to improve access while maintaining fairness, inclusion, cost effectiveness and quality.

Human settlement patterns and colonial history

Historical settlement patterns have followed along flat coastal areas near major rivers such as Castries. The population of Saint Lucia is concentrated in the north of the island, particularly the northwestern and northeastern part which includes Castries, Gros Islet, and Babonneau. This area contains what is referred to as the Northwest Urban Corridor. As the population has increased, the settlement pattern has slowly creeped up from the low-lying urban areas into the surrounding hillsides creating expanding suburban settlements. Many of these settlements are unplanned. This urban sprawl is largely the result of rural urban migration. Lower income households generally reside in some of these areas on the hillsides and coupled with inadequate drainage and unplanned sewage systems and services, find themselves vulnerable to landslides and exposures to hurricanes. Compounding the situation is the fact that these settlements are often devoid of basic sanitation services such as running water and proper sewage disposal facilities, which

[6] Saint Lucia Economic and Social Review 2017

[7] Saint Lucia Economic and Social Review 2017

[8] Saint Lucia Economic and Social Review 2017

predisposes the residents to water borne diseases such as diarrhea which affect especially children. Given the nature of tenure and lack of resources, residents have little or no vested interest in managing the lands and lack the capacity to make any investments that may reduce risk exposure.

3.6 Biological Resources

Saint Lucia's rugged terrain has resulted in a variety of vegetative types. The range of natural life zones occurring in Saint Lucia displays heterogeneity and a rich diversity of ecosystems, which are typical of the tropics. Saint Lucia possesses a high degree of diversity not only in the ecosystems and habitats found on the island, but also in the variety of biological resources present, some of which are endemic to the country. In a 2009 survey, Saint Lucia registered 9 endemic 'higher plants', 6 endemic birds (11 sub-species); 7 endemic reptiles (5 sub-species); 1endemic amphibian; 1 endemic mammal (1 sub-species) and more than 200 endemic beetles.

For purposes of this ESMF, four main ecosystem types can be considered: Forest and Terrestrial Wildlands, Coastal and Marine, Inland Fresh Waters, and Agro- Ecosystems.

- An estimated 15% of the island's landmass is under forest cover. Between 1990 and 2000 it is estimated that the island lost 36% of its forest cover as a result of clearing of natural vegetation for agriculture, construction and other development purposes. The forest reserves are regarded as exceptionally preserved in the country with mainly rainforest ecosystems. Five main types of forest ecosystems have been described: Rainforest: dominant vegetation of the mountain slopes; Lower montane rain forest: in higher elevations, plant composition and structure of the forest change, with lower canopy; Elfin woodland; or cloud forest occurs on highest peaks; xerophytic forest - natural dry forest, typically in the coastal region; primarily secondary woodland consisting of regenerating forest interspersed with cultivation; Dry scrub woodland; driest portions of the island.

- The coastal and marine areas also contain a diversity of ecosystems including mangroves, coral reefs, sea grass beds and beaches. St Lucia's coastal zone is characterised by mangroves, seagrass beds, coral reefs and beaches, which not only play an increasingly important role in tourism but also are an integral component in natural coastal defense and ecology of the island. Among the mangrove species found on the coast are the red mangrove (*Rhizophora mangle*), white mangrove (*Laguncullariaracemosa*), black mangrove (*Avicenniagerminans*), and buttonwood (*Conocarpuserecta*). The Department of Fisheries (DOF) has declared most of the mangroves marine reserves. The seagrass beds offshore include turtle grass (*Thalassiatestudinum*) and manatee grass (*Syringodiumfiliforme*). In general, larger and denser seagrass beds are found off the East

Coast compared to the infrequent and sparsely covered seagrass patches along the West Coast.

- Thirty-seven watersheds have been delineated in Saint Lucia, all radiating from the central mountain ranges of the interior towards the coast, with the upper reaches of many of these drainage basins located within high rainfall zones. Fresh water ecosystems provide habitats for many species including fishes, molluscs, amphibians, reptiles, insects, plants and mammals. Species richness in relation to area of habitat is extremely high in many freshwater groups. Studies indicate the occurrence of 14 fresh water fish species, nine (9) of which are native to Saint Lucia. The freshwater and mangrove wetlands of Saint Lucia are relatively small but are representative of most wetland ecosystems.

- A wide variety of vegetables, fruit trees and other crops are grown on the island. Banana cultivation is still considered the largest agricultural production activity. There are approximately 24 varieties of *Musa* species, most now held in germplasm. Other germplasm conservation at the 4 agricultural stations on the island is largely focused on horticultural and fruit crops such as guava, wax apple, mango, citrus varieties, sugar apple, orchids, cocoa, cashew, coconut, musseanda, ixora, palms, cherry, ginger lilies, pawpaw (resistant to *Erwinia*)). Agro-ecosystems also comprise a number of useful species, including herbs and medicinal plants.

The biological resources of Saint Lucia provide the foundation for tourism activities, as well as the ecosystem services such as clean water, runoff control, and protection from storm surges and river flooding.

3.7 Geo-hazards

The country is vulnerable to a number of natural hazards such as hurricanes, earthquakes, volcanic activity, drought, tsunamis, flooding, and landslides. The effects of these phenomena can be exacerbated by the activities of population such as deforestation, indiscriminate garbage disposal, poor building practices, and unplanned settlements in environmentally sensitive areas.

With the increased frequency of more intense weather events as a result of climate change, the possibility for disasters to occur increases placing increased strain on the limited national technical and financial resources and the country's ability to respond. Costal zones are also vulnerable to storm surge during hurricanes, and erosion from wave energy. Central Castries and the villages of Anse-La-Raye and Canaries along the west coast, as well as in Bexon, Dennery and Micoud on the east coast, and further south in the towns of Vieux Fort and Soufriere. Storm surge from hurricanes is pronounced on the southwest coast, where up to 5 meters of sea level

rise during hurricanes could occur. Elsewhere, up to 2 meters would be expected during hurricanes. The eastern side of Saint Lucia is exposed to long-fetch waves across thousands of miles of open Atlantic Ocean, and consequently has a number of erosion hot spots vulnerable to wave energy. Tsunamis also pose a hazard in the Eastern Caribbean and can be caused by earthquakes, and by eruptions of volcanoes particularly those lying on the seafloor such as Kick-em Jenny near Grenada, which could result in a 2-meter tsunami arriving at Saint Lucia within 15 minutes of eruption (Gibbs, 2001).

3.8 Physical Cultural Resources

The rich culture and history of Saint Lucia has created physical cultural resources, which are features or objects of interest and value to nation's people because of their archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. These may include artefacts, objects, sites, structures, groups of structures, and natural features and landscapes, and may be in urban or rural settings, above or below ground, or under water. Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices.

Recognition of physical cultural resources may be at the local, national level, or within the international community. Examples may include Saint Lucia's natural treasures such the Botanic Gardens, masonry works, historical buildings, or other features of community importance or international renown. Prehistoric rock art at Balenbouche, structures of cultural interest such as the Vigie Lighthouse, and historic building facades in Castries are all examples of physical cultural resources in Saint Lucia.

The Pitons located in the south of the Island is a term used to refer to two mountainous volcanic plugs. In 2003, the pitons were declared World Heritage Sites by UNESCO listed under the Natural Sites category. The two mountains are named the Gros Pitons (measuring at 771 meters) and Petit Pitons (measuring at 743 meters). These two mountains are linked together by the Piton Mitan ridge. The entire 2,909 hectare area surrounding these two mountains is covered into the listing for UNESCO World Heritage Sites in St. Lucia.

Aside from the mountainous region, the marine area is also recognized for its marine biodiversity. The coral reefs makeup for about 60% of the entire marine area. There is also a tropical moist forest around it, which is home to 148 plant species and 27 bird species.

4.0 ENVIRONMENTAL AND SOCIAL ASPECTS

The regional project has been rated category B of Operational Policy (OP/BP) 4:01 (Environmental Assessment). One safeguard policy is applicable: OP/BP 4.01.

The appraisal under category B of Operational Policy 4:01 (Environmental Assessment) entails that potential environmental and social impacts would have moderate significance in the environs, and there is need for environmental and social management plans (ESMPs) to address the impacts/risks during the implementation phase. The project activities for which some negative impacts may arise are those of components 1 and 2. The impacts can be broadly categorized into two main groups: (1) impacts arising during construction/civil works and ancillary activities and (2) impacts arising during the operational phase. The main sources of impacts during the construction phase would be from proposed expansion, minor civil works, rehabilitation works of the facilities and new construction activities. During the construction phase, construction workers could be exposed to occupational health and safety risks including fall from height, exposure to hazardous chemicals, accidents, hearing loss, sexually transmitted diseases (STDs) and other risks normally associated with construction activities. For the operational phase, the main source of impacts would be from the generation of healthcare wastes.

4.1 Potential Positive Impacts

There are many benefits expected to accrue to the countries involved and their populations, as follows: The project design is expected to foster improved regional coordination efforts, harness cost efficiency gains, and reinforce ongoing regional and national health sector dialogue. Harmonization of policies and procedures for preparedness across the OECS region such as streamlined handling of laboratory specimen transport capacity and a coordination mechanism for emergency health services will help strengthen response mechanisms to public health emergencies.

The project design also builds on the commitments reflected in the Caribbean Region Global Health Security Agenda Five Year Roadmap (2017-2021). The project will support efforts to strengthen capacity of the health workforce in the OECS region to better manage disease outbreaks and develop harmonized policy regulation to facilitate smoother coordination and timely action. As a global convener, the Bank will contribute to strengthening existing knowledge-sharing and coordination platforms across the region for continued capacity building to effectively respond to public health emergencies.

The proposed project also leverages the Bank's substantial experience in responding to the Ebola outbreak and its aftermath in West Africa, where the Bank is using its expertise to support countries in their efforts to strengthen preparedness and response to public health threats in those countries. The proposed project design also builds on lessons from the Bank's experience with regional approaches to strengthening health systems: ranging from the Ebola outbreaks in West

Africa, strengthening public health laboratory networks across east Africa, and improving the capacity to manage the burden of tuberculosis in southern Africa.

Furthermore, the global public good nature of key investments is clear, such as a robust disease surveillance system, as it is both non-rival and non-exclusive. Within the context of pandemics, a 2016 IEG assessment of World Bank support to pandemic preparedness outlines that priority should be placed on the control and prevention of cross border spread of communicable disease and sharing of resources to enhance efficiency such as pooled procurement of key commodities and health workforce development which could result in financial savings due to economies of scale.

In addition, costly high-level resources such as reference laboratories are expected to efficiently serve the needs of more than one country. Delays between the onset of the epidemic and the implementation of control measures are costly. Too often, detection, diagnosis, and control of disease outbreaks are attempted only with delay and when contagion grows exponentially, the cost of controlling the epidemic outbreaks rise in tandem. In addition, the activities will build on the PAHO Smart Hospitals Assessments that identified facilities that require renovations in order to improve their disaster resilience. Better vector-borne disease control system is another outcome expected in Saint Lucia from the OECS Regional Health project.

4.2 Potential Negative Impacts

Notwithstanding the numerous positive benefits expected to accrue to the many communities across the region, there is also a risk of negative impacts in the social and environmental areas if certain activities are not appropriately managed. The below mentioned activities would generate negative impacts particularly, under component (1) one which is the establishing of a public health laboratory.

Refurbishments at selected health facilities presents occupational health and safety risks typical associated with small civil works such as those arising from not using safety equipment, or workers not properly managing heavy equipment.

Upgrading of facilities should also include adequate treatment of wastewater. Diesel generators may also be used for emergency power back-up, requiring adequate ventilation, fuel storage, and safety measures. During operations, these systems must be maintained adequately to minimize potential releases to the environment.

Refurbishments can also impact the neighboring areas through increased traffic, dust and noise, storm water runoff from disturbed areas or concrete mixing areas, inadequate debris disposal, and poor sanitary facilities on the work site.

Unexpected risks from small civil works include destruction of historical artefacts during earth-moving activities, damage to historical buildings or facades, or other impacts to physical cultural resources.

Refurbishments at selected health facilities could create sources of medical waste, equipment or supplies needing proper management and disposal.

Construction waste will need to be disposed of properly as will any hazardous material such as asbestos, mercury, chemicals which may also be discovered during demolition, repairs, or refurbishment.

During operation of the health care facilities, there may be increased use and scope of services, resulting in additional sources of medical waste needing proper treatment and disposal.

The health and safety of health care workers could be affected by waste management practices as well as by hygiene conditions, isolation and storage procedures for bio-infectious, radiologic or genotoxic waste.

If new lands must be acquired, informal settlers removed from government (Crown) lands, then social impacts could include loss of crops or livelihood, or involuntary physical displacement of persons.

The potential negative impacts can be grouped into two categories: Construction Phase - those are associated with typical small civil works, and Operation Phase - those are associated with medical waste. Each is discussed in more detail in the following two sections.

The potential negative impacts can be grouped into two categories: those associated with typical civil works, and those associated with medical waste. Each is discussed in more detail in the following two sections.

4.2.1Potential Negative Impacts associated with Civil Works

There is the possibility of the occurrence of typical works-related negative impacts associated with the small civil works (refurbishment of selected health facilities) for the Project. Each of the impacts is described in more detail below.

- **Increased traffic can generate conflict**. There is always the possibility of increased traffic for civil works of certain sizes especially when the works are occurring adjacent to a main highway or any busy road. The potential for vehicular/vehicular and pedestrian/ vehicular conflict increases as the scale of works increases if proper traffic management procedures are not implemented. This can lead to negative response from the nearby residents or the community affected. The matter of safety also becomes a great concern in relation to the speed of the vehicles as well as the alertness of the drivers as they traverse the highways and through communities especially if there are children within the vicinity who may be accustomed to playing on the roads or sidewalk areas. The breakdown of a large project vehicle causing the blockage of a well-travelled route can escalate tensions within a community especially if it contributes to loss of travel time to work, school, or returning home. This may be the case at many of the health facilities selected for refurbishment.

- **Increased noise levels** from activities adjacent to or within communities and residential areas, can be deemed as an unnecessary and unwanted nuisance affecting local business and day to day activities. Care must be taken in the judicious usage of any form of heavy noise and vibration equipment. Associated vibrations from the use of heavy equipment such as rollers can negatively impact surrounding communities, causing nuisances by shaking household items and possibly affecting the stability of nearby structures.

- **Poor Solid and Liquid Waste Management** can be detrimental to both the terrestrial and to the nearby marine environment. The mishandling of chemicals, detergents, greases, oils, building materials, can lead to the poisoning of the terrestrial and marine environment. The management of human wastes on site is very critical to ensuring a healthy working environment and reduce the risk of faecal contamination. Managing excavated soil is also important especially when there is potential for stormwater runoff into drains, rivers, and coastlines. In addition, care is needed when soil is being transported to another site for use or storage. Care must be taken to ensure the appropriateness of the transport and the protocols for transporting and storing the soil, using BMPs for erosion control and safe transport.

- **Hazardous Materials.** At times hazardous materials may be discovered, especially when older buildings are being refurbished. Such materials may include asbestos in ceiling

tiles or roof panels, medical waste in storage areas or debris piles, paints or solvents in maintenance areas, or fuels such as diesel tanks or contaminated soils. Improper handling or disposal of these materials can lead to impacts to health of workers or the community, or pollution of watercourses and nearby lands.

- **Air pollution** can come from several sources. Vehicles and machinery can produce noxious fumes such as carbon monoxide, diesel fumes, as well as burnt oil fumes which can be a nuisance to nearby facilities or communities. The mishandling of particularly noxious chemicals such as solvents or chemical washes, greases, as well as the burning of solid wastes on the work site, especially chemical containers, can lead to air pollution resulting in negative health impacts.

- **Terrestrial and Marine Pollution.** The potential for terrestrial and marine pollution can occur with indiscriminate disposal of both solid and liquid wastes. The mishandling of chemicals and especially waste oils can poison the landscape. Improper disposal of human wastes can lead to similar effects. This also applies to pesticides used in termite treatment of new or existing buildings. With the occurrence of civil works projects along or adjacent, or within the coastal waters, there is the possibility of impact on the marine ecosystem which must be evaluated as project details become clear.

- **Soil Erosion and Land Slippage** can occur if land clearing and excavation practices, as well as poor site drainage can lead to exposed soil. Opening of roadways, trenching for installation of water lines, grading or clearing, may all destabilize the soil surface and eventually be the cause for landslides at a later time. Accordingly, if any of these activities become related to the project, careful planning is required to ensure that soil erosion is minimized, and that landslide potential is not exacerbated. Best Management Practices (BMPs) for slope stabilization should be used.

- **Occupational Health and Safety Issues.** Worker safety is critical to any operation, the mishandling of equipment, the improper storage and usage of various chemicals and materials on site, high levels of continuous noise and fumes, as well as inadequate or improperly used safety equipment can cause serious injury and down time to the workers and project and should therefore be avoided. If outside labour is required, proper facilities for housing will be provided for workers.

- **Loss of or Damage to Physical Cultural Resource** may occur during any type of earth works associated with refurbishment or expansion activities, there is the possibility of coming across or “chance finding” what may appear to be an historical or cultural artifact which may need to be studied and preserved by the relevant authorities. In cases like this,

the resource could be lost due to careless activities prior to the relevant authorities determining whether it is worthy of preservation. It is therefore recommended to consult with local stakeholders as to the final design of facility, and the disposition of any potential physical and cultural resources, because the valuation of such items is ultimately subjective and they are of most value to local stakeholders.

4.2.2 Negative Impacts associated with Medical Waste

According to the WHO[9], waste and by-products from the health sector cover a diverse range of materials, as the following list illustrates:

- Infectious waste: waste contaminated with blood and other bodily fluids (e.g. from discarded diagnostic samples), cultures and stocks of infectious agents from laboratory work (e.g. waste from autopsies and infected animals from laboratories), or waste from patients with infections (e.g. swabs, bandages and disposable medical devices);
- Pathological waste: human tissues, organs or fluids, body parts and contaminated animal carcasses;
- Sharps waste: syringes, needles, disposable scalpels and blades, etc.;
- Chemical waste: for example, solvents and reagents used for laboratory preparations, disinfectants, sterilants and heavy metals contained in medical devices (e.g. mercury in broken thermometers) and batteries;
- Pharmaceutical waste: expired, unused and contaminated drugs and vaccines;
- Cyctotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment and their metabolites;
- Radioactive waste: such as products contaminated by radionuclides including radioactive diagnostic material or radiotherapeutic materials; and
- Non-hazardous or general waste: waste that does not pose any particular biological, chemical, radioactive or physical hazard.

Health-care waste contains potentially harmful microorganisms that can infect hospital patients, health workers and the general public. Other potential hazards may include drug-resistant microorganisms which spread from health facilities into the environment. Adverse health outcomes associated with health care waste and by-products also include:

- sharps-inflicted injuries;

[9]http://www.who.int/mediacentre/factsheets/fs253/en/

- toxic exposure to pharmaceutical products, in particular, antibiotics and cytotoxic drugs released into the surrounding environment, and to substances such as mercury or dioxins, during the handling or incineration of health care wastes;
- chemical burns arising in the context of disinfection, sterilization or waste treatment activities;
- air pollution arising as a result of the release of particulate matter during medical waste incineration;
- thermal injuries occurring in conjunction with open burning and the operation of medical waste incinerators; and
- radiation burns.

The Project may increase the use and scope of services at facilities, resulting in additional sources of medical waste needing proper treatment and disposal. This is also the case for work during emergency response or epidemics. The health and safety of health care workers could be affected by waste management practices as well as by hygiene conditions, isolation and storage procedures for bio infectious, radiologic or genotoxic waste. Such risks, if not mitigated, may also affect nearby communities.

5.0 MITIGATION MEASURES

Mitigation measures address the potential impacts of project activities to avoid or reduce any negative impact on the environment or on people. As indicated in the section on impacts, there is the potential for negative impacts associated with small civil works and rehabilitation, and there are potential impacts associated with the generation and management of medical waste.

The careful implementation of mitigation measures will allow for the reduction or avoidance of any adverse impacts. These efforts start in the pre-design phase with the screening of possible sub-projects for consideration, and include efforts during the design, implementation, and operation phases.

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Design Phase: Site selection for laboratory/ incinerator or an existing facility		• There may be anxiety and complaints from those living in or using nearby areas about potential impacts. Current staff using the building and others who share the external space may express their concerns	• Use Site screening tool for the selection of sites. • Select sites that do not cause displacement to homes, businesses, or livelihoods. • Conduct community outreach once site has been finalized • Liaison with the Physical Planning Board for expert opinion on the subject.	Project Manager, PIU, MoH Environmental and Social Safeguard Specialists	**No additional cost**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction activities	Flora and Fauna	• The rehabilitation, refurbishment and upgrading of existing healthcare facilities could result in some clearing of vegetation that could result in loss of tree/ plant cover. This is expected to be minor as the proposed construction sites are mostly in-built environment and areas that are already disturbed.	• Avoid environmentally sensitive sites and unnecessary exposure or access to sensitive habitat; • Ensure that vegetation clearance does not beyond what is required for activities; • Ensure that construction workers are not engaged in hunting and activities that could pose threat to biodiversity	Construction Contractor and Project Implementation Unit	**No additional cost**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction phase: Hazardous materials handling, storage, use and transportation	Soil and water resources (both ground water and surface water resources)	• The risk of accidental discharge of hazardous products, leakage of hydrocarbons, oils or grease from construction machinery also constitute potential sources of soils and water pollution.	• Ensure that storage containers of hazardous substances are always in good condition and tightly close; • Construction should develop spill response plan as part of the construction ESMP • Maintain the MSDS Sheets for hazardous materials on site • Prepare a H&S Plan	Construction Contractor and Project Implementation Unit Department of Environmental Health St. Lucia Solid Waste Management Authority	**Cost included in contractors cost**
Construction Phase: Health Service interruption and relocation during renovation.		Patients avoid care Patients spend more time and money seeking care else where	1. Communication in community during renovation on any changes to services. 2. Funded referral service to nearby equivalent service provide.	Ministry of Health	**Ministry of health**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction activities: Construction Wastes Generation and Disposal issues	Environmental degradation-soil, water resources, public health, air	• Improper disposal of construction wastes can lead to environmental degradation due to dispersion of materials of materials in the nearby canals, streets and adjacent properties • -Poor or improper management of the stored materials and wastes can result in dispersion of materials in the nearby canals, streets and adjacent properties; • -The construction activities will necessitate temporary on-site storage of construction materials and excavated materials, poor management of the stored materials and • wastes can result in dispersion of materials in the nearby canals, streets and adjacent properties	• The contractor shall handle construction materials and waste in accordance with approved country procedures. • The community should be made aware of constraints imposed on the contractor for waste collection, storage and disposal • Where possible the contract should coordinate with other agencies to deposit construction waste in areas that are to be filled or reclaimed • The contractor shall contain excavated materials in the vicinity of the worksite within berms to prevent dispersion and sedimentation of drains, creeks, streets	Implementation: Contractor Communication Officer Project Implementation Unit Director of Health Education Unit	**Included in Contractor's costs (Include cost of signs, media costs, printing, etc.**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction phases	-Air Emissions and Air Quality -Dust generated from earthworks -Dust generated from materials handling -Wind generated dust from exposed areas of soil and mounds of stored soil - Dust generated from vehicle movements emissions from construction traffic and on-site machinery	• Impaired Air quality due to emissions from vehicles and dust generated • Respiratory impacts on site workers, nearby residents and pedestrian	• Dust suppression methods such as wetting materials or slowing work should be employed as needed to avoid visible dust • Gas masks / respirators when working in closed areas such as access manholes, etc. (according to approved procedures) • Document requirements and standards in the Contractors	Implementation: Contractor Supervision: Project Manager - Project Implementation Unit	**Included in Contractor's costs**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction Activities	Noise generation (from the use of excavation machines and construction equipment)	• Noise generation from the use of excavation machines and construction equipment with its impact on workers and neighborhood	• Hearing protection for working around machinery where the noise exceeds 60 dB (according to approved procedures) • Limiting working hours according to the EPA requirements • Maintain vehicles and machinery according maintenance requirements • Consider noise suppression capability in the procurement of vehicle and equipme	Main responsibility: Contractor Supervision: Project Implementation Unit (include other relevant entities involved in implementing Mitigation Measures)	**Included in Contractor's costs**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Construction Activities	Worker and Public Health and Safety	• The safety of the local population may be at risk during construction activities. The movement of trucks to and from the site, the operation of various equipment and machinery and the actual construction activities will expose the workers to work-related accidents and injuries. • Pollutants such as dust and noise could also have negative implications on the health of workers and near-by communities.	• ensure that traffic management plan is place where this might be an issue • Ensure that construction equipment are good condition and service regularly ; • Ensure that operators are trained; • Ensure that sites are properly barricaded during construction and temporary pedestrian walkways are provided when required; • Ensure workers are provided with personal protective equipment	Main responsibility: Contractor Supervision: Project implementation Unit (include other relevant entities involved in implementing Mitigation Measures)	**Included in Contractor's cost**

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
	Volatile Organic Compounds VOCs	• ($) Provide suitable Personal Protective Equipment (PPE) for workers assigned to prolonged paint or road asphalting jobs • Coordinate with facility management to avoid paint jobs during sensitive times of facility operation • Coordinate with facility management to ventilate paint jobs in confined spaces in the facility • Seek to schedule paint jobs in institutional vacation periods • Inform facility managers and users of periods of unavoidable paint jobs • Use water-based paints from recognized manufacturers.	• Monthly review of paint purchase receipts • Monthly review of paint MSDS • Review of PPE availability & usage during prolonged paint works	Main responsibility: Contractor Supervision: Project implementation Unit (include other relevant entities involved in implementing Mitigation Measures)	
Occupational He					

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity		Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Health and Safety		Physical hazards from demolition waste	• Inform facility users to stay vigilant in areas of demolition waste generation and storage • Same measures as for demolition waste management	• Worker and facility user monitoring • Log of relevant injuries & complaints	Main responsibility: Contractor Supervision: Project implementation Unit	
Oc		Physical hazards from equipment and vehicles	• Create exclusion zones to limit access to equipment and vehicle maneuver lines • Avoid vehicle speeds higher than 20km/hr in project sites • Same measures as for demolition waste management	• Monthly review of Driver & operator testing reports • Monthly review of Driver & operator training certificates • Review of exclusion zones • Log of relevant injuries & complaints	Main responsibility: Contractor Supervision: Project implementation Unit	

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity		Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
		Fire Hazards	• **($)** Train workers on identifying and avoiding fire hazards • **($)** Provide fire extinguisher instruments and sand buckets in good working condition • Create strictly **No-Smoking** zones in fire risk areas such as fuel storage areas, excavations, near decomposing organic matter in waste piles and around waterbodies • Avoid storing flammable materials in direct sunlight or near heat sources • Ensure suitable grounding and circuit breakers are available for electrical works • Strictly avoid excavations in areas with residential natural gas connections or works near natural gas piping • Identify and provide contacts of closest authorities and emergency services to contact in case of	• Weekly review of fire extinguishing instruments • Weekly review of flammable material containers &storage • Log of relevant injuries & incidents	Main responsibility: Contractor Chief Fire officer - St Lucia Fire Department	

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity		Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
Occupational H & sand Safety		Slippage and Falling & Working at heights	• Provision of suitable footwear to avoid slippage • Avoiding tasks on unstable slopes or soils without proper fall prevention precautions • Installation of guardrails at the edge of any fall hazard area • Proper use of ladders and scaffolds by trained employees • Use of fall prevention devices	• Ongoing review of PPE availability &usage • On-going review of relevant fall prevention measures and awareness		
		Manual handling and lifting	• Incorporating rest and stretch breaks into work processes and conducting job rotation • Taking into consideration additional special conditions such as left-handed persons and persons with existing medical conditions	• Ongoing observation of workers • Weekly review of break periods and rotations		

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity		Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
	Operational Phase	Electrocution	• Checking all electrical cords, cables, and hand power tools for frayed or exposed cords • Following manufacturer recommendations for maximum permitted operating voltage of the portable hand tool • Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas • Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work	• Ongoing equipment and connection checks and reporting		

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity		Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
		Worker influx	• Inform local communities in case of anticipation of high worker influx into project area • Inform workers of local customs, traditions, and facilities • Perform medical checks on workers assigned prolonged work periods in confined spaces • Ensure work area is reasonably equipped to provide basic needs for workers during their work periods	• Daily review of log of relevant incidents &complaints		
		Traffic and accessibility	• Inform local communities in case of anticipation of prolonged closure of roads or access routes • Assign trained workers to manage traffic in cases of works during peak traffic/ rush hours • Coordinate with local authorities and traffic authorities in case of major disruption to traffic	• Daily review of log of relevant incidents & complaints		

Table 2. Potential Environmental and Social Impacts and Proposed Mitigation Measures

Project Activity	Aspect	Potential Environmental and Social Impacts	Proposed Mitigation / Controls Measures	Responsible for Implementing Mitigation Measures	Cost
	Exposure to biological hazards	• **($)** Provide suitable PPE to limit the risk of exposure to biological hazards	• Ongoing review of PPE availability &usage		
Operational Phase: Operation of Health Care facilities	Health care wastes management	Medical facilities are a potential source of infectious waste in gaseous, liquid or solid forms. These could pose unsafe conditions for healthcare staff. Of particular concern are janitors handling infectious waste (including sharps) without adequate protective gear, storage of sharps in containers that are not puncture-proof and management of radioactive waste at healthcare where x-ray equipment will be installed. While some OHS risks will be borne by new equipment or services introduced after renovation or upgraded facilities.	Detailed mitigation measures are provided in the Updated Health Care Wastes Management Plan which is one of the safeguards instruments that have been developed for this project	Main responsibility: Contractor Supervision: Project Manager	Included in Contractor's mobilization cost

5.1 Environmental and Social Screening Process

Environmental and Social Screening of all sub-projects will be undertaken during planning and design stage, before commencement of civil works on the site. Environmental and social management plans will be prepared to identify, assess and mitigate, as appropriate all potential negative impacts.

Step 1: Application of the Screening processes

The PIU with the assistance of a consultant team (where required), will determine appropriate instruments for mitigating environmental and social impacts. This will allow the PIU to:

a) Determine the level of environmental work required (i.e. whether an ESMP is required; whether the application of simple mitigation measures will suffice; or whether no additional environmental work is required);

b) Determine and incorporate appropriate mitigation measures for addressing adverse impacts

The PIU will prepare a Safeguard Screening Summary which includes:

- a list of micro-projects and sub-projects that are expected to have environmental and social safeguards impacts;
- the extent of the expected impacts;
- the instruments used to address the expected impacts; and
- time line to prepare any required instruments.

The Safeguard Screening Summary, when completed, will provide information on the assignment of the appropriate environmental and social category to a particular activity for construction of new facilities or rehabilitation of existing structures.

The PIU, with the assistance of a consultant team (where required), will determine and prepare appropriate instruments for mitigating environmental and social safeguards impacts identified in the screening process. During the preparation of sub-projects, the PIU will ensure that technical design can avoid or minimize environmental and social impacts, avoiding land acquisition.

The PIU will carry out the initial screening in the field, through the use of the Environmental and Social Screening Form – Part 1 of the Environment Management Plan – Checklist (Appendix 2). The PIU will retain a copy of the Safeguards Screening Summary for possible review by the Implementing Agency and the World Bank. The review, which may be conducted on sample basis, will verify the proper application of the screening process, including the scoping of potential impacts and the choice and application of instruments.

Step 2: Preparation of site-specific safeguards instruments

The environmental and social impact assessment process will identify and assess the potential environmental and social impacts of the proposed construction activities, evaluate alternatives, as well as design and implement appropriate mitigation, management and monitoring measures. These measures will be captured in the Environmental and Social Management Plan (ESMP).

This ESMF includes an ESMP-checklist which can be used as the Environmental and Social Management Plan (ESMP) for individual sub-activities once identified during the scoping identification phase (Appendix 1). For each sub-activity in which the specific buildings/sites for rehabilitation, and/or demolition and complete reconstruction is known, the EMP-checklist is completed. The checklist has three parts:

- Part 1 includes the descriptive part that describes the project specifics in terms of the physical location, institutional arrangements, and applicable legislative aspects, the project description, inclusive of the need for a capacity building program and description of the public consultation process. This section could be up to two pages long. Attachments for additional information can be included. (This is the ESSF, Part 1 as detailed in appendix 1).

- Part 2 includes the environmental and social screening of potential issues and impacts, in a simple Yes/No format followed by mitigation measures for any given activity. Currently, the list provides examples of potential issues and impacts. This list can be expanded to specific site issues and /or impacts; and good practices and mitigation measures. (Appendix1).

- Part 3 will include the monitoring plan for activities during project construction and implementation. It retains the same format required for current ESMPs. **It is the intent of this checklist that Part 2 and Part 3 be included as bidding documents for contractors.** (Appendix 3).

The ESMP-checklist which to be filled out for each sub-project, will be used to determine the type and scope of the environmental and social safeguards impacts. The practical application of the EMP-checklist would include filling in of Part 1 to obtain and document all relevant site characteristics. In Part 2 the type of foreseen works, would be checked, and the completed tabular EMP is additionally attached as integral part to the works contract and, analogous to all technical and commercial terms, that is signed by the contract parties. Part 3 of the ESMP- checklist, the monitoring plan, is designated for the Contractor responsibility, to be supervised by the Supervising Engineer and the PIU.

The PIU will prepare the EMPs in consultation with affected peoples and with relevant NGOs, as necessary. The EMP will be submitted to the Implementing Agency, for review, prior to the submission to the World Bank for approval. Documentation and clear records of such site-specific consultations must be maintained at the PIU.

In case of any change in scale of scope of construction or in case the Government decides to construct new buildings, the due-diligence measures will be enhanced, in consultation with the World Bank, and no such physical investments will be undertaken without Bank approval and clearance.

Step 3: Monitoring of safeguards instruments

The PIU will supervise and monitor the overall safeguards implementation process and prepare a progress report on the application of safeguards policies during the planning, design, and construction phases of the Project. The PIU will also develop the reporting requirements and procedures to ensure compliance of the contractors; conduct public consultation and public awareness programs; and carry out periodic training for field engineers and contractors as appropriate. Environmental consultants will be hired by the PIU to support them in this activity.

Appropriate mitigation measures will be included in the bidding documents and contract documents to be prepared by the PIU. Compliance by the contractors will be monitored in the field by the project field observers, working under close supervision. The performance of the contractors will be documented and recorded for possible later review. Sample Environmental Safeguards procedures for inclusion in the technical specifications of construction contracts are provided in Appendix 3.

Figure 2. Outline of the Environmental and Social Screening and Approval Methodology

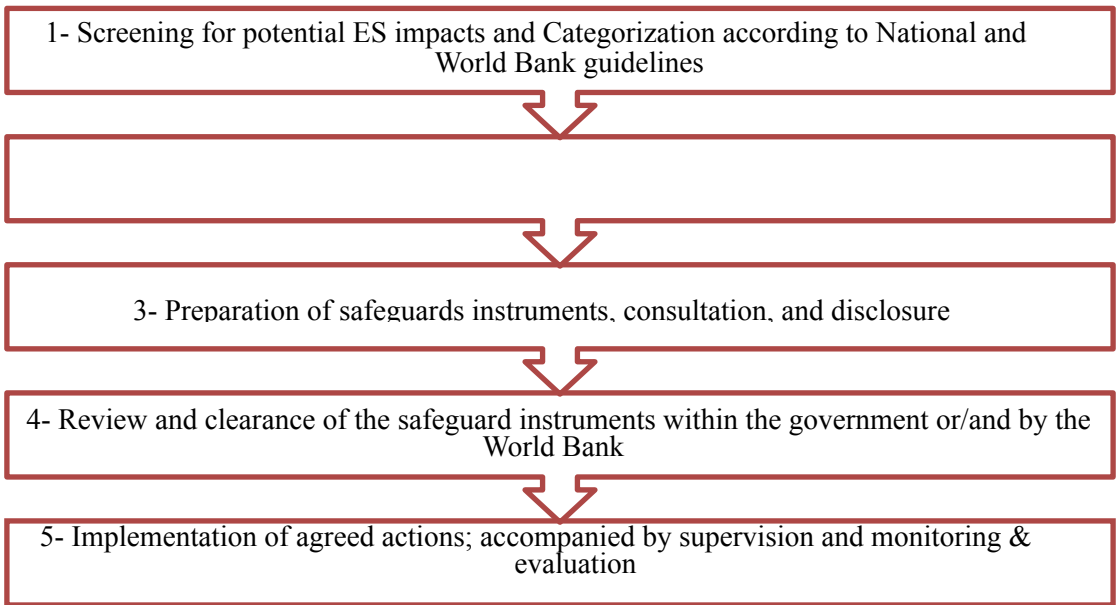


Table 3, below, provides a summary of the various steps involved in safeguard work under a framework approach, from sub-project screening process, review of screening results, categorization, scope of safeguard work needed, preparation, review and approval of safeguard instruments, including consultation with relevant stakeholder groups, and disclosure of the safeguard instrument. The information in the table also guides on under what circumstances to use simple measures following the checklist, in place of an ESMP and vice versa. Also, it indicates the entities and responsible parties involved at each step and the expected outcomes.

Table 3. Sub-project Safeguarding, Approval and Disclosure Process

Step	Scope	Responsibility	Criteria	Outcomes
Screening for Potential Environmental and Social Safeguard Impacts and Determination of Safeguards Category for Each Sub-project	- Screen proposed sub-project according to safeguards checklist (Appendix 1) - Determine applicable national and World Bank requirements - Determine instruments needed to meet requirements	Project proponent (PIU)	- **Category B** o Less adverse than WB OP 4.01 Category A o May result in limited negative impacts o Site-specific Impacts o All impacts are reversible o Mitigation measures can be readily designed o **WB Instruments needed:** ESMP o ES requirements included in tender documents &contracts - **Category C** o Most likely results in minimal or no negative impacts o **Refer to check-list in the appendix section:** Comply with National regulatory requirements o **WB Instruments needed:** None	- **Subproject-specific screening checklist** - **Sub-project categorization** - **ES Assessments and Management &Monitoring instruments**
2- Review of Safeguards Screening by the World Bank	- Prepare subproject-specific Safeguards Screening Summary	A. Project proponent B. WB	***A.*** **Safeguards Screening Summary(SSS)** *i.* Categorization Rationale *ii.* Safeguard instruments *iii.* Submitted as part of sub-project identification package	***C.*** **Safeguards Screening Summary (SSS)** ***D.*** **Approval/ Revision of SSS**
			B. **Selective review of SSS**	
	- Assess Safeguards Screening			

3- Preparation of Safeguards Instruments,	**- Draft Category B ES instruments**	**Sub-project proponent**	**- Draft ES instruments according to national and WB requirements**	**- Draft ES instruments** **- Consultation on draft ES instruments**
Consultation and Disclosure	**- Consult on draft ES instruments** **- Incorporate feedback in Final ES instruments**		**- Liaise with WB in case clarifications or changes arise** **- Include project stakeholders, project- affected groups, local NGOs in consultations** **- Initiate consultations as early as possible** **- Provide relevant material in comprehensible, accessible formats** **- Ensure enough time is provided to examine documents ahead of consultation events** **- Document stakeholder feedback and ensure disclosure & meaningful consultation** **- Show how stakeholder feedback was addressed in final ES instrument**	**- Final ES instruments**
4- Review and Clearance of Safeguard Instruments	- Review and clearance of ES instruments according to national requirements - Review and clearance of ES instruments according to WB requirements	Project proponent WB for Category B	- Category C sub-projects are not reviewed by WB - Project proponent ensures compliance of Category C projects with national legal requirements	**- Cleared ES instrument according to national requirements** **- Cleared ES instrument according to WB requirements**

5- Implementation of Agreed Actions and Supervision, Monitoring and Evaluation	A. ES safeguards implementation B. Safeguard implementation supervision	**A. Project proponent** **B. WB**	**A. Project proponent contractually obliged to implements ES safeguards** **B. WB team may conduct regular visits to supervise implementation of safeguards**	**A. ES instrument implementation** **B. ES instrument implementation review**
	C. Monitoring & Evaluation	**C. Independent consultants**	**instruments and compliance with the Bank policy requirements.** **C. Independent consultants carry out monitoring programs**	**C. ES instrument implementation monitoring, evaluation, and improvements**

5.2 Pre-Design Phase

It is understood that all the health care facilities to be refurbished will be located on lands already owned by the Government, and in areas that are unoccupied. However, it is possible that conditions have changed, that new parcels or locations might be better suited for improvements, or that needs may evolve over the course of the project. In addition, the specific details of the health care facilities where improvements and refurbishments will be done are not yet known and will not be known until a survey is performed during the early stages of project implementation. Therefore, it will be necessary to conduct a screening process and verify that the expected works are in line with those envisioned in the ESMF, and that there are no new, unexpected, or unacceptable environmental and social risks which have not been taken into account in the ESMF.

During the pre-design phase, the PIU officer uses his/her training and experience to decide based on the degree of impact likely to be caused by the project due to its size, proximity to a coastal area, marine or terrestrial reserve and the existing topography that may be disturbed. Other environmental and social risks or potential impacts should be kept in mind during the pre-design screening process, such as infringement on lands (whether legally occupied or not), presence of vulnerable persons, existence of hazardous materials or conditions, etc.

5.3 Design Phase

It is expected that the projects would receive adequate technical review by qualified technical professionals to ensure their technical and environmental soundness. Engineering review for all plan details and designs would be integral in this process.

The design should include adequate wastewater treatment and disposal systems, such as package treatment plants and chlorination, where appropriate for the size, capacity, and services offered at the particular health facilities. The design should also include adequate facilities for management of solid waste and medical waste, where appropriate for the size, capacity, and services offered at the particular health facilities.

If local permits are required from the Physical Planning Department or other agencies, then these should be processed according to regulations. Any conditions or stipulations resulting from local permits must also be added to the ESMP for the works and becomes an additional compliance requirement.

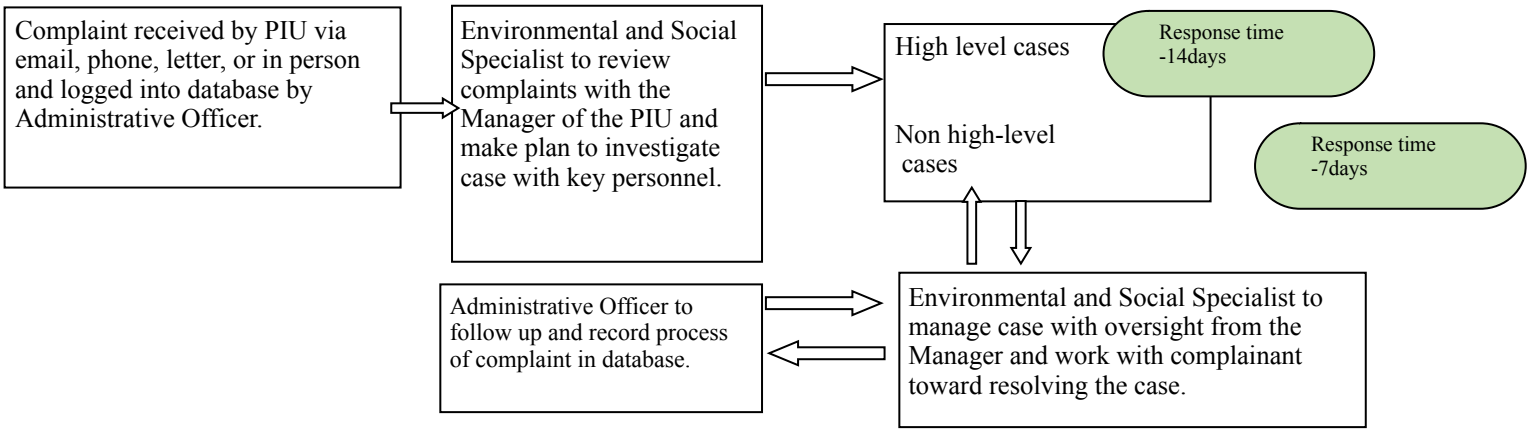
Land acquisition is not anticipated because the health care facility refurbishments will typically occupy the same physical footprint; in addition, the facilities are already located on government (Crown) property. However, adjustments to plans, titling issues, temporary access during rehabilitation or renovation, or other needs may occur that require parcels to be occupied temporarily, purchased, or accessed. In such cases it is necessary to avoid triggering the Involuntary Resettlement Policy (OP/BP 4.12) by the removal of persons or their assets such as crops or structures, or by requiring access or occupation without recourse or recompense. Therefore, any works or activities to be financed as part of this project or at a later stage will be on government lands which are unoccupied and unencumbered by informal settlers or their assets. Demonstration of this ownership will be required as part of the screening and site selection process and is included in the mitigation plan.

Privately owned land or land purchased through willing-seller and willing-buyer is acceptable, provided that the land acquisition must occur by mutual agreement in exchange for a notarized purchase contract based on the market price at the date of acquisition. Any temporary access agreements should be equitable, voluntary, and documented in writing.

5.3.1 Grievance Redress

Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to the project-level grievance redress mechanisms (GRM) that will be established and managed by the project.

Figure 3: Grievance and Redress chart



During the pre-design phase of the project the PIU within the Ministry of Health will develop the GRM to register, track, address and resolve any complaints raised by individuals or groups. All complaints or related issues can be sent to the designated email account or given in person or

over the telephone, as posted on the work site, to the attention of the Project Manager in the PIU. Reported issues should include a name, date and contact information with a detailed description of the case, but anonymous complains can also be received. All reported cases will be logged by the Project Manager and directed to the appropriate persons attention (based on the nature of the complaint), who will be responsible to assign or escalate the case to the appropriate personnel. There will be a normal response time of 7 days for each case, however high-level cases may require up to 14 or more days for a response. The Project Manager within the GRM will direct high level cases to the attention of the Permanent Secretary in the Ministry of Health and will report further to the WBG representatives if necessary. The unit managing the GRM will maintain a Data Base to log all complaints and to track each from date received to date resolved and highlight how each case was resolved. These records will be available to WB staff during supervision missions. Consequently, should there be any complaints or concerns with individuals within the PIU all concerns should be addressed in writing to the Permanent Secretary in the Ministry of Health and Wellness. The Office of the Permanent Secretary will be responsible for directing and addressing all concerns based on issues raised.

The WB's Grievance Redress Service (GRS) is another mechanism whereby people aggrieved by a WB project can contact Bank Management directly. The GRS is based in Washington DC and ensures that complaints received are promptly reviewed and an action plan is established to address concerns. This avenue is available to individual and communities that feel harmed by a project, this mechanism extends to complaints about procurement.

5.4 Implementation Phase

General impacts typical of small civil works have been identified in the preceding section of this ESMF, and the mitigation actions that will be taken have been identified.

Appendix 3 provides the standard mitigation measures in the form of contract clauses, so they can be incorporated into the requirements of the contractor who will undertake the civil works. Additional mitigation measures would be derived from any conditions imposed by any statutory agency who reviewed the sub-projects and provided recommendations or conditionalities. These should also be converted to contract clauses as necessary.

Community engagement during the implementation of works is required in order to minimize social risk and ensure orderly and transparent execution of project activities. Communities also serve an important monitoring function and provide valuable feedback on contractor performance, design, and operation. The Ministry of Health and Wellness will be required to provide information to communities on a regular basis throughout the works.

5.5 Operational Phase

The chief environmental risk during the operation of the health facilities relates to the management of medical waste. During operation of the health care facilities, including times of emergency response or epidemics, medical waste will require proper treatment and disposal, as there may be potential negative effects on health care workers and to the public. To minimize these risks, the project will support the development of the national health care waste management plan

Now, there is no formalized plan for health care waste management in Saint Lucia, but practices are in place. Specialised 240-liter containers are provided by SWMA to biomedical waste generators including the major hospitals, polyclinics, and health centres.[10]Biomedical waste containers are collected from generators once weekly, in a specialised vehicle (with the capacity to hold 20 containers) operated by a private contractor with two specialized vehicles which are stainless steel lined and sealed, with equipment to properly secure bins. About 20 bins per week of medical waste are collected from hospitals, health centres and other biomedical waste generators around the island. This service is provided at no charge to government institutions, while private facilities pay. The waste is transported to an autoclave facility located at Deglos, where biomedical waste is stored in a 70-L refrigerated storage container and treated twice weekly with an autoclave. Since it entered operation several years ago, the autoclave has failed once due to a faulty valve, and this was repaired within a week. In the event of autoclave failure, the refrigerated storage facility at the same site has more than 3 weeks storage capacity at current generation rates. In the event of prolonged system failure, the SWMA could revert to deep burial of biomedical waste at the 2 waste disposal sites (Vieux Fort and Deglos) in Saint Lucia.

Currently, health care workers in Saint Lucia are required to follow guidelines for occupational safety and for best practice in medical waste management. Waste generators are required to properly segregate their waste, so that unnecessary treatment is avoided. Continuous training is required as staff become complacent and supervision is often inadequate.

To improve the management of medical waste and minimize risk to health care workers and the public, during project implementation the national health care waste management plan will be further developed and formalized in the form of a Health Care Waste Management System (HWMS) under the Health Systems Strengthening Project. The HWMS will be adequate to the scale and type of activities and identified hazards for Saint Lucia and will be implemented and operated by MOHW.

[10] Environmental Impact Statement for Construction of a New Polyclinic at Bois Jolie, Dennery, Saint Lucia. Consultants Report by Alison King-Joseph et al., December 2011.

As previously stated, it is anticipated that refurbishment-related civil works may only require simple mitigation measures following the sub-project's screening process. In such cases, the standard mitigation measures would be all that is needed to minimize potential risk of negative environmental and social impacts/risks.

Alternatively, if works at any site are considered "complex or sensitive" and in need of additional assessment, such as an Environmental Impact Assessment (EIA), in such cases the WBG would be notified and requested to provide a no-objection to the particular works in question, based on a review of the safeguards applicable. The additional mitigation measures resulting from the EIA studies would then be added to the ESMP to create a more comprehensive, customized ESMP for that particular works. In any event, all ESMPs under this project will remain Category B type of ESMP to be eligible for financing.

6.0 INSTITUTIONAL ARRANGEMENTS

This section of the report describes the link between the predicted environmental impacts, the needed mitigation measures identified during the screening and assessment process, provisions for budgeting the costs of such measures, and the roles of those responsible for ensuring that the mitigation measures are carried out.

6.1 Project Implementation Unit (PIU)

The Ministry of Health and Wellness will have the overall responsibility for project implementation. The Project Implementation Unit (PIU) will be physically located within the Ministry of Health and Wellness

A Project Manager will lead the day-to-day implementation of the project and will report to the Project Implementation Unit (PIU) on the coordination of efforts with other partners, and for technical coordination of activities financed under the project.

The PIU team will include the following roles: monitor project implementation, financial management, procurement and project communication activities. While the PIU will be largely responsible for the day to day implementation of the project activities, PIU will be further supported by the relevant expertise which already exist within the Ministry of Health. The Social Planning Officer and the Chief Environmental Health Officer will be responsible for monitoring the social and the environmental safeguards. The supervision by the PMU and contractors doing any construction or supervision work will we carried out by the Ministry's Engineer who is located within the Corporate Planning Unit in the Ministry of Health and

Wellness. These activities will be monitored closely by the Chief Health Planner of the Planning Department.

The institutional arrangements for this specific project differ from the institutional arrangements followed by other World Bank-financed projects in Saint Lucia. This is due to this project's highly technical nature which requires a closely coordinated process across technical and fiduciary requirements. In addition, the current national-level Project Coordination Unit (PCU) is already stretched thin from the demanding project management and fiduciary needs of the disaster risk project together with the other existing projects in the portfolio. While the recruitment of these fiduciary positions will be ongoing in the context of project preparation, the proposed PPF may seek to utilize the support of the existing PCU, which is currently supporting other Bank operations. Interim arrangements under consideration include the temporary assistance provided by fiduciary staff of the current national-level PCU

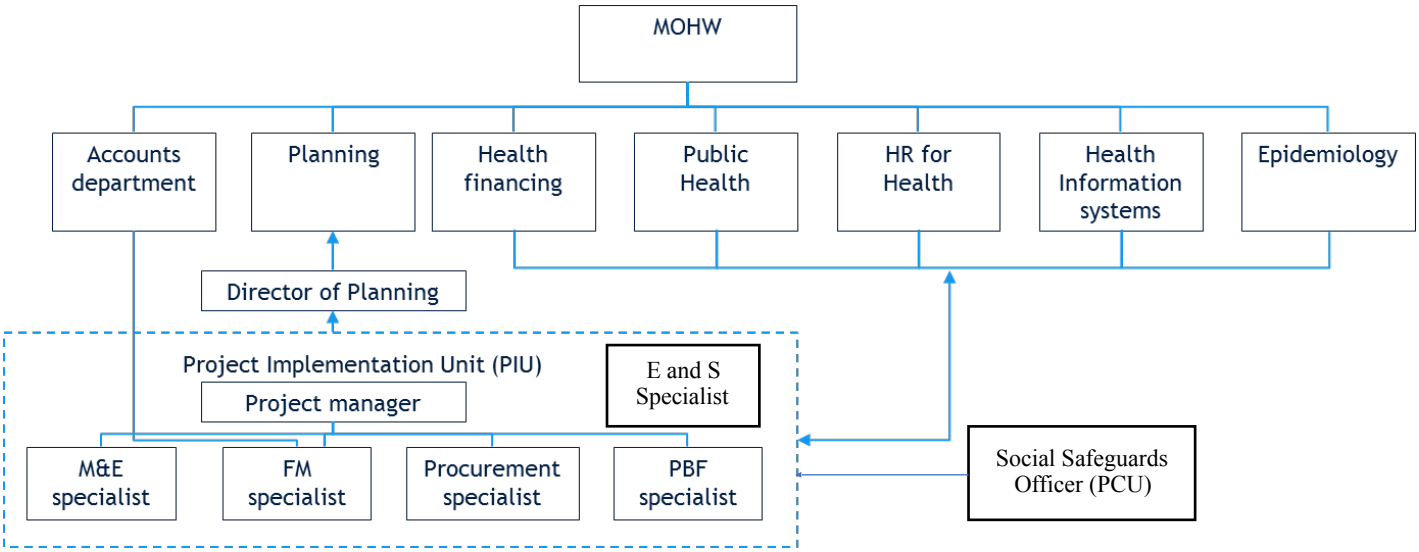
Given the weak capacity for monitoring of the safeguards within the MoH it is recommended that the Social Safeguard Officer within the PCU provide some level of support. It is also recommended that an environmental and social specialist be hired as part of the PIU. An institutional capacity strengthening component has been included as part of the project implementation of activities. Adequately staffing the new PIU will be a condition of effectiveness of the project.

The PIU team in addition to the Project Manager, will include the following specialists:

- Monitoring and Evaluation Specialist
- Financial Management Specialist
- Procurement Specialist

In addition, an Environmental and Social Specialist (or separate Environmental and a Social Specialists) will be included in the PIU team and will be responsible for monitoring the Project and implementing the ESMF, including supervision of construction works to verify compliance and mitigation measures, Workers' Code of Conduct and with the Project-level GRM. Additionally, the Environmental and Social Specialist(s) in the PIU will also be responsible for all consultation and stakeholder engagement activities throughout the project. Furthermore, the PIU team will be supported by technical staff of the MoH throughout project implementation.

The figure below provides an overview of the structure that will support and implement the project.



6.2 Environmental Performance Clauses for Works Contracts

Standard environmental and social related clauses were developed and are to be appended to or incorporated into the contracts as necessary depending on the type of works to be conducted or the findings of the checklist by the appraising project officer. These form part of the environmental management plan and the mitigation measure presented there. These clauses are general and may be modified to conform to applicable laws and contract procedures and shall remain in force throughout the contract period.

Generic contract clauses are provided in Appendix 3 for the following general conditions for small civil works, roads, buildings, and other works expected to have minor impacts:

- Permits and Approvals
- Site Security
- Discovery of Antiquities
- Worker Occupational Health and Safety
- Noise Control
- Use and Management of Hazardous Materials, fuels, solvents and petroleum products
- Use and Management of Pesticides
- Use of Preservatives and Paint Substances
- Site Stabilization and Erosion Control
- Traffic Management
- Management of Standing Water
- Management of Solid Wastes -trash and debris
- Management of Liquid Wastes

Additional clauses for the following special conditions are also within Appendix 3:

- Management of Medical Wastes
- Management of Asbestos

It is expected that these generic clauses will be incorporated into all contracts, as applicable. In addition, specific project-related recommendations may also be forthcoming from statutory bodies that are part of the permitting agencies such as and these can be added to contract clauses as well. Finally, if an EIA has been conducted for a particular sub-project due to its environmentally sensitive or complex nature (see section 5.1), then the specific recommendations for mitigation measures in that EIA should also be included as contract clauses.

For purposes of cost estimation and budgeting, the contractors should be aware of the existence of the environmental mitigation measures and associated ESMP requirements and include cost items for such purposes in their proposals.

6.3 Monitoring, Supervision, and Reporting

6.3.1 Environmental and social monitoring mechanisms

❖ ***Environmental and social monitoring during construction***

❖ During the construction phase, environmental and social monitoring is carried out:

- internally (internal monitoring) by the companies in charge of the works, through their Quality -Health-Safety -Environment (QHSE) Managers who the contractor will have to recruit;

- externally (external monitoring) by the Supervising Engineer or Control Mission that the National Project Coordination will recruit, with the obligation to have an Environmental and Social Safeguard Specialist (SSES). Supervision of the work of the Supervising engineer will be carried out by the SSES of the PIU.

❖ ***Environmental and social follow-up***

❖ The follow-up will be carried out internally (internal follow-up) and externally (external follow-up, sovereign control or inspection).

- Internal monitoring will be provided by the ESSS to be appointed by the Project Coordination, to ensure that all environmental and social requirements are considered in the project's implementation and monitoring.

- External monitoring will be carried out by National Environmental Agency (NEA) or its equivalent. The NEA, as third-party monitoring entity, will ensure compliance with not only with the national environmental regulations, but also WBG safeguard measures. A Memorandum of Understanding (MoU) should be established between the PIU and the NEA that sets out the terms, of the mode of intervention frequencies, and timelines as well as the funding source for NEA involvement in project's follow-up activities.

❖ ***Evaluation (audit) at mid-term and project implementation completion***

The evaluation aims to (i) verify whether objectives have been met / achieved and (ii) draw lessons from operations to modify future intervention strategies. The evaluation (or audit) will be done at mid-term and at the end of the project by independent consultants.

❖ ***Environmental and social components to follow***

During the works, the monitoring will cover all the identified potential impacts and all related mitigation measures.

Follow-up during the preparation and works phase - During civil works, the regulations in force in the country, and those concerning the environment, must be respected. The implementation of the project will have to be done within the framework of a quality management plan including the respect of the environmental constraints corresponding to the measures presented in the ESMF. The contractors in charge of carrying out the project (or certain project activities) will have to provide and apply the regulation which will establish:

• measures to preserve natural habitats;

• forest preservation measures;

• measures to protect physical cultural resources;

• safety rules concerning workers;

• the management of solid and liquid waste;

• awareness and prevention measures (health, hygiene, safety, STD, HIV/AIDS);

• measures to prevent/address sexual violence based on gender;

• measures to combat child labor.

❖ ***Monitoring indicators***

Strategic indicators to be monitored by the Environmental and Safeguard Specialist (ESSS) of the PIU. The following strategic indicators should be followed up, to ensure compliance with the provisions of the framework approach under which the project was processed:

• Number of sub-projects that have been the subject of environmental and social screening (Screening);

• Number of funded subprojects that have been tri-pre-tested and subsequent actions prior to their implementation

• Number of ESIAs/ESMPs completed and published;

• Number of funded sub-projects that have been subject to environmental and social monitoring and reporting;

• Number of actors trained / sensitized on environmental and social management;

• Number of sensitization campaigns carried out;

• Number of people sensitized on the environmental and social issues of the project.

❖ ***Reporting Requirements***

For a better follow-up of the implementation of the ESMF, the following reporting system is proposed:

• periodic monthly reports or detailed implementation reports prepared by the environmentalists of the contractor's environmental specialist and submitted to the supervising engineer and the PIU;

• Periodic reports (monthly, quarterly, semi-annual or annual) of implementation monitoring to be produced by the monitoring missions and transmitted to the Project coordination;

• quarterly and annual implementation monitoring reports to be produced by CEA and forwarded to Project Coordination;

• Quarterly or detailed progress reports on implementation monitoring and follow-ups monitoring, prepared by the PIU and submitted to the Bank

6.3.2 Supervision

World Bank supervision will take two or three times a year. The supervision mission team will include the environmental specialist and the social safeguard specialist on the project team. Prior to the supervision mission the PIU will prepare a compliance monitoring report that will serve as the basis for the safeguard supervision.

6.4 Health Care Waste Management System (HCWMS)

The Health Care Waste Management Plan (HCWMP) will be prepared as a separate document by the Ministry of Health under the Health Systems Strengthening Project. The Quality Control Officer at MOHW may incorporate the HCWMP into an ISO-consistent scheme and integrate the management of medical waste into DOHW administrative processes.

7. COST OF IMPLEMENTING THE ESMF

Table 4: Estimated costs of technical measures

Activity	**Quantity**	**Unit cost ($US)**	**Total cost ($US)**
EIA / RAP development	2 studies	10 000	20 000
Environmental and social guidelines development (ESMS / HSRP)	1 guide		
Development health and safety plan (construction companies)	FF	5000	5 000
Supervision and monitoring	During 2 years	20 000	20 000
ESMP Evaluation (mi-term, final)	2	10 000	20 000
TOTAL			**65, 000**

Table 5: Training and awareness measures costs

Actors involved	Topics	Quantity	Unit cost ($US)	Total cost ($US)
Training				
Environmental Health Officers	- Training on Environmental and Social Assessment (screening and classification of activities, identification of impacts, mitigation options and indicators) - Selection of mitigation measures in the checklists - Legislation and national environmental procedures - World Bank Safeguard Policies - health and safety standards monitoring	3-day workshop (2 cohorts)	10,000	10, 000
			Sub TOTAL	**10 000**
Awareness				
- Population - construction companies	- Public awareness and advocacy on projects environmental and social issues, good environmental practices, good conduct in the yards, respect for hygiene and safety, compliance with development standards - Awareness Education on retrofitting works and redirection of services if necessary	ongoing		10, 000
			Sub TOTAL	**10, 000**
TOTAL				20, 000

Table: 6 Estimates for Environmental and Social Aspects

Measures	Actions	Responsible	Costs USD
Institutional measures	ESMS recruitment	Ministry of Health and PCU	PM

SUB-TOTAL MEASURES	**INSTITUTIONAL AND TECHNICAL**		
Training	Training in projects environmental and social management and monitoring and enforcement of environmental measures	Environmental Specialist	10, 000
			10,000
GENERAL TOTAL			**95,000**

8. PUBLIC CONSULTATION AND DISCLOSURE

1. Consultation

A national multi-stakeholder consultation was held in May, 2019 where the OECS Regional project and the draft ESMF and the WBG safeguard policies were presented. Images of the consultations are in Appendix 4. Stakeholders included both public and private sector actors and communities who might be possibly affected. Most of the participants expressed comfort with the activities for vector control and management as these have been ongoing in country for over ten (10) years. They did indicate however, the need to have early warnings to notify the community on days and time particularly for fogging activities. Secondly, they expressed the need to have maximum community involvement when it came to baiting and other activities geared towards reducing vectors such as mice and rats. The participants also expressed the need for the MoH to promote alternative *'natural or non chemical'* forms of insecticides such as the use of citronella, bed nets within households. No concerns on the construction and termite treatment were registered.

The MoH assured the persons in attendance that every measure will be effected to prevent any harm to non-targeted organisms. A communication plan will be developed to update the population on timelines for activities such as construction and vector management schedules. In summary, the group was pleased with the entire OECS Regional Project and the proposed measures to be taken to minimize any anticipated risk, especially the grievance redress mechanism.

(Subsequent to these consultations the pest management activites in the project were removed).

2. Public Disclosure

The ESMF will be disclosed on the MOHW website along with an invitation to provide input and feedback via the email address or telephone numbers provided. In addition, emails and links to the draft document were provided to key stakeholders to solicit input. The Final version of the ESMF will be posted on the websites of the MOHW and WBG as part of the public record.

Appendixes

Appendix 1 Environmental & Social Screening Criteria/Checklists

Objectives

1. Determine the WB environmental category for each sub-project and the WB instruments needed (ESIA/ESMP)
2. Identify the category of the sub-projectaccordingtonationalclassificationandtype of National Instruments needed (EIA or scoped EIA).

In order to achieve the above, the screening process follows three stages:

- **Stage 1**: Identify the environmental category of the sub-project according to national classification. This determines the type of National Instruments needed (EIA or scoped EIA) and provides an early indication of the potential ES impacts of the project.

- **Stage 2:** Screen the sub-project against **Criteria/Checklist 1 – High Impact Checklist.**TheobjectiveofthisChecklististoidentifyprojectswhichwouldhave highly significant and sensitive ES impacts (WB OP 4.01 Category A).

- **Stage 3:** Screen the sub-project against **Criteria/Checklist 2– Detailed Impact Assessment Checklist**, to assess the level of significance of potential ES impacts, determine the WB environmental category (B or C), and determine the WB instruments needed(ESMP).

Stage 2: High Impact Checklist (to identify projects with Category A impacts)

If any of the answers to the questions below is **Yes**, then the sub-project would be classified as WB Category A and would require a full-fledged ESIA. **Therefore, they will not be eligible for investment, since the project has been rated Category B.**

Sub-project title:	
Sub-project brief description:	
Question	**Answer (Yes/No)**

Will the project:	
1. Cause sensitive (direct and or cumulative) impacts? Examples of Sensitive impacts are those, which may be irreversible, or those which raise issues related to natural habitats and or physical and cultural resources.	
2. Cause diverse (direct and or cumulative) impacts? Diverse impacts are those impacting different media (air quality, water quality, noise level, risk to the community) at the same time.	
3. Cause unprecedented impacts? Unprecedented impacts are those, which have not been experienced before in the project's area of influence (i.e. those which occur for the first time in the area)	
4. Have an area of influence that significantly exceeds its footprint?	

Stage 3: Detailed Impact Assessment Checklist

For Eligible projects, apply the checklist below:

- If the answer is YES to any of the questions, then the project should be classified as Category B according to WB OP4.01.
- If the answer is "No" to all questions, then the project should be classified as Category C according to WB OP4.01.

Question		**Answer (Yes/No)**	**Other categories affected**
	Water (quality and resources)		
W1	Is the sub-project adjacent to waterways?		
W2	Will the sub-project generate solid waste?		
W3	Will the sub-project generate liquid waste?		
W4	Will the sub-project generate demolition waste?		
W5	Will the sub-project generate hazardous waste (grease, oil, empty paint containers, etc..)?		

W6	**Will the sub-project consume an amount of potable water higher than 3m^3 /site/day**		

Question		Answer (Yes/No)	Other categories affected
W7	Will the project cause interruption to water flows?		
	Air (Quality and Noise level)		
A1	Will the sub-project use of chemicals, agrochemicals, corrosives, and solvents?		
A2	Will the sub-project use machinery?		
A3	Will the sub-project involve refurbishment works (marble, concrete, ceramics, wood, etc.)?		
A4	Will the sub-project activities generate volatile Organic Compounds VOCs (paints, asphalt heating, preparation and application, etc.)?		
A5	Will the sub-project involve major and/or minor demolition works?		
A6	Will the sub-project involve Asbestos management?		
A7	Will the sub-project involve the installation of air conditioning units/systems?		
A8	Will the sub-project involve waste burning?		
A9	Will the sub-project involve Generation of odors?		
	Soil (quality and erosion)		
S1	Will the sub-project cause soil erosion?		
S2	Will the sub-project cause topsoil loss?		
S3	Will the sub-project involve soil compaction?		
S4	Will the sub-project involve concrete foundations/impervious layers?		
S5	Will the sub-project involve equipment on-site fueling? and storage?		

	Social impacts and community health & safety		
CHS 1	Will the sub-project involve temporary labor influx (more than 20 workers)?		
CHS 2	Will the sub-project cause traffic impacts and accessibility issues?		
CHS 3	Could the sub-project cause utility damage?		
CHS 4	Will the sub-project affect physical integrity of weak structures/houses adjacent to construction sites?		
	Occupational Health & Safety		

Question		Answer (Yes/No)	Other categories affected
OHS1	Will the sub-project involve potential physical hazards?		
OHS2	Will the sub-project involve fire hazards?		
OHS3	Will the sub-project involve slippage, falling & working at heights?		
OHS4	Will the sub-project involve manual handling and lifting?		
OHS5	Will the sub-project involve electrocution?		
OHS6	Will the sub-project involve excavation works?		
	Biodiversity		
BIO 1	Will the sub-project involve works in rivers, canals, or drains?		
BIO 2	Will the sub-project involve land disturbance or site clearance?		
	Physical Cultural Resources		
CR1	Is the sub-project located near a recognized PCR conservation area or heritage site?		
CR2	**Does the sub-project involve significant excavations and/or movement of earth?**		

Appendix 2 Sample Monitoring Checklist

Sample Monitoring Checklist to be used by the Contractor and the Supervising Engineering Consultant (SEC) during construction phase is included below.

Sample Monitoring Checklist to be used by the Contractor and the Supervising Engineering Consultant (SEC) during construction phase is included below.

	Activities	Monitoring requirements / Inspection items	Frequency* (Contractor/ SEC)	Checklist response - Week ....- Month/Year: Sat	Sun	Mon	Tue	Wed	Thu	Fri	Evidence required
1	Screening, safeguarding, Approval and disclosure process	• Number of sub-projects that have been screened and categorized • Number of sub-projects requiring and ESMPs • Number of sub-projects needing simple measures • Number of ESMPs prepared • Number of ESMPs implemented • Number of sub-projects implemented needing correctives actions/ mitigation measures	During Implementation (In this case, PIU, Supervising engineers and Contractors should work in tandem for the verification of these indicators)								Review, approval, as needed, disclosure documents. Reporting

2	Demolition and/or excavation waste	Please indicate the status of the waste container(s), whether they are full, half full, or empty. Please provide photo evidence of the site. Please rate the cleanness of the site from 1 to 3 (1 indicate s Ii no accumulation 11 and 3 indicates " random accumulation across many areas of the site". Please provide de photo evidence of the e site. Did you obtain a proof for the waste collection? Please keep receipt as r record Is waste disposal l proof checked and copy archived? Pl ease keep receipt as record	Daily / weekly Daily / weekly Upon collection/weekly Upon disposal/ weekly	Full 1 X	Full 1 X	Full 1 X	Full 1 X	Full 1 X	Full 1 X	Full 1 X	Three weekly Photos of different dates Three weekly Photos of different dates Record of collection receipt Record of disposal receipt

3	Hazardous waste and materials management	Please indicate the status of the waste container(s), whether r they are full, half full, or empty. Please provide photo evidence of the site. Are there any uncontained or unproperly disposed hazardous wastes? Please provide photo evidence of the site. Please rate the cleanness and organization of hazardous us chemicals' storage and containers of the site from 1 to 3 (1 indicates II Clean, organized and no accumulation" and 3 indicates II random accumulation across many areas of the sit e". Please provide photo evidence. Did you obtain a proof for the waste collection? Please keep receipt as record Is waste disposal proof checked and copy archived? Please keep receipt as record	Daily / weekly Daily/ weekly Daily/ weekly Upon collection/weekly Upon disposal/ weekly	Full 1	Full 1	Full 1	**Full** 1	Full 1	Full 1	**Full** 1	Three weekly Photos of different dates Three weekly Photos of different dates Three weekly Photos of different dates Record of collection receipt Record of disposal receipt
4	Noise	Does the work schedule comprise of machinery/equipment associated with high noise emissions (more than 70 dBA at source)? Please indicate number of noise complaints received - Please update the Complaints Register/ Rec r d w it h t h e new complaints received Is PPE made available? Is PPE used? Please provide photo. .	Daily / weekly Daily / weekly Daily / weekly Daily / weekly	-	-	-	-	-	-	-	Record of complaints Three weekly Photos of different dates

5	Dust	Does the work schedule comprise of machinery/equipment associated with high dust emissions? Please indicate number of dust complaints received- Please update the Complaint s Register/ Record with the new complaints received Are dust wetting procedures are being applied? Please provide de photo evidence of the site. Is PPE made available? Is PPE used during dusty conditions? Please provide photo evidence of the site.	Daily / weekly Daily / weekly Daily / weekly Daily / weekly Daily/ weekly	X	X	X	X	X	X	X	Record of complaints Three weekly Photos of different dates Three weekly Photos of Different dates
6	Paints	Is the type of paint purchased from a reputable/ known brand? Please keep receipt as record What is the amount of Paint purchased? Please keep receipt as record Do the types of paint purchased contain harmful chemicals (such as.....)? Please keep MSDS as a record Is PPE made available? Is PPE used during paint works? Please provide photo evidence of the site.	monthly/ monthly monthly/ month y Daily/ weekly Daily/ weekly Daily/ weekly	- - X X	- - X X	- - X X	- - X X	- - X X	- - X X	- - X X	Record of purchase receipt Record of purchase receipt Record of MSDS Three weekly Photos of different dates

7	Asbestos	is Asbestos waste being contained accord ng to the Asbestos management plan? Please provide photo evidence of the site. Is PPE made available? Is PPE used during Asbestos exposure? Please provide photo evidence of the site. Did you obtain a proof f for the waste collection? Please keep receipt as record Is waste disposal l proof checked and copy archived? Please keep receipt as record	Daily / weekly Daily / weekly Daily / weekly Upon collection/weekly Upon disposal/ weekly	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X	X X X X X	X X X X	Three weekly Photos of different dates Three weekly Photos of different dates Record of collection receipt Record of disposal receipt

8	Physical hazards from demolition waste, equipment and vehicles	Please indicate the number of injuries/ incidents - Please update the Incident Log Please indicate the number of complaints received/ incidents - Please update the Complaints Register with the new complaints received Driver and operator t testing report checked? Please keep a copy of the testing reports Driver and operator training report checked? Please keep a copy of the training reports Have you reviewed and confirmed exclusion zones? Copy of the sit e layout indicating all exclusion zones	Daily/ weekly Daily/ weekly monthly/ monthly monthly/ monthly Daily/ weekly								Incident Log Complaints Register Copy of the testing report Copy of the training reports Site layout with all exclusion zones
9	Fire hazards	Are the fire extinguishing instruments checked? Please complete relevant log Have you checked flammable material containers & storage? Please provide photo evidence Plea se indicate number of injuries & incidents - Please update the Incident Log	weekly/ weekly weekly/ weekly Daily / weekly								

10	Other occupational health &safety (Slippage and Falling- Working at heights - manual handling &lifting - electrocution - Exposure to biological hazards)	Is the approved occupational health and safety plan being applied? Please indicate number of accidents and near-misses. Please keep an updated log	Daily/ weekly Daily/ weekly	X	X	X	X	X	X	X	EHS approved plan and monitoring checklist Accident Log
11	Worker influx	Please indicate the number of complaints received/ incidents - Please update the Complaints Register with the new complaints received	Daily/ weekly								Complaints register
12	Traffic &accessibility	Please indicate the number of complaints received/ incidents - Please update the Complaints Register with the new complaints received	Daily/ weekly								Complaints register
13	waste burning	- Please indicate the number of complaints received/ incidents - Please update the Complaints Register with the new complaints received	weekly Daily/ weekly	X					X	X	Photo evidence Complaints register
14	Equipment on-site e fueling	Have you checked the integrity of the impervious layer for the onsite fueling activities? Please provide photo evidence of the site	weekly Daily/ weekly								Photo evidence

15	Utility damage	Plea se indicate the number of complaints received/ incidents - Please update the Complaints Register with the new complaints received	Daily/ weekly								Com plain ts regis ter
16	Chance finds ESMF – Transf or	Have you prohibited the use of equipment associated with high vibration close to the chance-find site? Please provide a copy of the proc	Daily/ weekly								Cop y of the proc edur e
		Have you reviewed permitting procedures? Please provide a copy of the permits	Daily/ weekly								Cop y of the per mits
		Has a guard been assigned to secure the chance find area? Please provide a photo evidence of the site	Daily/ weekly								Phot o evid ence

Appendix 3 Contract Clauses for small Civil Works

The following are standard environmental and social related clauses that should be appended to or incorporated into the contracts for the small civil works. These mitigation measures are the core of a generic, standardized ESMP (Environmental and Social Management Plan) for these types of small works and the typical associated minor impacts which can be routinely addressed with Best Management Practice (BMPs). These clauses are general and may be modified to conform to applicable country specific laws, regulations and contract procedures for such works. These are the mitigation measures which are expected of all professional contractors who are performing civil works, and represent the minimum standard of execution for environmental protection during the execution of such works. (Additional, specific requirements or recommendations may also be forthcoming from statutory permitting agencies or the Ministry of Health, and these can be included as contract clauses as well; and, if an EIA has been conducted for a particular activity due to its environmentally sensitive or complex nature, then the specific recommendations for mitigation measures in that EIA should also be included as contractual requirements).

1. Permits and Approvals

The contractor shall be responsible for ensuring that he or she has all relevant legal approvals and permits required to commence works.

2. Site Security

The contractor shall be responsible for maintaining security over the work site including the protection of stored materials and equipment. In the event of severe weather, the contractor shall secure the work site and associated equipment in such a manner as to protect the site and adjacent areas from consequential damages. This includes the management of stored materials, sanitary wastes, additional strengthening of erosion control and soil stabilization systems and other conditions resulting from contractor activities which may increase the potential for damages.

3. Discovery of Antiquities

If, during the execution of the activities contained in this contract, any material is discovered onsite which may be considered of historical or cultural interest, such as evidence of prior

settlements, native or historical activities, evidence of any existence on a site which may be of cultural significance, all work shall stop and the supervising contracting officer shall be notified immediately. The area in which the material was discovered shall be secured, cordoned off, marked, and the evidence preserved for examination by the local archaeological or cultural authority (National Trust). No item believed to be an artifact must be removed or disturbed by any of the workers. Work may resume, without penalty of prejudice to the contractor upon permission from the contracting officer with any restrictions offered to protect the site. All staff shall be informed of this procedure.

4. Worker Occupational Health and Safety

The contractor shall ensure that all workers operate within a safe environment. Sanitation facilities shall be provided for all site workers. All sanitary wastes generated as a result of project activities shall be managed in a manner approved by the contracting officer and the local authority responsible for public health. The contractor shall ensure that there are basic medical facilities on site and that there are staff trained in basic first aid. Workers must be provided with the necessary protective gear as per their specific tasks such as hard hats, overalls, gloves, goggles, boots, etc. The contractor shall provide the contracting officer with an occupational health and safety plan for approval by the local health authority prior to the commencement of site activities.

The contractor must ensure that all workers operate within a safe environment. All relevant Labour and Occupational Health and Safety regulations must be adhered to ensure worker safety. Sanitary facilities must be provided for all workers on site. Appropriate posting of information within the site must be done to inform workers of key rules and regulations to follow.

5. Noise Control

The contractor shall control noise emissions generated as a result of contracting activities to the extent possible. In the case of site locations where noise disturbance will be a concern, the contractor shall ensure that the equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning and in good repair. Where noise management is a concern, the contractor shall make reasonable efforts to schedule activities during normal working hours (between 8 am and 5 pm). Where noise is likely to pose a risk to the surrounding community either by normal works or working outside of normal working hours or on weekends, the contractor shall inform the contracting officer and shall develop a public notification and noise management plan for approval by the contracting officer.

Specific elements of the noise control activities by the contractor shall include: work activities will occur within specified daylight hours e.g. 8:00 am to 4:00pm; community / public to be informed in advance of any work activities to occur outside of normal working hours or on weekends; sites should be hoarded wherever possible; during operations, the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from residential areas as possible; there will be no excessive idling of vehicles at sites; noise suppression equipment or systems supplied by manufacture will be utilized; ensure all vehicles and equipment are properly serviced; the contractor must develop and implement a public notification and noise management plan.

6. Use and Management of Hazardous Materials, fuels, solvents and petroleum products

The use of any hazardous materials including pesticides, oils, fuels and petroleum products shall conform to the proper use recommendations of the product. Waste hazardous materials and their containers shall be disposed of in a manner approved by the contracting officer. A site management plan will be developed by the contractor if the operation involves the use of these materials to include estimated quantities to be consumed in the process, storage plans, spill control plans, and waste disposal practices to be followed. This plan and the manner of management are subject to the approval of local authority responsible for safety, and waste management, and the contracting officer.

Elements of the hazardous materials management shall include: contractor must provide temporary storage on site of all hazardous or toxic substances in safe containers labeled with details of composition, properties and handling information; the containers of hazardous substances shall be placed in an leak-proof container to prevent spillage and leaching; the wastes shall be transported by specially licensed carriers and disposed in a licensed facility; paints with toxic ingredients or solvents or lead-based paints will not be used; banned chemicals will not be used on any project.

7. Use and Management of Pesticides

Chemicals management

Pesticides and other chemicals, if any, are included in the category of hazardous products and, as such, their use, if provided for in the Contractor's proposed work, may affect the health of

workers. business and local communities. They may affect by: skin contact, ingestion or inhalation. Risks of exposure to chemicals, including pesticides, may occur during transportation, storage, handling, handling, application and disposal of these products. Risks also arise from potential exposure to chemicals (i.e., spray drift, improper disposal and use of packaging and containers). The Contractor must ensure that:

Storage:

ü Store all chemicals, including pesticides, where applicable, in a locked container or magazine that contains sufficient space to capture any spills without contaminating the environment. Stores or other storage locations should be located away from water sources, residential and built-up areas, as well as food and livestock storage areas;

ü Provide spill kits and implement appropriate control measures in the event of a spill;

Handling & Application

ü Insist that the correct Personal Protective Equipment (PPE) (gloves, coveralls, eye protection) for each type of exposure listed in the Material Safety Data Sheet (MSDS) is always worn during handling and the application of chemicals, including pesticides;

ü Require that any mixing and filling of chemical tanks occur in a designated filling area, which should be away from watercourses;

ü Ensure that spills are cleaned up immediately using appropriate spill kits

ü Ensure that the treatment equipment is in good condition and properly calibrated to apply the correct dosage; and

ü Insist that the applications take place under appropriate weather conditions; Avoid rainy weather and windy conditions.

Chemical products including Prohibited Pesticides

ü Do not use chemicals (i.e., contact the UCP's CES, the Plant Protection Directorate and the MTPTC for more information)

ü Do not buy, store, use and exchange pesticides in Class 1a (extremely dangerous) and Class 1b (very dangerous), or Annexes A and B of the Stockholm Convention;

ü Do not use pesticides listed in WHO Hazard Class II (moderately hazardous) unless the Contractor has established appropriate controls for the manufacture, supply or distribution and / or use of these chemicals. Administering of chemicals will be done by registered licensed pest control professionals to minimise and negate any adverse effects to the environment, humans and animals.

8. Use of Preservatives and Paint Substances

All paints and preservatives shall only be used with the approval of the contracting officer. Information shall be provided to the contracting officer who describes the essential components of the materials to be used so that an informed determination can be made as to the potential for environmental effects and suitability can be made. Storage, use, and disposal of excess paints and preservatives shall be managed in conformance with the manufacturers' recommendations and as approved by the contracting officer. The contractor shall provide the contracting officer with a list of materials and estimated quantities to be used, storage, spill control and waste disposal plans to be observed during the execution of the contract. This plan is subject to the approval of the contracting officer.

9. Site Stabilization and Erosion Control

If the site work plans to do excavations the contractor shall implement measures at the site of operations to manage soil erosion through minimization of excavated area and time of exposure of excavated areas, preservation of existing ground cover to the extent possible, provision of approved ground cover. Where excavations are made, contractor shall implement appropriate stabilizing techniques to prevent cave-in or landslide. Measures shall be approved by the contracting officer and the appropriate permitting agency where required.

The contractor must ensure that appropriate erosion control measures such as silt fences are installed. Proper site drainage must be implemented. Any drain clogged by material or sediment must be unclogged as soon as possible to prevent overflow and flooding. The use of retaining structures and planting with deep rooted grasses to retain soil during and after works must be considered. The use of bio-engineering methods must be considered as a measure to reduce erosion and land slippage. Keep angle of slopes within limits of soil type. Balance cut and fill to limit steepness of slopes. All slopes and excavated areas must be monitored for movement.

All materials, including chemicals, must be properly stored. The contractor will establish appropriate erosion and sediment control measures such as hay bales, sedimentation basins, and / or silt fences and traps to prevent sediment from moving off site and causing excessive turbidity in nearby streams, rivers, wetlands, and coastal waters.

If works are along coastal marine areas or near major steams and river, water quality monitoring must be done before works begin, and at regular intervals to determine turbidity levels and other quality parameters. Vehicles and machinery will be washed only in designated areas where runoff will not pollute natural surface water bodies.

10. Air Quality

The following conditions apply to work sites for the control of air quality including dust control:

- Materials such as sand, cement, or other fines should be kept properly covered.
- Cement should be kept stored within a shed or container.
- The sand and fines can be moistened with sprays of water.
- Unpaved, dusty roads should compacted and then wet periodically.
- During interior demolition debris-chutes shall be used above the first floor.
- Demolition debris shall be kept in controlled area and sprayed with water mist to reduce debris dust.
- During pneumatic drilling/wall destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site
- The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust.
- There will be no open burning of debris / waste material at the site.
- There will be no excessive idling of vehicles at work sites.
- The bins of all haulage vehicles transporting aggregate or building materials must be covered on all public roads.

11. Traffic Management

In the event that refurbishment activities should result in the disruption of area transportation services, including temporary loss of roadways, blockages due to deliveries and site related activities, the contractor shall provide the contracting officer with a traffic management plan including a description of the anticipated service disruptions, community information plan, and traffic control strategy to be implemented so as to minimize the impact to the surrounding community. This plan shall consider time of day for planned disruptions, and shall include consideration for alternative access routes, access to essential services such as medical, disaster evacuation, and other critical services. The plan shall be approved by relevant local authority and the contracting officer.

Elements of the traffic management plan to be developed and implemented by contractor shall include: alternative routes to be identified in the instance of extended road works or road blockages; the public to be notified of all disturbance to their normal routes; signposting, warning signs, barriers and traffic diversions must be clearly visible and the public warned of all potential hazards; provision must be made for the safe passages and crossings for all pedestrians where work-related traffic interferes with their normal route; there must be active traffic management by trained and visible staff at the site or along roadways as required to ensure safe and convenient passage for the vehicular and pedestrian public; Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement.

12. Management of Standing Water

Under no circumstances shall the contractor permit the collection of standing water as a consequence of contractor activities without the approval of the contracting officer and consultation with the relevant local environmental health authority. Recommendations from that local authority on how to manage and treat the standing water must be implemented. The condition of the standing water must be monitored by the contractor to ensure that it does not present itself as a breeding ground for any pests such as mosquitoes.

13. Management of Solid Wastes -trash and debris

The contractor shall provide the contracting officer with a solid waste management plan as part of a site waste management plan that conforms to the solid waste management policies and regulations of the relevant Saint Lucia authority. Under no circumstances shall the contractor allow wastes to accumulate to cause a nuisance or health risk due to the propagation of pests and disease vectors. The site waste management plan shall include a description of how wastes will be stored, collected and disposed of in accordance with current law. Additionally, the contractor shall provide for the regular removal and disposal of all site wastes and provide the contracting officer with a schedule for such removal.

14. Management of Liquid Wastes

The contractor shall provide the contracting officer with a liquid waste management plan as part of a site waste management plan that conforms to the waste management policies and regulations of the relevant Saint Lucia authority. Under no circumstances shall the contractor allow liquid wastes to accumulate on or off the site, or to flow over or from the site in an uncontrolled manner or to cause a nuisance or health risk due to its content. The site waste management plan shall

include a description of how these wastes will be stored, collected and disposed of in accordance with current law. Additionally, the contractor shall provide for the regular removal and disposal of all site wastes and provide the contracting officer with a schedule for such removal.

Specific elements of the contractor's liquid waste management plan shall include: contractor to abide by all pertinent waste management and public health laws; waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and refurbishment activities; debris and demolition wastes will be stored in appropriate bins; liquid and chemical wastes will be stored in appropriate containers separated from the general refuse; all waste will be collected and disposed of properly in approved landfills by licensed collectors; the records of waste disposal will be maintained as proof for proper management as designed; whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos); liquid wastes must not be allowed to accumulate on or off the site, or to flow over or from the site in an uncontrolled manner or to cause a nuisance or health risk due to its contents.

15. Special Condition - Management of Medical Wastes during refurbishment works

If the contractor discovers medical wastes, the contractor shall provide the contracting officer with a medical waste management plan as part of a site waste management plan that conforms to the waste management policies and regulations of the relevant Saint Lucia authorities. The plan shall include a description of how these wastes will be stored, collected and disposed of in accordance with current law. The contractor must ensure that all persons handling medical wastes are provided with proper protective clothing. All medical wastes must be secured in specially labelled and sealed containers and disposed of according to relevant local legislation at specified disposal sites. Medical wastes must be kept separate from the other waste streams on site.

The waste management plan provided by the contractor must ensure that all persons handling medical wastes are provided with proper protective clothing. All medical wastes must be treated as hazardous. All medical wastes must be secured in specially labeled and sealed containers separate from other wastes streams. All medical wastes must be disposed of according to relevant local legislation at specified disposal sites.

16. Special Condition - Management of Asbestos during refurbishment works

In the event that during the course of work activities the contractor discovers asbestos as part of the existing site that requires stabilization and removal, the contractor shall contact the relevant local authorities and the contracting officer immediately. If work has already commenced, all

work in the area must stop immediately. An asbestos management plan must be prepared by the contractor and approved by the relevant local health and waste management authorities and the contracting officer describing how this material will be stored, collected and disposed of in accordance with current law, and identifying the approved experienced professional who will undertake this work. The plan must include:

- Description of the issue and extent of contamination
- Site safety measures
- Stabilization techniques to be employed
- Storage and transport plan
- Approved disposal procedure
- Worker awareness and training

In preparing the plan, the contractor should liaise with the relevant local health and waste management agencies to ensure that the adequacy of the measurements being proposed.

Site management shall consist of enclosing relevant sections of the site with appropriate material by the contractor. Where possible the asbestos and its location must be appropriately contained and sealed to minimize exposure, and any asbestos shall be marked clearly as a hazardous material. Sstabilizing friable asbestos will be done prior to removal (if removal is necessary) and it will be treated with a wetting agent to minimize asbestos dust. Asbestos will be handled and disposed by skilled & experienced professionals using appropriate PPE (personal protective equipment) such as respirators and Tyvek suites which will be provisioned to workers to protect them and prevent contamination with asbestos fibres. Respiratory protection together with measures to prevent the contamination of clothing and inadvertent transport of asbestos fiber off-site shall be provided to all exposed workers. If asbestos material is to be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately. Security measures must be implemented against unauthorized removal of asbestos from the site. No removed asbestos will be reused.

Appendix 4 Consultation and Public Disclosure

A Multi stakeholder consultation consisting of public (multiple agencies), private sector and Health NGO's was held to provide an update on the project and solicit feedback on the ESMF

The ESMF will be disclosed on the MOHW website in draft form in June 2019, along with an invitation to provide input and feedback via the email address or telephone numbers provided. Emails and links to the draft document will be provided to key stakeholders to solicit further input.

Multi stakeholder consultation

Chief Health Planner welcome and introduction delivery to participants

Public Sector, Private Sector and other line Ministry representatives

Public Health Nursing Supervisors