

HEALTH CARE NETWORK STRENGTHENING IN GUYANA



**Environmental and Social Assessment and
Environmental and Social Management Plan Framework**

September 2022

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ACRONYMS

A&E	Accidents and Emergency
AoI	Area of Influence
CEO	Chief Executive Officer
C-ESMP	Contractor Environmental and Social Management Plan
CMIP	Coupled Model Inter-Comparison Project
CMO	Chief Medical Officer
CRU	Climatic Research Unit
EAMP	Environmental Assessment and Management Plan
EHO	Environmental Health Officer
EHU	Environmental Health Unit
EPA	Environmental Protection Agency
EPRP	Emergency Preparedness and Response Plan
ESA	Environmental and Social Analysis
ESHS	Environmental, Social, Health and Safety
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESPF	Environmental and Social Policy Framework
ESPS	Environmental and Social Performance Standards
FPIC	Free Prior and Informed Consent
GA	Gender Analysis
GBV	Gender Based Violence
GM&CC	Georgetown Mayor and City Council
GNBS	Guyana National Bureau of Standards
GhG	Greenhouse Gas
GoG	Government of Guyana

GPHC	Georgetown Public Hospital Cooperation
GPL	Guyana Power and Light
GRM	Grievance Redress Mechanism
GTT	Guyana Telephone and Telegraph Company
GWI	Guyana Water Incorporated
HDU	High Dependency Unit
HSDU	Health Sector Development Unit
HSSE	Health, Safety, Security and Environment
ICU	Intensive Care Unit
IDB	Inter-American Development Bank
IHR	International Health Regulations
IPCC	Intergovernmental Panel on Climate Change
ITCZ	Inter Tropical Convergence Zone
LCDS	Low Carbon Development Strategy
LHC	Linden Hospital Complex
LM&TC	Linden Mayor and Town Council
LPC	Linden Power Company
MDGs	Millennium Development Goals
MHPRP	Multi-Hazard Disaster Preparedness and Response Plan
MoH	Ministry of Health
NAM&CC	New Amsterdam Mayor and Town Council
NARH	New Amsterdam Regional Hospital
NDS	National Development Strategy
NIDRMP	National Integrated Disaster Risk Management Plan and Implementation Strategy
OH&S	Occupational Health and Safety
OSHA	Occupational, Safety and Health

PACI	Institutional Capacity Analysis Platform
PAHO	Pan America Health Organization
PAP	Project Affected Parties
PEHO	Principal Environmental Health Officer
PEU	Project Executing Unit
PPE	Personal Protection Equipment
RDC	Regional Democratic Council
REO	Regional Executive Officer
RHAs	Regional Health Authorities
RHO	Regional Democratic Council
SDG	Sustainable Development Goals
SEA	Sexual Exploitation and Abuse
SEP	Stakeholder Engagement Plan
SH	Sexual Harassment
SOP	Standard Operating Procedures
SRES	Special Report on Emissions Scenarios
ToR	Terms of Reference
USEPA	United States Environmental Protection Agency
WHO	World Health Organisation

EXECUTIVE SUMMARY

The Government of Guyana (GoG) is committed to ensuring a modern, world class healthcare system is developed with the aim of not only meeting the needs of citizens and residents, but also to be able to offer medical treatment as an export service through medical tourism.

The Inter-American Development Bank (IDB) has been supporting the Government over the years in the improvement of health care delivery in Guyana. The IDB, through its Social Protection and Health Division, is working with the Government to develop the Health Care Network Strengthening Project. The project aims to improve the health of the Guyanese population through increased access, quality, and efficiency of health services by improving health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals; by extending coverage of diagnostic, medical consultation, and patient management services, inclusive of the country's hinterlands, through digital health; and by increasing the efficiency of the public health system, by strengthening key logistic, management, and support processes and inputs. The project will target infrastructure improvement and expansion in three priority hospitals, namely the Georgetown Public Hospital Corporation, the New Amsterdam Hospital and the Linden Hospital Complex.

The project has three components:

- Component 1 focuses on supporting hospital health services networks;
- Component 2 focuses on strengthening digital health; and
- Component 3 focuses on promoting health sector management and efficiency.

Component 1 includes:

- (i) infrastructure rehabilitation and expansion at the New Amsterdam Hospital, Linden Hospital Complex, and the Georgetown Public Hospital Corporation, considering energy and water efficiency and climate change risk reduction features;
- (ii) purchase of medical equipment and furniture for these and other facilities;
- (iii) services for architectural and engineering design and construction supervision; and
- (iv) corrective and preventive maintenance of infrastructure works and medical equipment and improvement of installed maintenance capacity.

Works will also address specific sector issues such as lack of access to basic utilities (e.g., electricity, water), and inadequate waste management (liquid, solid, medical, hazardous) with consideration for associated facilities to improve operational efficiency (e.g., hydroclaves).

The Project, according to the IDB's classification, is Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction, rehabilitation and operation of the healthcare facilities and associated infrastructure. The project is likely to cause mostly local and short-term negative environmental and associated social impacts for which effective mitigation measures are readily available.

As such, it was determined that an Environmental and Social Analysis (ESA) and Environmental and Social Management Plan (ESMP) framework be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation. It is recognized that Category A projects have been excluded and environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation. Site-specific ESAs/ESMPs will be developed as necessary for renovations of a substantial nature or for any new construction.

During the conduct of the ESA and preparation of the ESMP, some key project details emerged, including the hospitals to be targeted under the project, and some of the likely interventions at each of these facilities, based on their current priority needs. These were taken on board in the conduct of the ESA to provide a better analysis and understanding of the potential impacts of the project.

This ESA and ESMP framework aims at identifying potential environmental, social, health and safety risks associated with the implementation of the project, and developing recommendations to mitigate and manage such risks.

The project activities are expected to comply with all national policies and plans, legislation and guidelines, especially those relating to the environment, social, health and safety. The project will also have to comply with the IDB's Environmental and Social Policy Framework (ESPF), and the associated Environmental and Social Performance Standards (ESPS) relevant to the project. The Ministry of Health will have direct oversight of the project and the Health Sector Development Unit will manage the project implementation. The contractors will be required to have as part of their project team an Environmental, Social, Health and Safety (ESHS) Personnel who will be required to ensure the environmental measures set out in the ESMP are implemented. Construction will be overseen by Supervisory Consultants who are also expected to have ESHS personnel as part of their team.

During the ESA and ESMP framework preparation process engagements were conducted with key stakeholders. The general feedback is that hospitals which are to benefit from the project interventions are eagerly awaiting the implementation of the project since it will result in improvements in their delivery of health care services and other benefits. Significant improvements are required at these facilities to adequately serve the current and future demand. Each hospital identified their priority needs which they hope the project will support. From the disclosure process and stakeholder consultations, there were no significant concerns raised by stakeholders as it relates to the project. However, recommendations were provided for measures to be implemented to prevent and reduce ESHS impacts and to take into consideration differently abled persons. These are included in the ESA and ESMP framework.

This ESA and ESMP framework assessed the potential impacts of project activities across the various components of the project, including operational impacts. Most of the impacts will occur during the construction phase and are short term, localized, and are low to medium risks. Most of the direct impacts will occur within the hospitals environment itself. Impacts relating to the wider community are mainly related to the disruption of services at the hospitals during the construction period. Impacts during the operational phase are limited to areas such as waste management and safety. Only one High Risk was identified and this relates to the disruption of services. Importantly, no Critical Risks were identified to be associated with pre-mitigation impacts of the project. The key environmental, social, health and safety impacts of the proposed project are:

- Dust nuisance
- Noise generation
- Workers health and safety
- Safety of hospital staff, patients and visitors
- Disruption of hospital services, reduction in parking areas, and relocation of a day care center.

In addition, a qualitative Disaster Risk Assessment was conducted, with flooding being identified as a risk to likely affect the areas where the hospitals are located. According to the Bank, the project has been classified as disaster risk (Type 1 and 2), moderate due primarily to natural hazards, mainly flooding, which can also be caused/exacerbated by climate change (e.g., increased precipitation events) which are likely to occur or already exist.

It should be noted that during the stakeholder engagement, personnel from the hospitals indicated that they are aware of the potential impacts such as construction related noise or dust, and disruption to hospital services and that the hospitals will evaluate the works to be done and develop and implement a comprehensive approach to ensure the safety of patients, visitors and hospital staff and mitigate the disruption of services. No impact to the biological environment is foreseen since all project activities will occur within the existing hospitals compound.

Several potential positive impacts from the implementation of the project were also identified since it will improve the delivery of health care to the target population, and the country as a whole. It will also improve practices at these institutions. Other measures such as those relating to energy and water efficiency, climate change disaster risk reduction features and equipment that reduces greenhouse gas (GhG) emissions will also be incorporated, thus improving from the current situation. The project will also provide temporary employment for persons from local communities.

Although the project scope is not yet finalized, there is a good sense of the likely project interventions. A comprehensive ESMP framework has been prepared outlining the measures which should be implemented during the planning, construction and operational phases of the project to mitigate and manage the ESHS risks.

In addition, measures to maximise the positive impacts of the project were also identified. Further, provisions have been made and guidance provided for detailed management measures to be determined and implemented during the pre-construction and construction phases, and as part of the Contractor Environmental and Social Management Plan (CESMP) which is to be prepared and implemented by contractors working on the various aspects of the project. Measures are included for the mitigation of the following:

- Dust and noise suppression
- Protection of water quality
- Collection and disposal of waste to be generated including construction waste, biomedical waste, etc.
- Handling and storage of fuel and other hazardous materials
- Measures to address the disruption of hospital services
- Health and safety measures for workers
- Measures to ensure the safety of the public, including staff, patients and visitors to the hospital.

The measures outlined in the ESMP framework should be communicated early in the process to the contractors so these can be addressed prior and during construction. The contractors should be required to provide the necessary awareness to workers to ensure they are aware of their responsibilities in ensuring compliance. The work sites should be monitored for non-compliance and corrective actions are to be implemented promptly. Environmental monitoring should also be done by the contractors, and they should be required to implement an Emergency Response Plan (ERP).

Prior and during project implementation it is recommended that the stakeholders be kept informed on the project and the progress of works. As such, a Stakeholder Engagement Plan (SEP) is prepared and is included as part of the management framework for the project and allowed the opportunity to provide feedback and recommendations. This is especially important within the hospitals setting. In addition, a Grievance Redress Mechanism (GRM) is also included so as to enable any stakeholder who may have an issue with the project or project related activities to have it addressed in an understandable, transparent and fair process.

Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential project impacts are prevented or

reduced. Importantly, the contractors should prepare the CESMP and the implementation of this plan should be stringently monitored by the Ministry of Health and the Supervisory Consultants.

Once the recommended measures are implemented during the project execution it is envisaged that any potential adverse impacts will be prevented or reduced, thereby enabling the project to positively benefit the environment and the population in the regions where the hospitals are located. As such, the project has been welcomed by all stakeholders engaged during the ESA and ESMP framework preparation, including during the disclosure process.

1.0 INTRODUCTION

1.1 Overview

Healthcare and medical facilities in Guyana are provided by both the public and private sectors. The country operates a universal healthcare system, that is, every citizen, resident, and visitor to Guyana has access to the system's facilities and services. Guyana continues to advance efforts to improve the standard of health care and this is reflected in increased life expectancy; reduction in maternal and child mortality; decreased incidence, prevalence and mortality from communicable diseases; high levels of immunization coverage; greater awareness of environmental health issues; and improved water and sanitation facilities. The Ministry of Health is mandated to ensure effective policy formulation, regulation, coordination, monitoring and evaluation of the health sector. Service delivery is provided through 5 levels of care - from health posts to national level facilities.

The Government of Guyana (GoG) is committed to ensuring a modern, world class healthcare system is developed. In doing so the GoG plans to leverage existing and soon to be built public healthcare facilities, private investment, as well as public-private partnerships in the sector, with the aim of not only meeting the needs of our citizens and residents, but also to be able to offer medical treatment as an export service through medical tourism¹. The 2022 budget incorporates financing for improvements to primary level care infrastructure and to initiate construction of four general hospitals and one specialty hospital, as well as replacement of four existing hospitals.

The Inter-American Development Bank (IDB) has been supporting the GoG over the years in the improvement of health care delivery in Guyana. The IDB, through its Social Protection and Health Division, is working with the GoG to develop the Health Care Network Strengthening Project. The GoG has requested that the project focus on infrastructure improvement and expansion in three priority hospitals that have benefited from investments under previous IDB supported projects, namely the Georgetown Public Hospital Corporation, the New Amsterdam Hospital and the Linden Hospital Complex.

The objective of the project is to improve the health of the Guyanese population through increased access, quality, and efficiency of health services. The project has three components, which are outlined below:

1. Component 1. Supporting hospital health services networks
2. Component 2. Strengthening digital health
3. Component 3. Promoting health sector management and efficiency

1.2 Background to the ESA-ESMP Framework Preparation

Component 1 of the project focuses on supporting hospital health services networks and includes:²

- (v) infrastructure rehabilitation and expansion at the New Amsterdam Regional Hospital (NARH), Linden Hospital Complex (LHC), and the Georgetown Public Hospital Corporation (GPHC), considering energy and water efficiency and climate change risk reduction features, as well as accessibility provisions for disabled persons;
- (vi) purchase of medical equipment and furniture for these and other facilities;
- (vii) services for architectural and engineering design and construction supervision; and
- (viii) equipment inventory, corrective and preventive maintenance of infrastructure works and medical equipment and improvement of installed maintenance capacity.

¹ Ministry of Finance - Budget Speech 2022, pg 47

² Sourced from Proposal for Operation Development (POD) for the Health Care Network Strengthening in Guyana Project (GY-L1080)

The project has been classified by the IDB as Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction, rehabilitation and operation of healthcare facilities and associated infrastructure mainly associated with Component 1. Under this classification, the project is not likely to generate any significant environmental or social impact through the application of effective mitigation measures and the application of the Bank's safeguards measures. As such, in accordance with the Bank's new Environmental and Social Policy Framework (ESPF) and associated standards (ESPS), an Environmental and Social Management System (ESMS), and an Environment and Social Assessment (ESA) and related Environmental and Social Management Plan (ESMP) framework are to be prepared. The ESA and ESMP framework is required to identify potential social and environmental impacts of the project and ways to mitigate those impact at each phase of the programme. In addition to the ESA and ESMP framework a Stakeholder Engagement Plan (SEP) is to be prepared. It is recognized that Category A projects have been excluded and environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation. Site-specific ESAs/ESMPs will be developed as necessary for renovations of a substantial nature or for any new construction.

The IDB's Social Protection and Health Division has engaged a consultant to prepare the ESMS and ESA/ESMP framework for the project.

1.3 Objectives and Scope of the ESA and ESMP Framework

The project was designated Category B under the Bank's impact classification, which suggests that its implementation will cause mostly local and short-term negative environmental or social impacts and for which effective mitigation measures are known and readily available. The ESA and ESMP framework aims to investigate and provide guidance on the potential impacts of the project's implementation, and advice on mitigation measures. Importantly, it intends to satisfy the requirements of the Bank's ESPS.

The ESA and ESMP framework seeks to:

- Present a description of the project including activities, locations, etc.
- Assess the policy, regulatory and institutional framework for the project, including identifying the relevant national and international policies, legislation, standards and guidelines, including the IDB's ESPF, which define the implementation framework of the project, as well as the responsible institutions.
- Assemble relevant physical and social baseline information on the project areas.
- Identify and engage with key project stakeholders, and present and address their feedback and concerns, including the project beneficiary communities.
- Identify and assess the potential impacts of the project on the physical, biological and socioeconomic environment, distinguishing construction and post construction phases impacts.
- Recommend measures to prevent or reduce adverse impacts to acceptable levels for both the construction and operational phases of the project.
- Prepare an Implementation Framework for the ESMP, including outlining roles and responsibilities, contractor plans, monitoring and reporting requirements, stakeholders' engagement, grievances mechanism, training, etc.

The SEP component has been incorporated into the ESMP and has reflected the stakeholder engagement conducted to date, including the public disclosure process for the draft ESA and ESMP framework.

It should be noted that the ESA/ESMP framework has adopted a generic/high level approach to accommodate all three of the facilities under consideration and given the limited availability of project details at the time of preparing the ESA and ESMP.

1.4 Methodology

The ESA and ESMP framework was prepared in accordance with the Terms of Reference (ToR) for the consultancy, and in fulfillment of the Bank's ESPF and ESPS. Preparation was also guided by the IDB's guidelines for the conduct of ESA and other relevant environmental and social guidance which were shared along with the ToR. In an effort to ensure the national requirements are satisfied, the conduct of the ESA and preparation of the ESMP was also guided by the Environmental Protection Agency (EPA) Guidelines for the Preparation of Environmental Assessments and Management Plans.

At the commencement of the ESA and ESMP framework preparation process meetings were held with key project personnel from the IDB including the environmental and social specialist to gain an understanding of the programme, the key deliverables to be prepared, and the areas to be addressed. A review of the Bank's ESPS and other guidelines was also done to better understand the requirements.

During the same period meetings were also held with key personnel from the Ministry of Health to discuss the project, its implementation, and the environmental, social, health and safety management systems existing at the Ministry.

A desktop review was conducted on the available literature regarding the health sector in Guyana with specific emphasis on the three targeted hospitals. A review was also conducted on the policies, strategies, legislation and international conventions and obligations of the GoG.

Thereafter, the preparation of the ESA and ESMP Framework preparation was undertaken in three principal phases:

- Phase 1 – Establishing the baseline and stakeholder engagement,
- Phase 2 – Review of project information and impact identification and analyses, and
- Phase 3 – Mitigation and management planning.

For the conduct of the ESA and preparation of the ESMP it was essential to have a clear understanding of the Area of Influence (AoI) of the project. The primary AoI of the project is defined as the footprint of the hospitals, essentially the boundaries of the facility, and a 50 meter fringe in all directions around each hospital. The secondary AoI encompasses the area considered as the catchment of each facility, including the wider community around the hospitals and by extension the Administrative Regions within which the hospitals are located.

Phase 1: Establishing the Baseline and Stakeholder Engagement

Phase 1 of the methodology involved establishing baseline information relating to the project. This was collected during the process of the desktop review, site visits, key stakeholder feedback, and the collection of images and geographical coordinates.

Site visits were conducted to all three of the hospitals. During the site visits specific information regarding the hospitals was collected, such as the current situation, the priority needs, situation of the

lands and other areas earmarked for project intervention, flood risk and drainage of the sites, competing and surrounding land uses, availability of utility services, etc.

A stakeholder mapping process was undertaken to identify the stakeholders relevant to the project who should be engaged during the conduct of the ESA. During the site visits to each facility, engagements were done with the key stakeholders of the respective hospitals. The stakeholder feedback process was used to discuss the project with the key stakeholders, including receiving information on specific needs and priorities, gauge their perception of the project, their expectations, their concerns and recommendations. The engagement also provided information on the surrounding communities.

The project sites were photographed and geographical coordinates collected.

Phase 2: Review of Information, Identification of Impact, and Impact Analysis

Based on feedback from stakeholders, observations during the site visits and review of available secondary sources of information, potential impacts of the project were assessed by establishing the potential interactions between the anticipated project activities and the characteristics of the existing environmental and social settings. Short-term and long-term impacts, positive and negative impacts, localised, local and regional impacts, and direct and indirect impacts were identified. The risks associated with these impacts were also assessed and are based on the significance and likelihood of the impacts occurring.

Phase 3: Mitigation and Management Planning

During the site visits, representatives of the hospitals provided recommendations on measures which may be implemented to manage and mitigate potential impacts which can arise during the implementation of the project, during both the construction and operation phases. Mitigation and management planning was then conducted to identify additional feasible and practical measures to reduce and mitigate the potential negative impacts, as well as to maximise the positive impacts. Best practices consistent with the Bank's ESPF were also incorporated in the mitigation and management plan. In addition, procedures to be undertaken in the event of an emergency situation were examined and documented, and a framework was proposed to monitor and assess the effectiveness of the mitigation measures.

Stakeholder Engagement and Disclosure of Draft ESA and ESMP framework

The draft ESA and ESMP framework, inclusive of the SEP and GRM, having been determined to be fit for disclosure by the IDB, was posted on the Ministry of Health website and Facebook page. A stakeholder consultation session was held via the ZOOM platform on August 26, 2022 at 10:00hrs. The ZOOM platform was chosen as the most efficient method of disclosure since it enabled participants from the different project locations and project areas of influence to be engaged and involved at the same time. This was also a measure of ensuring the safety of participants in preventing the spread of COVID 19. The report from the stakeholder consultation session is included as Appendix D.

1.5 Organization of the ESA and ESMP Framework

The document is organized as outlined below:

- **Executive Summary** – This presents a brief description of the ESA and ESMP Framework including the key impacts and the management and mitigation measures recommended.

- **Chapter 1: Introduction** - This Chapter provides an introduction to the project, background information, and the aims and objectives of the ESA and ESMP Framework.
- **Chapter 2: Project Description** - This Chapter provides information on the project, including its components and subcomponents, as well as the projected outcome of the project.
- **Chapter 3: Policies, Legislative and Institutional Framework** - This Chapter provides a description of the national policies, the various legislation, international and regional policies and agreements, IDB safeguards and national institutions which are relevant to the implementation of the project.
- **Chapter 4: Project Environment** – This Chapter provides a description of the baseline conditions, including the physical, biological and socio-economic settings of the project.
- **Chapter 5: Summary of Findings from Site Visits and Stakeholder Engagements** – This Chapter presents a summary of the findings of the field visits to hospitals identified for project intervention and also summarizes stakeholder engagement during the conduct of the ESA. In addition, the public disclosure process for the draft ESA and ESMP framework are described in this Chapter.
- **Chapter 6: Impact Assessment** – This Chapter assesses the potential environmental and social impacts of the project.
- **Chapter 7: Environmental and Social Management Plan** – This Chapter presents measures to manage and mitigate potential impacts of the project as well as measures to respond to any emergencies which may occur during project implementation. Recommendations are included for the design, construction and operation phases.
- **Chapter 8: ESMP Implementation Framework** – This Chapter outlines the framework for implementation of the ESMP, including roles and responsibilities, monitoring activities to be undertaken to determine compliance with the environmental and safety requirements as well as to determine the effectiveness of the mitigation and management measures. Importantly, this chapter includes the Stakeholder Engagement Plan, a key deliverable for the project, as well as a mechanism to address grievances.
- **Conclusion**
- **References**
- **Appendices**

2.0 PROJECT DESCRIPTION

2.1 Project Aim and Objectives³

The Health Care Network Strengthening in Guyana project is being supported by the IDB through a Sector Conditional Credit Line for Investment Projects (CCLIP). The objective of the project is to improve the health of the Guyanese population through increased access, quality, and efficiency of health services. The specific objectives of the first operation are:

- i. improve health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals;
- ii. extend coverage of diagnostic, medical consultation, and patient management services, inclusive of the country's hinterlands, through digital health; and
- iii. increase the efficiency of the public health system, by strengthening key logistic, management, and support processes and inputs.

The project is estimated to cost US\$60 Million and will be implemented by the Ministry of Health.

2.2 Project Components⁴

The Health Care Network Strengthening in Guyana project has three components. These are described below:

- **Component 1. Supporting hospital health services networks (US\$48 million).** This component will finance inputs to allow the hospital network to function more efficiently by expanding capacity at two strategic level four hospitals, thereby relieving pressure on the main national reference hospital (level 5) to provide lower-complexity services, while also increasing the ability of this facility to fulfill its mission in handling specialty referral cases. The activities to be funded by this component include:
 - i. infrastructure rehabilitation and expansion at the New Amsterdam Regional Hospital (NARH) (level 4), Linden Hospital Complex (LHC) (level 4), and the Georgetown Public Hospital Corporation (GPHC) (level 5), considering energy and water efficiency and climate change risk reduction features;
 - ii. purchase of essential medical equipment and furniture for these facilities;
 - iii. services for architectural and engineering design and construction supervision; and
 - iv. equipment inventorying, corrective and preventive maintenance of infrastructure works and medical equipment and improvement of installed maintenance capacity.
- **Component 2. Strengthening digital health (US\$7.2 million).** Given the success of the MoH telemedicine initiatives and the further potential that they and other digital health interventions show for innovation, this component will ensure financing for the country's plans for a digital transformation in health. It will finance the following priority areas:
 - i. digital health governance and sustainability (assessments of preparedness, national strategy and budget, and digital health foundations: core team, architecture, data privacy norms, cybersecurity, interoperability guidelines, electronic health record strategy, telehealth strategy and norms, change management strategy, total cost of ownership);

³ Sourced from Proposal for Operation Development (POD) for the Health Care Network Strengthening in Guyana Project (GY-L1080)

⁴ Ibid

- ii. strengthening and expansion of the current teleradiology and teleophthalmology networks, plus other telemedicine services (tele-therapy, triage), to the country's hinterland areas, including its socio-cultural adaptations;
 - iii. telehealth infrastructure and connectivity;
 - iv. preparedness for the selection and implementation of an electronic health record system; and
 - v. software maintenance and support. Digital health can reduce the emissions of greenhouse gasses by reducing travel for health care and hardware purchases will follow best practices to reduce Information and Communication Technology emissions.
- **Component 3. Promoting health sector management and efficiency (US\$3 million).** The National Strategic Plan for Health targets several key parts of the health system that promote improved quality and efficiency in the delivery of health services, and this component will support the following areas and specific activities:
- i. human resource quality and availability (allied health professional assessment, including current supply, gaps, and projected demand; stock-taking of existing training capacity; curricula review and improvement, including socio-cultural dimensions in health; proposal for addressing sector's Human Resources needs, considering training center that could be financed in second operation);
 - ii. supply chain management (expansion of warehouse capacity; software and hardware for electronic supply chain management system; training of staff in supply chain management);
 - iii. pandemic and emergency preparedness (analysis of COVID-19 response, Emergency Operations Center plan, simulation exercises, laboratory equipment and diagnostic tests procurement, and biosafety/biosecurity assessments); and
 - iv. essential services package for maternal and child health (laboratory and medical equipment, maternal waiting homes, community health committees set-up and training).

In addition to the three project components described above, the project will also support project administration and program monitoring and evaluation at a cost of US\$1.8 million. These resources will support the MoH in program management and assessment of its effects. It will finance specialized consulting services for project implementation, costs associated with the Project Executing Unit (PEU), and evaluations of project implementation and impact.

2.3 Programme Activities

This ESA and ESMP framework focuses on interventions to be undertaken under Component 1 of the project. The hospitals to benefit are the Georgetown Public Hospital Corporation, the New Amsterdam Hospital and the Linden Hospital Complex. The locations of the three hospitals are shown in Figure 2-1. The interventions will vary by hospitals, depending on their priority, but will most likely involve the rehabilitation, expansion and repurposing of the existing buildings and construction of additional buildings. The priorities identified for each of the hospitals are presented in Chapter 5.

At the time of preparation of this ESA and ESMP framework all of the specific interventions for each of the three hospitals have not been determined, although the priorities have been identified. Although a draft Design Brief has been prepared, the actual design of the facilities are not yet available.

This ESA and ESMP framework aims at identifying potential environmental, social, health and safety risks associated with the implementation of the project, and developing recommendations to mitigate and manage such risks as well as offering guidance on site specific social and environmental assessments, consultation and stakeholder engagement specific to the sites and scope of works as well as supervision and reporting requirements.

All construction works will be carried out by contractors, recruited through a competitive bidding process and under contract to the MoH. Once the contract has been signed and the contractors are given possession of the site, the contractor will be legally responsible for the performance of the works in the manner required by the contract. The works will be overseen by supervisory consultants and the Health Sector Development Unit (HSDU) of the MoH.

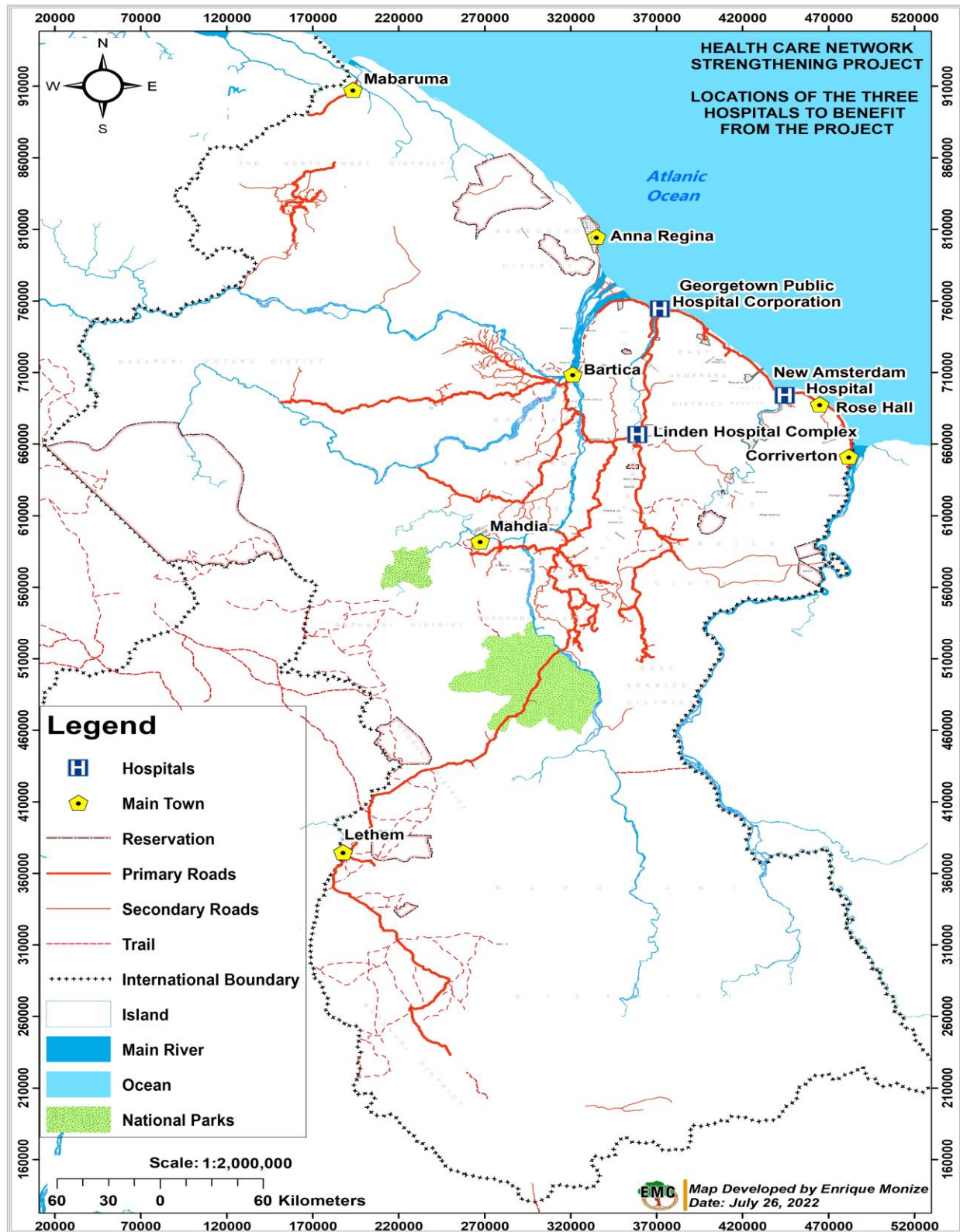


Figure 2-1: Locations of the Targeted Hospitals which are to Benefit from the Project

2.4 Project Alternatives

As part of the ESA process, alternatives pertaining to the project were examined. The alternatives considered are:

1. No Project Alternative
2. Use of Alternative Source of Funding
3. Construction of New Hospital instead of Improving the Existing Hospitals
4. Alternative Interventions/Designs

2.4.1 No Project Alternative

The project is expected to improve access, use, and quality of health services in Guyana. The three hospitals benefiting from the project have a catchment population of around 315,000 persons, nearly 40% of the entire population⁵. This population will have greater access to improved clinical and diagnostic services, and benefit from higher quality health care. The project will support interventions that will:

- increase the number of consultations and examinations provided at the primary level of care;
- increase referrals to district and regional hospitals for consultations, examinations and/or procedures that require a more specialized level of care;
- increase access to radiology and ophthalmology services; and
- ensure the continuous availability of key medicines, inputs, and supplies in health facilities.

In addition, the project will address gaps and deficits at the three hospitals. The GPHC is the main national referral hospital in the country (level 5),⁶ as well as the premier medical teaching and research facility. It also functions as the Regional Hospital for Region 4 – Demerara - Mahaica and the District Hospital for Georgetown. Several improvements to the hospital infrastructure are necessary to overcome gaps relating to capacity, quality, and growing demand for specialist services. Inpatient bed supply is inadequate, with some wards consistently experiencing over 100% occupancy rates. The general Intensive Care Unit (ICU) has only seven beds, and specialized ICUs and high dependency units frequently have waiting lists. As a shift progresses to more sophisticated minimally invasive surgery techniques and noninvasive procedures, the lack of specific outpatient day recovery beds is becoming an important limitation. The main operating theater currently has just six suites, which is insufficient to attend to the growing quantity of elective surgeries requested by an expanded array of medical specialists. The accident and emergency department has a bed assignment that covers merely 50% of demand and no areas for pediatric and psychological examination and isolation. Additional physical deficiencies exist in laboratory, pharmacy, imaging, and support services (administration, warehousing, and staff environments). Over the years, in the absence of a master plan, the spontaneous addition of services in improvised infrastructure and settings on the GPHC campus has created a situation of improper patient flows, supply provision, and medical waste disposal, in which transfers occur in the open environment and sometimes across public thoroughfares. This generates risk for accidents and cross-contamination. In the most extreme cases, such as the maternity ward, wood buildings from the 19th century at GPHC are still operational and represent fire hazards due to faulty electrical installations.

Similar situations exist at both the New Amsterdam Hospital and the Linden Hospital Complex. The New Amsterdam Hospital is the second largest hospital after GPHC, and along with the Linden Hospital Complex, serve a significant catchment area, including receiving patients from other regions

⁵ Proposal for Operation Development (POD) for the Health Care Network Strengthening in Guyana Project (GY-L1080)

⁶ There are five levels of health facilities by level of service complexity: health posts (level 1), health centers (level 2), district hospitals (level 3), regional hospitals (level 4), and reference hospitals (level 5). In practice, facilities often provide services below their indicated level and may not have capacity to deliver the full array of services that they should.

and the hinterland. Both hospitals possess limited capacity in their accident and emergency departments, intensive care units, high dependency units, surgical suites, and imaging departments. Moreover, New Amsterdam was constructed nearly twenty years ago and has undergone minimal renovation and expansion since then. It lacks sufficient installations for outpatient clinics, inpatient wards, and the pathology laboratory and has no buildings to house a central sterilization unit, administration, and medical and paramedical staff on call. The Linden Hospital Complex is unable to properly deliver the full contingent of obstetric, neonatal and child health services. It also does not have a burn unit to attend to accident patients. Strengthening these regional hospitals to provide the full contingent of level 4 services will also reduce the transfer of patients to the GPHC, thus reducing the patient load of that hospital.

The hospitals also currently have challenges regarding environmental management and safety, including infectious and liquid waste management, lack of established safety procedures, systems and equipment, etc.

The project is intended to address the issues outlined above at the three health facilities. It will improve the delivery of health care to the target population, and the country as a whole. It will also improve environmental, social, health and safety practices at these institutions. Other measures such as those relating to energy and water efficiency, climate change disaster risk reduction features and equipment that reduces GHG emissions can also be incorporated, thus improving from the current situation.

During the project implementation, there are expected to be some impacts during the construction and installation of facilities. Potential construction related impacts include disruption of services, dust and noise nuisance and health and safety risks. Land, which is already within the existing facilities compound would be lost to project infrastructure, including parking areas at GPHC, and the area being utilized for a Day Care Center at the Linden Hospital Complex. During the operation phase there will be increased user traffic and waste generation. However, the potential adverse impacts of the project are mostly short-term, localised, and can be avoided or mitigated during both the construction and operations phases of the project with the implementation of the recommended mitigation measures.

The 'No Project' scenario will result in the status quo being maintained, and as such, the project benefits will not be realized. The facilities will remain in a situation where they are unable to fully serve the catchment areas and the country as a whole will not be able to provide adequate health care to the population. The improvements relating to the environmental, social, health and safety systems will also not be realized. However, the impacts relating to the construction phase will be avoided, including the disruption of services, land take, loss of parking areas, dust and noise nuisance and health and safety risks.

2.4.2 Use of Alternative Funding

The GoG has been working on the improvement in the delivery of health care in the country as a commitment to ensuring a modern, world class healthcare system is developed. A National Strategic Plan for Health 2022-2030 is being developed which intends to promote a model based on the principles of Primary Health Care through an Integrated Health Service Delivery Network approach to achieve universal access and coverage. Essential functions include healthcare delivery model, governance, financing, human resources, delivery of services, evidence informed decision making, supply chain, emergency preparedness, strategic partnerships, occupational safety and health, and preferred health programs and health determinants. To address other key areas for improvement, the MoH is preparing a Health Infrastructure Transformation Plan and a Human Resource Development Plan.

The GoG has commenced implementation of aspects of these plans and strategic priorities. The 2022 national budget incorporates financing for improvements to primary level care infrastructure (levels 1

and 2,) and to initiate construction of four general hospitals and one specialty hospital, as well as replacement of four existing hospitals (levels 3 and 4).

To contribute to these strategies and plans, the GoG requested the IDB support for the areas of investment targeted under this project, which is, to focus on infrastructure improvement and expansion in three priority hospitals that have benefited from investments under previous IDB projects. Given the importance of these facilities in the delivery of health care nationally, and the improvement required to adequately serve the population, if the project is not supported by the IDB, it is very likely that GoG will explore alternative funding options to implement the project. The need to have the improvements done at these facilities were emphasized by personnel from the MoH and all three of the hospitals during the stakeholder engagement process for this ESA and ESMP preparation. As such, the GoG may explore funding from other partners, or utilize GoG resources which is being boosted by earnings from the oil and gas sector.

2.4.3 Construction of New Facilities

The funding to support the infrastructure improvement at the three hospitals may instead be utilized for the construction of new health facilities. This will avoid the possible disruption to services during the works to be conducted at the existing facilities, and allow for better planned facilities which will improve the delivery of services and better patient flow. It will also allow for an avoidance of environmental, social and safety risks which may be associated with construction works at the existing hospitals.

As part of its efforts to improve health care, the GoG has already planned the construction of new facilities, and has specifically requested the IDB support to improve the three existing hospitals. In addition, new facilities will require much more funding and land take, and the benefits may take longer to be derived.

2.4.4 Alternative Interventions/Designs

At the time of preparation of this ESA and ESMP framework all of the specific interventions for each of the three hospitals have not been determined, although the priorities have been identified. As such, it is unlikely that any interventions will be considered which are outside the priorities identified for each facility.

In addition, although a draft Design Brief has been prepared, the actual designs of the facilities are not yet available. As such, an assessment of the design could not be done. Nevertheless, it is recommended that the design for the interventions at each of the facility takes into consideration energy efficiency, climate resilience and use of renewal energy sources.

3.0 POLICY, LEGISLATIVE AND INSTITUTIONAL FRAMEWORK

The Health Care Network Strengthening Project will finance the infrastructure works at three of the main existing public hospitals in Guyana. This chapter provides an overview of the policies, legislation and institutions that constitute the enabling environment of the project. These are outlined in Table 3-1 below. The chapter also examines the relevant environmental and social safeguards of the IDB.

Table 3-1: Relevant Policies, Legislation and Institutions

National Policies, Strategies, and Plans	National Development Strategy
	Guyana Low Carbon Development Strategy 2030
	Health Vision 2020: A National Health Strategy for Guyana 2013 – 2020
	National Mental Health Action Plan 2015-2020
	Disaster Risk Management
Legislative Framework	The Constitution of the Cooperative Republic of Guyana
	Environmental Protection Act (1996)
	Environmental Protection Air Quality Regulations (2000)
	Environmental Protection Water Quality Regulations (2000)
	Environmental Protection Noise Management Regulations (2000)
	Environmental Protection Hazardous Wastes Management Regulations (2000)
	Environmental Protection (Litter Enforcement) Regulations (2013)
	EPA Guidelines for Environmental Management Plans
	Public Health Ordinance (1934)
	Ministry of Health Act (2005)
	Regional Health Authorities Act (2005)
	Health Facilities Licensing Act (2007)
	Health Facilities Licensing Regulations (2008)
	Medical Practitioners Act (1991)
	Medical Practitioners (Code of Conduct and Standards of Practice) Regulation (2008)
	Water and Sewerage Act (2002)
	Occupational Health and Safety Act (1997)
	Labour Act (1942) Amended in 1997
	Persons with Disabilities Act 2010
	Prevention of Discrimination Act 1997
	Employment of Young Persons and Children Act 1938 (Amended 1999)
	The Sexual Offences Act 2010 (Amended 2013)
National Guidelines	EPA Guidelines
	GNBS Guidelines
International Conventions and Agreements	United Nations Sustainable Development Goals
	International Health Regulations
IDB Guidelines	IDB Environmental and Social Policy Framework
Institutional Framework	Ministry of Health
	Environmental Protection Agency
	Central Board of Health
	Regional Agencies

	Regional Democratic Councils
	Georgetown Public Hospital Corporation
	City Council and Town Councils

3.1 National Policies, Strategies and Plans

3.1.1 National Development Strategy 2001 -2010

The National Development Strategy (NDS) 2001-2010 was developed as a multi-pronged approach to guiding the development of Guyana over a ten-year period. The objectives of the NDS are:

1. To attain the highest rates of economic growth that are possible
2. To eliminate poverty in Guyana
3. To achieve geographical unity
4. To attain an equitable geographical distribution of economic activity
5. To diversity the economy

The objectives of the NDS as it relates to the health sector are to increase the length of healthy life for all people in Guyana, and to reduce health disparities among social groups. This can be furthered by improve the population's access to health care and the quality of the care that is offered, while ensuring that the health services are provided cost-effectively.

In addition, Volume 3, Chapter 19 of the NDS considers development in areas of (a) Administration and management, (b) Regional Health Authorities, (c) Human Resources, (d) Health Programmes, (e) Facilities and Services, (f) Financing, (G) Vulnerable Groups, and (h) Fees for patients bypassing the vulnerable groups.

Access to and increased availability to health services are of specific interest to the NDS and its success. The successful implementation of the NDS in relation to the health sector hinges on responsiveness to the needs of the people and preferences of the clientele at all levels of the delivery system.

3.1.2 Low Carbon Development Strategy 2030⁷

The Guyana Low Carbon Development Strategy (LCDS) 2030 was developed to create a new low carbon economy by harnessing Guyana's unique advantage of enhanced capacity. The LCDS 2030 will create a new low-carbon economy in Guyana by establishing incentives which values the world ecosystem services, and promote these as essential components of a new model of global development with sustainability at its core. This will allow Guyana to harness the value of the country's ecosystem services to build a long-term, low-carbon diverse opportunity.

There are four objectives of the LCDS 2030, which provide guidance on the implementation and advancement of the Strategy's goal. These are:

1. Forest Climate Services and other Ecosystem Services
2. Stimulate future growth through clean energy and sustainable economic activities
3. Protect against climate change
4. Align with global climate goals

The LCDS 2030 addresses improved quality of healthcare services, as is outlined in Chapter 4. The LCDS outlines the following focus areas with respect to improving the quality of healthcare services:

⁷ GoG. 2021. LCDS 2030 – Draft for Consultation

1. Sufficient numbers of highly trained medical personnel to service a low-carbon economy;
2. Modern and upgraded facilities and equipment to facilitate accurate diagnosis, treatment, and care;
3. Efficient management systems, data and information storage and retrieval, including cloud or offsite back up storage of records in the event of site destruction or damage due to fires, floods or other means; and
4. Effective, quality medication—appropriately stored, delivered and administered in a timely manner.

In addition to the enhancement of the healthcare systems, Chapter 5 of the LCDS 2030 makes provision for the adaptability of public health to climate change as a measure to reduce climate change related diseases such as incidence of vector and waterborne diseases, including malaria, dengue and chikungunya. This will be achieved by supporting:

1. Improving public health adaptation infrastructure;
2. Improving planning and response capability of the health sector to climate-related impacts; and
3. Developing and implementing programmes to tackle climate-related illnesses.

The LCDS will support improving Guyana's public health adaptation infrastructure; planning and response capability of the health sector to climate-related impacts; and developing and implementing programmes to tackle climate-related illnesses. By achieving these objectives, the LCDS 2030 will boost and promote disaster risk preparedness and management capacity of the health sector; quicker recovery from extreme weather-related events like floods; better access to clean water and sanitation facilities; and improve the public's sensitisation of the risks of climate-related health impacts – particularly at the community level.

Under the LCDS it is expected that efforts will also be invested in improving access to, and the quality of healthcare services across the country. This will include training healthcare personnel to render service in a low-carbon economy; upgrading medical facilities and equipment to facilitate accurate diagnosis, treatment and care; improving management systems, data information storage and retrieval; as well securing effective quality medication.

3.1.3 Health Vision 2020: A National Health Strategy for Guyana 2013 – 2020⁸

The Health Vision 2020 sets out Guyana's long-term plan for health planning towards meeting the Millennium Development Goals (MDGs) targets. The Strategy aims at consolidating health outcomes and system strengthening, accelerating closure in the remaining gaps in meeting the MDGs, and establishing a post MDG agenda for Guyana. This is to be achieved by expanding universal health coverage and enabling health enhancing behavioural and cultural changes in and through the delivery of improved health services.

To meet the vision for 2020, the strategy targets three principal goals:

- i) Advance the well-being of all peoples in Guyana;
- ii) Reduce health inequities; and
- iii) Improve the management and provision of evidence-based, people-responsive, quality health services.

The Strategy focuses on thirteen components that target specific healthcare areas that are currently being affected. These are:

⁸ Ministry of Health. 2013. Health Vision 2020: A National Health Strategy for Guyana 2013 -2020. Accessed at: <http://extwprlegs1.fao.org/docs/pdf/guy169658.pdf>

1. Health Governance and Leadership
2. Human Resources for Health
3. Health Financing
4. Strategic Information
5. Drugs and Medical Supplies
6. Service Delivery
7. Strategic Partnership
8. Health Across the Human Life Course
9. Non - Communicable Diseases
10. Communicable Diseases
11. Environmental Health
12. Food Security and Nutrition
13. Health Promotions

The implementation of the Strategy was overseen by a National Health Policy Committee and supported at the technical and operational levels by an Administration and Management Directorate and a Technical Health Directorate.

The GoG is currently in the process of developing a National Strategic Plan for Health 2022-2030 which intends to promote a model based on the principles of Primary Health Care through an Integrated Health Service Delivery Network approach to achieve universal access and coverage. Essential functions include healthcare delivery model, governance, financing, human resources, delivery of services, evidence informed decision making, supply chain, emergency preparedness, strategic partnerships, occupational safety and health, and preferred health programs and health determinants. In order to address other key areas for improvement, the MoH is preparing a Health Infrastructure Transformation Plan and a Human Resource Development Plan, with assistance from the Pan-American Health Organization (PAHO).

3.1.4 National Mental Health Action Plan 2015-2020⁹

The National Mental Health Action Plan 2015-2020 was developed in light of the 65th World Health Assembly adopted resolution WHA64.4 on the global burden of mental disorders and the need for a comprehensive coordinated response from health and social sectors at the country level. This Plan, which was developed jointly by the Mental Health Team of the Georgetown Public Hospital Corporation, the Ministry of Public Health (MoPH) and PAHO, presented the justification and advantages of providing a national mental health strategy in Guyana. At the same time, it outlines strategic actions on how to implement and scale-up interventions and primary care services for mental health.

The National Mental Health Strategy 2015-2020 was informed by wide stakeholder consultation, which included representatives from civil society, Government Ministries, Non-Governmental Organisations, health administrators, general health professionals, and community and institutional-based mental health care providers.

3.1.5 Disaster Risk Management

Several initiatives have been pursued by the GoG with regards to disaster risk management and response. Among these include the development of legislation, implementation strategies, management plans, procedures, guidelines, damage assessment and needs analysis system, early warning system, and coordination platforms. A Disaster Risk Management Bill, National Disaster Risk

⁹ Ministry of Health. 2016. National Suicide Prevention Plan 2015 - 2020 Accessed at: <https://health.gov.gy/index.php/21-mhu/55-mhusuicideplan>

Management Policy and Early Warning System Framework document, National Flood Plan, Community Based Integrated Disaster Risk Management Plan, Integrated Disaster Risk Management Agriculture and Environment Plan, National Public Education Plan, among other instruments have been prepared.¹⁰

Through IDB support, the GoG, in 2013 prepared a 10-year National Integrated Disaster Risk Management Plan and Implementation Strategy (NIDRMP) with the intention to guide the implementation of projects and initiatives in Guyana – at national, regional and local levels – that are required in order to meet the NIDRMP's strategic objectives of risk identification, prevention/mitigation, financial protection/risk transfer, preparedness/response and recovery.

In addition, the Civil Defence Commission (CDC), with support from the United Nations Development Programme, developed a Multi-Hazard Disaster Preparedness and Response Plan (MHPRP) in 2013. The MHPRP sought to detail arrangements to cope with the effects of natural and/or man-made disasters occurring in Guyana and to assign responsibilities and to provide coordination of emergency activities connected with major disasters, in general and specific ways.

The health sector features prominently, both in terms of vulnerability as well as being part of response mechanisms. The sector is particularly vulnerable to flooding and there is a high risk of infectious disease outbreak as well as high risk of fire. A health sector self-assessment tool for disaster risk reduction was developed with support from PAHO/WHO for the purposes of determining the status of key aspects of disaster risk management in Guyana with focus on mitigation and preparedness. The application of the self-assessment tool indicated that there are gaps in both mitigation and preparedness. However, disaster risk management planning is developing within the health sector.

3.2 Legislative Framework

3.2.1 The Constitution of the Cooperative Republic of Guyana

The Constitution of Guyana is the supreme law of the land and all other law and legal framework must be considered with the context of the Constitution. In the Constitution, education is considered under the following Articles:

- Article 24: *“Every citizen has the right to free medical attention and also to social care in case of old age and disability”*
- Article 25 (1): *“Every citizen has a duty to participate in activities designed to improve the environment and protect the health of the nation”*

3.2.2 Environmental Protection Act (1996)

The Environmental Protection Act, 1996, and the Environmental Protection Amendment Act 2005, establishes the basic institutional and regulatory framework within which all activities that may significantly impact on the natural, social, and cultural environments are assessed. The Act provides for the management, conservation, protection and improvement of the environment, the prevention or control of pollution, the assessment of the impact of economic development on the environment and the sustainable use of natural resources. The Act also provides that the EPA will be the central coordinating agency for environmental management in the relevant sectors in Guyana.

¹⁰ CDC, 2013, Multi-Hazard Disaster Preparedness and Response Plan. Pg. 9

3.2.2.1 Environmental Protection Regulations

The Environmental Protection Act, 1996 comprises several subsidiary Environmental Protection Regulations. These Regulations were developed to regulate and control the activities of development projects during construction and operation. The EPA has the responsibility to ensure the compliance of all new and existing activities to these Regulations by issuing the required authorizations and monitoring their operations.

Environmental Protection Air Quality Regulations (2000)

In accordance with these Regulations anyone who emits any air contaminant in the construction, installation, operation, modification or extension of any facility related to industry, commerce, agriculture or any institution shall apply to the EPA for an environmental authorization at least ninety days before the date on which the emission is to commence. In accordance with the Regulations the EPA shall establish the desirable air pollution limits. Currently, there are no nationally determined or established Air Quality standards. However, the Agency is guided by and utilises air quality guidelines reputable international organisations from the World Health Organisation (WHO) and the United States Environmental Protection Agency (USEPA) among others. Table 3-2 below shows the WHO Air Quality Guidelines.

Table 3-2: WHO Air Quality Standards

Element	Averaging Period	Acceptable Limit
Particulate Matter (PM 10)	24-hour	50 g/m ³
Particulate Matter (PM 2.5)	24-hour	25 g/m ³
Sulphur Dioxide	24-hour	20 g/m ³
Ozone (O ₃)	8-hour	100ug/m ³
Nitrogen Dioxide	1-hour	40ug/m ³

Environmental Protection Water Quality Regulations (2000)

These Regulations require an environmental authorization for construction, installation, operation, modification/extension of facilities that discharge effluents. Requirements and guidelines on the discharge of effluents and disposal of sludge are provided. The EPA adopts the WHO and USEPA standards for surface and potable water when applicable. Draft Water Quality Guidelines have also been developed by the EPA in collaboration with the Guyana National Bureau of Standards (GNBS). Limits for key parameters outlined in these guidelines are presented in Table 3-3.

Table 3-3: Industrial Effluent Discharge Limits

Parameter	Acceptable Standard
pH	5.0 – 9.0
Temperature	<40°C
Total Suspended Solids	100 mg/L
Total Dissolved Solids	500 mg/L
Turbidity	25 NTU
Dissolved Oxygen	>4 mg/L
Oil and Grease	25 mg/L
Chemical Oxygen Demand	<250 mg/L
Biochemical Oxygen Demand	<50 mg/L

Environmental Protection Noise Management Regulations 2000

Under these Regulations activities that emit noise such as construction, transport, industry, commerce and any institution are required to apply to the Agency for an environmental authorization. The EPA is responsible for the establishment of standards for permissible noise levels in industry, construction and other areas. The EPA may grant authorization for noise emission unconditionally or subject to conditions and may require environmental audit procedures. The GNBS and the EPA developed standards for noise emissions into the environment as shown in Table 3-4.

Table 3-4: Decibel Limits for Various Activities

Type of Activity	Day Time Limit (dB)	Night Time Limit (dB)
Residential, Institutional, Educational	75	60
Industrial, Transportation	100	80
Commercial	80	65
Construction	90	75
Recreational	100 (18:00 to 01:00hrs)	75 (01:00 to 08:00hrs)

Environmental Protection Hazardous Wastes Management Regulations (2000)

These Regulations outline the rules and procedures for transport, storage, treatment and disposal of hazardous wastes and are intended to ensure that all operations that generate, transport, store and dispose of hazardous wastes are managed in a manner that protects human health and the environment. The Regulations also allow for the provision of information on the types of facilities and quantity of hazardous waste generated, treatment standards and efforts to reduce the waste generated.

Environmental Protection (Litter Enforcement) Regulations (2013)

These Regulations provide for the enforcement of litter offences. It is an offence under these regulations to place litter in a public place, permit or cause another person to litter a public place or have litter on private premises that pose a health risk. The fine for an individual found littering in a public place is \$50,000, while for body corporate it is \$100,000. A fixed penalty of fifteen thousand dollars (\$15,000) is offered to offenders who accept liability for the offence committed. Under the Litter Prevention Regulations, the Regional Democratic Councils (RDCs) and Neighbourhood Democratic Councils (NDCs) are expected to provide receptacles in public places. Further, every Council shall make appropriate provision for the prompt, efficient and regular emptying of the contents of the receptacles and for the removal and disposal of those contents.

3.2.2.2 Environmental Assessment and Management Plan (EAMP) Guidelines

The EPA, in 2021, prepared draft guidelines for the Preparation of Environmental Assessment and Management Plans (EAMP). These guidelines were updated in 2022. An EAMP seeks to identify and assessment potential impacts of project and provide methods and procedures for mitigating and monitoring impacts. According to the Guidelines, an EAMP “*provides a description of the methods and procedures for identifying, assessing and analysing existing and potential physical, ecological and socio-economic impacts of projects and identifying actions to prevent and mitigate impacts as well as a framework for monitoring and reporting during project implementation. The EAMP should also identify environmental objectives of the developer, detailed description of the project and a robust baseline of the project environment and area of influence of the project. The EAMP should be used*

throughout the project life cycle and regularly updated in an effort to remain aligned with the project as it progresses from construction to operation and to decommissioning.”

The objectives of the EAMP are to:

- Place the proposed or existing activity in the context of the local and regional environment,
- Adequately describe all components of the proposed/ existing activity, so that the Agency can consider approval of a well-defined project, and prescribe relevant and adequate Permit Conditions for the monitoring of the activity,
- Identify the environmental issues/risks associated with the proposed/existing activity,
- Provide the basis of the developer’s environment management program, which shows that the environmental impacts resulting from the proposed/existing activity, including cumulative impacts, can be acceptably managed,
- Provide a document that clearly sets out the reasons why the proposed/existing activity should be considered environmentally acceptable.

3.2.3 Public Health Ordinance (1934)

The Public Health Ordinance makes provisions for promoting public health concerns in Guyana. The Ordinance is dated and was enacted during Guyana’s colonial past. The Ordinance makes provisions for central and decentralised and local administration of health including the prevention of infectious, epidemic, endemic and venereal diseases, as well as management of public health facilities and services. The Ordinance also makes provisions for regulating ‘offensive trades’, that is, a trade that damages the health of the persons engaged in the trade. The Ministry of Health has convened a Committee for the management of offensive trades and this Committee is chaired by the Chief Medical Officer and is aimed at regulating activities that can damage the health of employees during their routine duties. The Government’s COVID-19 measures introduced several public health restrictions which were gazetted under this Ordinance.

A draft Public Health Bill was prepared and will supersede the Public Health Ordinance when enacted.

3.2.4 Ministry of Health Act (2005)

The Ministry of Health Act 2005 makes provision for the protection and promotion of the health of the people of Guyana by contributing to the improvement in the quality of life and by providing the people of Guyana with access to a productive life, free from diseases and infirmity, and characterised by physical, mental, and social well-being.

The Act prescribes the mandate of the Minister with responsibility for health, and the appointment of the Advisor, Chief Medical Officer and Permanent Secretary. The Act requires that the Minister at the end of each year, prepare an annual report to be submitted to the National Assembly. The Act also empowers the Minister to make regulations under this Act

Among the responsibilities conferred to the Ministry by the Act include oversight of health care services including mental health; provide advice to Government and establish policies on health; develop and ensure the implementation of the National Health Plan and other action plans and directives including human and all other resource requirements; enter into service agreement with the Regional Health Authorities (RHA) and review and approve their health plans and budgets; and facilitate the regulation of the health care professionals of hospitals and other health facilities in the public and private sectors including accreditation.

3.2.5 Regional Health Authorities Act (2005)

The Regional Health Authority Act of 2005 established regional authorities with responsibilities for providing for the delivery of and administering health services and health programme in specific geographic areas and for matters incidental thereto or connected therewith. The Act addressed the establishment of health regions and the establishment and status of a regional health authority. Part IV established the structure and Administration of the regional hospitals and Part V of the Act outlines the powers, duties, and responsibilities of RHAs in relation to delivery of health services, health plan proposals, and operation within accountability framework.

3.2.6 Health Facilities Licensing Act (2007)

The Health Facilities Licensing Act 2007 is an Act to provide for the licensing of health facilities and for related matters. Under the provisions of the Health Facilities Licensing Act, all health facilities require being licensed by the Minister of Health. Section 4 (1) states that no health facility shall be operated except under the authority of a license issued by the Minister. Further the Act outline the licensing proposal process, and the basis of the granting of a full or provisional license or a refusal. The Act also provides for the appointment of inspectors and the inspection of health facilities. The Act also provides for inspectors who are authorized to enter any facility and conduct inspections. Section 27 deals with the offenses under the Act, including fines and imprisonment upon summary conviction.

Importantly, the Act also provides for the Minister to make regulations related to licenses, renewals, standards for health facilities, record keeping, prescribing and governing the construction, establishment, location, equipment, maintenance and repair of, additions and alterations to, and operations of health facilities.

3.2.6.1 Health Facilities Licensing Regulations (2008)

The Health Facilities Licensing Regulation 2008 applies to the following health facilities, which are prescribed as health facilities under Section 2 of the Health Facilities Licensing Act 2007. The application process of the health facilities licensing is outlined in the 2008 Regulations.

- a) Blood Banks
- b) Diagnostic Imaging Facilities
- c) Dialysis Centre or Dialysis Clinics
- d) Health Centres
- e) Hospitals
- f) Human Tissue Banks
- g) Maternity Wards
- h) Medical Laboratories
- i) Nursing Homes
- j) Oncology Clinics with Radiation Therapy
- k) Pathology and Clinical Laboratory
- l) Surgical Centres

The 2008 Regulations prescribes obligations for health facilities in fulfillment of the licensing process. Further, the Regulations ensures equal access to patient care and care arrangement by requiring that every health facility be designed and equipped as to be able to carry out their operation in a safe and effective manner, including readily access to all patients, including physically challenged persons. The Regulations also stipulates that health facilities be constructed to ensure patient privacy and confidentiality without compromising patient care.

Other areas detailed in the Regulation includes, disposal of infectious and radioactive waste, sterilization, and occupational safety and health.

3.2.7 Medical Practitioners Act (1991)

The Medical Practitioners Act 1991 makes new provision for the registration of medical practitioners and for matters connected therewith. The Act establishes the Medical Council of Guyana and outlines the function of the Council. It also makes provision for the registration of medical practitioners in Guyana and the publication of the register into public records. The Act also outlines offences contrary to the Act and prescribes penalties for the offences.

3.2.7.1 Medical Practitioners (Code of Conduct and Standards of Practice) Regulation (2008)

The Code of Conduct and Standards of Practice Regulations 2008 were made under the Medical Practitioners Act 1991. The Regulation intends to guide the medical practitioners and Medical Council. The Regulations outlines the Joint Code of Ethics and standard of care required among other requirements.

3.2.8 Water and Sewerage Act (2002)

The Water and Sewerage Act provides the framework for the overarching management of water resources in Guyana, and subject to existing rights, the ownership of water resources and the rights to use, abstract, manage, and control the flow of water, are vested in the State. The Act contains various provisions for the management of freshwater resources, and established three institutions for realising its objectives:

- The National Water Council for policy development and implementation.
- The Hydrometeorological Department within the Ministry of Agriculture for licensing and monitoring of water-use and impacts on quantity and quality of surface and groundwater.
- Guyana Water Incorporated (GWI) for the licensing and monitoring of potable water use and sewerage systems.

The Act also outlines liabilities for offences related to access to records and information to the relevant authorities, the improper disposal of sewage, the pollution of waterworks, the diversion of water from streams and rivers, and water availability and water quality.

3.2.9 Occupational Safety and Health Act (1997)

The Occupational Safety and Health Act 1997 defines the responsibilities of management and workers with respect to safety and health and applies to every workplace in Guyana. The Act makes provisions for the registration of industrial establishments, the establishment of an Occupational Safety and Health Authority, the establishment of a National Advisory Council on Occupational Safety and Health, the duties of employers, workers and other persons, treatments of accidents and occupational diseases, and occupational safety and health regulations. The Act authorises Occupational Health and Safety (OH&S) inspectors to enter and inspect workplaces.

At a construction site, employers must ensure that the requirements of the Act are implemented and that the safety and health of workers are protected onsite. Employers also have responsibility for providing protective devices for workers, providing instructions and supervision to ensure the safety of workers, maintaining a medicine chest and establishing an occupational health service for workers. Employers have a responsibility to establish a joint workplace safety committee. The provisions of this Act should be implemented throughout the construction phase of the project.

3.2.10 Labour Act of 1942 (Amended 1997)

The Labour Act of 1942 specifies the conditions that an employer must observe in the contracting employees. The Labour Act of 1942 is an Act to provide for the establishment of a Department of Labour, for the regulation of the relationship between employers and employees and for the settlement of differences between them. The Act deals with the Regulation of Wages, the Rights of the Employees and Duties and Obligations of Employees, Payment of Wages and Deductions therefrom. It outlines the Hours of Work of the Employers, Collective Agreements, and Miscellaneous such as information sharing and appointment and powers of Labour Officers.

3.2.11 Persons with Disabilities Act (2010)

The Persons with Disabilities Act 2010 provides certain rights to person with disabilities such as the promotion and protection and the full and equal enjoyment of the rights, to eliminate discrimination on the basis of disability, to provide for the welfare and rehabilitation of persons with disabilities, to provide for the registration of persons with disabilities, to establish the National Commission on Disabilities and for connected persons. Section 14 – 19 makes provision for the inclusion of persons with disabilities into the general education system by providing adequate infrastructural and policy framework to allow for the access to education by people with disabilities.

3.2.12 Prevention of Discrimination Act (1997)

The Prevention of Discrimination Act Chapter 99:08 of 1997 provides for the elimination of discrimination in employment, training, recruitment and membership of professional bodies and the promotion or equal remuneration to men and women in employment who perform work of equal value, and for matter connected therewith. The Act outlines the prohibited ground for discrimination, which includes race, sex, religion, colour, ethnic origin, indigenous population, national extraction, social origins, economic status, political opinions, disability, family responsibility, pregnancy, marital status, or age, except for purpose of retirement and restriction on work and employment on minors.

The 1997 Act further states that any act or omission, or any practice or policy that directly or indirectly result in discrimination against a person on the grounds stated is an act of discrimination regardless of whether the person the person responsible for the act or omission or the practice or policy intended to discriminate.

The Prevention of Discrimination Act 1997 advocates for the promotion of equal remuneration by stating that every employer and every person acting on behalf of such employer shall be obligated to pay equal remuneration to men and women performing work of equal value for such employer.

3.2.13 Employment of Young Persons and Children Act 1938 (Amended 1999)

The Employment of Young Persons and Children Act 1938, amended 1999, is an Act relating to the employment of young person and children. It established that no child under the age of fifteen shall be employed, and no young person under the age of sixteen shall be employed at night in any industrial undertakings except to the extent to which and in the circumstances in which such employment is permitted under the International Labour Organisation (ILO) Convention. The Act outlines the offences and regulations as it relates to the employment of young person and children.

3.2.14 Sexual Offences Act 2010 (Amended 2013)

The Sexual Offences Act of 2010 reforms and consolidates the laws relating to sexual offences. The Act makes provisions for the prosecution of acts of sexual offences, and provides the framework for various measures to be implemented including establishing a National Plan for the Prevention of

Sexual Offences that aims to prevent and bring awareness to sexual offences in Guyana. The Sexual Offences Act outline the avenues available to the victim to redress by the justice system.

3.3. National Guidelines

3.3.1 EPA Guidelines

The EPA has prepared several environmental management guidelines for varying activities in keeping with the Environmental Protection Regulations of 2000. The Guidelines relevant to the health sector are outlined below.

3.3.1.1 Environmental Protection Agency Guidelines for Transportation, Storage and Occupational Handling of Chemical/Industrial Hazardous Waste, 2011

The purpose of these Guidelines is to provide information to persons on the correct procedures for the transport, storage and occupational handling of chemical/ industrial hazardous waste. These Guidelines apply to any person who operates a company, business or facility that transports, generates, stores, treats and disposes of chemical/industrial hazardous waste. It contains information on procedures and requirements for the transportation, storage and occupational handling of chemical/ industrial hazardous waste. Hazardous waste is defined in this guideline document as *“a waste or combination of wastes which because of its quantity, concentration or physical, chemical, infectious characteristics, may pose a substantial hazard to human health or the environment.”*

3.3.1.2 Environmental Protection Agency Guidelines for Storage, Transportation & Occupational Handling of Biomedical Waste, 2011

The objective of these Guidelines is to provide general information on the proper storage, transportation and handling of biomedical waste. These Guidelines are for any person who operates a business or facility that generates, stores, and transports biomedical waste. It contains information on storage, transportation and occupational handling methods as well as guidelines on various treatment methods that are applicable to Guyana. Biomedical waste is defined in this guideline document as *“discarded biological material from teaching, clinical and research laboratories and operations.”*

3.3.2 Guyana National Bureau of Standards Guidelines

The Guyana National Bureau of Standards (GNBS) develops and promotes standards for economic development and consumer protection. The GNBS has in place a set of guiding standards relevant to health facilities. Those relevant to the project are outlined below.

3.3.2.1 GYS 265: 2013 Medical Laboratories – Requirements for Quality (Second Revision) and Competence. ISO 15189:2012

This international standard specifies requirements for quality and competence in medical laboratories. It can be used by medical laboratories in developing their quality management systems and assessing their own competence. It can also be used for confirming or recognizing the competence of medical laboratories by laboratory customers, regulating authorities and accreditation bodies.

3.3.2.2 GYS 259:2004 Occupational, Health and Safety Management Systems – Specification with Guidance for Use.

This standard specifies the requirements for an OH&S management system to enable an organization to formulate policies and objectives. This takes into account legislative requirements and information

regarding significant hazards and risks which the organization can control and over which it can be expected to have an influence to protect its employees and others whose health and safety may be affected by the activities of the organization.

3.3.1.3 National Building Codes

The National Building Codes were developed by the GNBS in 2012 with the aim of “*providing an efficient and effective system for granting building permits, administering building matters and resolving building disputes*” and to “*facilitate uniformity in the education, training and qualifications of building practitioners and the recognition of qualification*”. The objective of the building codes is to provide guidance on the construction of buildings in order to ensure safety of the potential occupants, builders, and the structure. The Codes are expected to guide architects and contractors on the design and construction of buildings. As such, it focuses on fire safety, use and occupancy, electrical, plumbing, use of Guyanese hardwoods in construction, concrete and block masonry, structural steel, high-rise buildings, foundations and excavations, and design and construction of septic tanks and associated secondary treatment and disposal systems.

3.4 International Conventions and Agreements

3.4.1 United Nations Sustainable Development Goals¹¹

The United Nations Agenda for Sustainable Development includes 17 Sustainable Development Goals that are aimed at a strategic approach to providing a better and sustainable future to all. Goal 3 ensures healthy lives and promotes well-being for all at all ages. Guyana adopted the 2030 Developmental Agenda on September 2015. One of the targets of Goal 3 is to achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

3.4.2 International Health Regulations¹²

The International Health Regulations (2005) (IHR) provide an overarching legal framework that defines countries’ rights and obligations in handling public health events and emergencies that have the potential to cross borders. The IHR are an instrument of international law that is legally-binding on 196 countries, including the 194 WHO Member States. The IHR grew out of the response to deadly epidemics and creates rights and obligations for countries, including the requirement to report public health events. The Regulations also outline the criteria to determine whether or not a particular event constitutes a “*public health emergency of international concern*”. At the same time, the IHR requires countries to designate a National IHR Focal Point for communications with WHO, to establish and maintain core capacities for surveillance and response, including at designated points of entry. Additional provisions address the areas of international travel and transport such as the health documents required for international travel. The IHR introduce important safeguards to protect the rights of travelers and other persons in relation to the treatment of personal data, informed consent and non-discrimination in the application of health measures under the Regulations.

3.5 IDB’s Environmental and Social Policy Framework

The IDB’s Environmental and Social Policy Framework (ESPF) makes provision for the protection of the environment and groups that may be vulnerable to the potential risk and impacts of IDB supported projects. As such, it has established a strict set of Environmental and Social Standards against infringements of environmental and social rights. These Environmental and Social Performance

¹¹ <https://www.un.org/sustainabledevelopment/health/>

¹² <https://www.who.int/health-topics/international-health-regulations>

Standards (ESPS) describe the requirements that must be met in the development and implementation of IDB-financed projects. The objectives of the Bank's Performance Standards are to:

1. Identify and evaluate environmental and social risks and impacts of the project. Adopt a mitigation hierarchy and a precautionary approach to anticipate and avoid, or where avoidance is not possible, minimize, and, where residual impacts remain, compensate/offset for risks and impacts to workers, project-affected people, and the environment.
2. Promote improved environmental and social performance of Borrowers through the effective use of management systems.
3. Ensure that grievances from projects affected people and external communications from other stakeholders are responded to and managed appropriately.
4. Promote and provide means for adequate engagement with project-affected people and other stakeholders throughout the project cycle on issues that could potentially affect them and to ensure that relevant environmental and social information is disclosed and disseminated.

This project was listed as a Category B under the Bank's screening and environmental and social classification. Category B suggests that the project has the potential to cause mostly local and short-term negative environmental and social impact and for which mitigation measure are known and readily available. Category A projects have been excluded and environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation. Site-specific ESAs/ESMPs will be developed as necessary for renovations of a substantial nature or for any new construction.

Table 3-5: IDB's ESPS and Relevancy to the Project

ESPS	Objective	Relevancy to Project
Standard 1 – Assessment and Management of Environmental and Social Risk	Identify and evaluate environmental and social risks and impacts of the project and adopt a mitigation hierarchy and a precautionary approach to anticipate and avoid, minimize, and offset risks and impacts to workers, project-affected people, and the environment.	<p>In accordance with the ESMF, the project was listed as a category B and therefore there will be a need for environmental and social management planning and mitigation measure assessment to:</p> <ul style="list-style-type: none"> a) Identify of risks and impacts; b) Environmental and social management programs; c) Organizational capacity and competency; d) Emergency preparedness and response; e) Stakeholder engagement; and f) Monitoring and evaluation of the project's environmental and social performance. <p>Category A projects have been excluded and environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation. Site-specific ESAs/ESMPs will be developed as necessary for renovations of a substantial nature or for any new construction.</p>
Standard 2 – Labour and Working Conditions	To identify and protect the fundamental principles and rights of workers and to promote fair treatment, non-discrimination, and equal opportunity for workers.	The project will have a construction phase and therefore there will be a need measures to be implemented to address issues surrounding occupational health and safety, working conditions, terms of employment, and appropriate mitigation measures such a grievance mechanism and grievance redress.
Standard 3 - Resources Efficiency and Pollution Principle	To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities and promote more sustainable use of resources, including energy and water.	The construction phase of the project is expected to generate short term negative environmental, social, and health and safety impacts. These are likely to be small to moderate impacts of short duration (mainly dust, noise, localized waste generation, drainage issues, risks of small accidents with, and nuisances to, surrounding community, health and safety risks to workers, among others). The project will also support

ESPS	Objective	Relevancy to Project
		enhanced resources efficiency through interventions in energy, water supply and waste management.
Standard 4 – Community, Health, and Safety	To anticipate and avoid adverse impacts on the health and safety of the project-affected people during the project life cycle from both routine and non-routine circumstances and ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes risks to the project-affected people.	<p>There is the small to moderate potential for construction activities to impact or inconvenience patients at the hospitals, residences in the surroundings of the hospital, and disruption of traffic. This is due to location of the extension at the existing facilities. The ESMP will include risk analysis and specific actions to ensure the health and safety of people in the local communities during the construction and operation phases of the works. The presence of workers in local communities can increase risks of exposure to disease, adverse interactions with local personnel, and risks of using security personnel. These impacts will be analysed, and mitigation measures identified as part of the ESMP. A Code of Conduct applicable to all project personnel will also be prepared.</p> <p>In the event there are changes or adjustments to the scope of the project, these will be accommodated and environmental and social assessments as part of the environmental and social audits to be carried out prior to the start of any civil works for the facilities in operation. Also, site-specific ESAs/ESMPs will be developed as necessary.</p>
Standard 5 – Land Acquisition and Involuntary Resettlement	Identify and avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs and anticipate and avoid, or minimize adverse social and economic impacts from land acquisition or restrictions on land use.	This standard is not relevant to the ESMP since the proposed construction is expected to occur on the space allocated for extension within the hospitals' compound/existing boundaries. Hence, there are no other competing land use or land use conflicts identified in this project-planning phase. However, activities within these facilities may be disrupted or have to be relocated, inclusive of car parking at GPHC, and a day care centre at the Linden Hospital.

ESPS	Objective	Relevancy to Project
		<p>In the event there are changes or adjustments to the scope of the project, these will be accommodated and environmental and social issues assessment as part of the environmental and social audits to be carried out prior to the start of any civil works for the facilities in operation. Also, site-specific ESAs/ESMPs will be developed as necessary.</p>
<p>Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources</p>	<p>Ensure the protection and conservation of terrestrial, freshwater, coastal and marine biodiversity and to maintain the ecosystem functions to ensure the benefits from ecosystem services.</p>	<p>This standard is not relevant to the project since the proposed land for the construction and extension will not impact biodiversity and natural resources since the hospital sites are located within existing towns in urban/peri-urban areas (disturbed/brownfield sites).</p> <p>In the event there are changes or adjustments to the scope of the project, these will be accommodated and environmental and social assessments as part of the environmental and social audits to be carried out prior to the start of any civil works for the facilities in operation. Also, site-specific ESAs/ESMPs will be developed as necessary.</p>
<p>Standard 7 – Indigenous Peoples</p>	<p>To ensure that the development process fosters full respect for the human rights, collective rights, dignity, aspirations, culture, and natural resource-based livelihoods of Indigenous Peoples and to anticipate and avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not possible, to minimize and/or compensate for such impacts.</p>	<p>This standard is not relevant to the project since the proposed construction works will not occur in or near indigenous communities, and therefore there will be no negative impacts on indigenous communities in the catchment areas of the hospitals.</p> <p>In the event there are changes or adjustments to the scope of the project, these will be accommodated and environmental and social assessments as part of the environmental and social audits to be carried out prior to the start of any civil works for the facilities in operation. Also, site-specific ESAs/ESMPs will be developed as necessary.</p>

ESPS	Objective	Relevancy to Project
Standard 8 – Cultural Heritage	To protect cultural heritage from the adverse impacts of project activities and support its preservation. And to promote the equitable sharing of benefits from the use of cultural heritage.	This standard is not relevant to the project since land identified for the new construction and extension will not have any impact on cultural heritage sites since there is none located in close proximity to the project sites. However, the ESMP has identified measures in the event of a chance find during construction.
Standard 9 - Gender Equality	To anticipate and prevent adverse risks and impacts based on gender, sexual orientation, and gender identity, Sexual and Gender Based Violence (SGBV), and when avoidance is not possible, to mitigate and compensate for such impacts and to achieve inclusion from project-derived benefits of people of all genders, sexual orientations, and gender identities.	A Gender Analysis (GA) under this standard was conducted to determine the impact of the project on gender-specific healthcare services, such as maternal health. The scope of works and sections of some of the hospitals which handle specialized care for specific genders such as maternal health, means that there are gender-based risks and impacts specific to women (esp. pregnant women and unborn children) who may be at higher risk from factors such as contact with hazardous materials, exposure to certain diseases, and lack of access to these facilities resulting in inconveniences. The possible large influx of workers into communities can create or exacerbate existing risks of SGBV such as sexual harassment and exploitation of women and children within the project's immediate area of influence. A GA was therefore required to be conducted and this has been integrated into the ESA/ESMP framework and will also be integrated the ESMS. This will also be further adapted for the site-specific ESA/ESMPs. The GA includes clear policies and procedures, and integrate the project's code of conduct, grievance mechanism, training and awareness raising, monitoring, and measures to offset those risks falling disproportionately on women and their equal participation in stakeholder engagement. The EPRP (see ESPS 1&2) will also be updated to include workers or other Project Affected Parties whose mobility might be reduced by pregnancy, mobility difficulties or other physical limitations. Opportunities to mainstream gender issues and incorporate specific

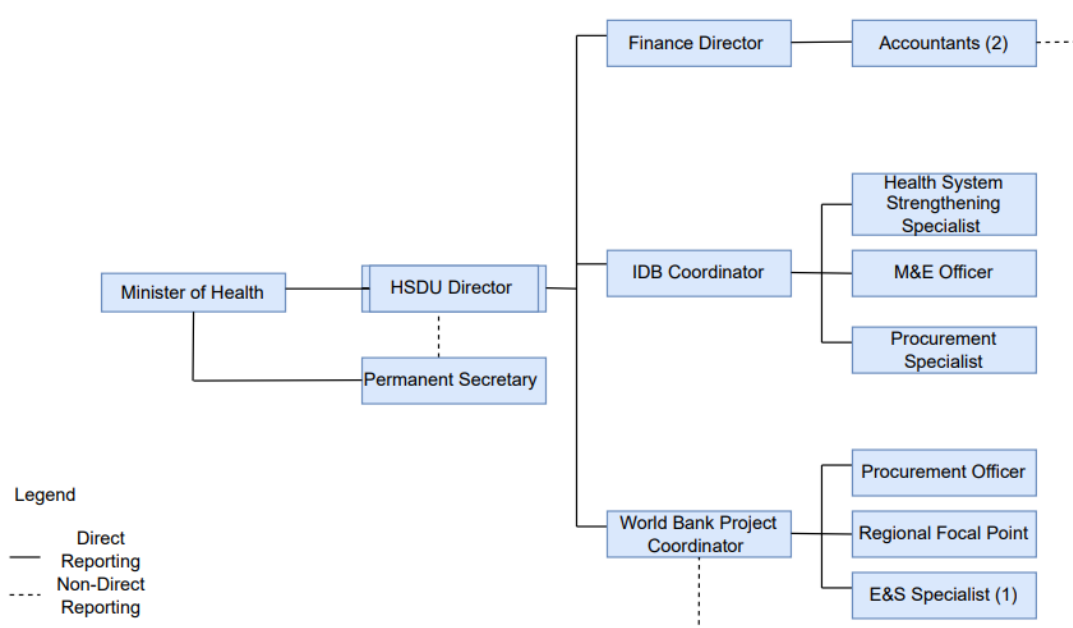
ESPS	Objective	Relevancy to Project
		actions to enhance gender equality within the scope of the project will be explored including promoting the hiring of women. Semi-annual reports submitted to the Bank providing environmental and social updates during execution will include both qualitative and quantitative information on these gender mainstreaming efforts.
Standard 10 - Stakeholder Engagement and Information Disclosure	To assess the level of stakeholder interest in and support for the project and to enable stakeholders' views to be considered in project design and environmental and social performance and to promote and provide the means for effective and inclusive engagement with project-affected people throughout the project's life cycle on issues that could potentially affect or benefit them from the project.	A Stakeholder Engagement and Consultation Plan will be developed and will include stakeholder mapping and reflect the needs of all the different stakeholders (beneficiaries and affected). The plan includes a grievance mechanism and procedures to prevent retaliation against any complainant. The relevance of the face-to-face or virtual consultation process will take into account technological and cultural barriers and local measures to prevent the spread of COVID-19.

3.6 Institutional Framework

3.6.1 Ministry of Health

The Ministry of Health was established under the Ministry of Health Act 2005 and is responsible for the efficient and effective administration and delivery of healthcare in Guyana. The Act empowers the Minister and other officials to manage the business of the Ministry including health facilities and improvement projects.

The Ministry of Health (MoH) will serve as the implementing agency for this project through its Health Sector Development Unit (HSDU). The HSDU is the managing body for projects in collaboration with its donor partners and will be considered as the Project Implementation Unit (PIU) for the project. The organisational structure of the HSDU is presented below.



Source: Ministry of Health 2022

Figure 3-1: Organisational Structure of the HSDU

The HSDU/PEU will work in collaboration with the Environmental Health Unit (EHU), Chief Medical Officer (CMO), hospital management, regional administration, and other key stakeholders to ensure effective implementation.

The EHU is mandated to ensure that all risk factors, which adversely affect human health and the environment are mitigated. Its role is to prevent any hazardous impact on human health and the environment and functions centrally to provide support to the Regional Environmental Health Departments to assess, correct, control and prevent those factors in the environment which can adversely affect human health and the environment, such as:

- Air pollution
- Inadequate water and sanitation
- Chemicals uses

- Radiation
- Noise
- Occupational risks
- Agricultural practices
- Built environmental impacts
- Climate change

The EHU is staffed currently by two Principal Environmental Health Officers (PEHO), one Environmental Health Officer (EHO) and one Senior Food Inspector. However, this present complement of staff does not complete the prescribed structure of the Unit. The Unit is designed to function under the leadership of a director and four PEHO along with the administrative and auxiliary staff.

Regionally, the staff complement of the Regional Environmental Health Departments comprises of a Regional Environmental Health Officers (REHO), who heads the departments, Senior Environmental Health Officers (SEHOs), EHOs and Environmental Health Assistants (EHAS). However, like the central unit, the regional offices are not sufficiently staffed.

The IDB conducted an analysis as part of the project preparation to assess the Ministry's institutional capacity as it relates to Health Care Network Strengthening in Guyana GY-L1080 through the Bank's Institutional Capacity Analysis Platform (PACI). Based on the assessment conducted, the following were determined as it relates to the Ministry's capacity pertaining to Environmental, Social, and Health and Safety (ESHS) Impact Management.

- The MoH does not have an expressed and definitive policy establishing its commitment to managing environmental, social, and occupational health and safety (ESHS) impacts on its projects. However, although there is no formal ESHS policy document, the MoH tends to adopt the ESHS policy guidelines from its international development agencies and partners that are financing approved projects and programmes.
- A technical department in the form of the HSDU will be responsible for managing ESHS impacts in the IDB-financed project. The HSDU reports directly to the Advisor to the Minister of Health, and the Minister of Health. The MoH also liaises with the EPA on matters pertaining to environmental management issues and the Ministry of Labour on Occupational Health and Safety issues.
- In terms of the HSDU's authority in the area of ESHS impact management, while there is no formal authorization documentation, this department has been given specific authority for the management of ESHS impacts on the MoH's projects. Moreover, the HSDU works on all of the Ministry of Health's foreign projects.
- In the last three years, the MoH through the HSDU has had the experience of managing ESHS impacts on projects based on the IDB's policies such as the Maternal and Child Health Project. In this instance, the MoH was guided by the Environmental and Social Specialist from the IDB/ESG regarding the preparation of an ESMP for the Georgetown Public Hospital. The HSDU also has had experience with the Environmental and Social Framework Management Process developed by the World Bank.
- In specific terms the HSDU will be responsible for performing the following processes in the IDB-financed project:
 - Performing environmental, social, and occupational health and safety analyses
 - Consulting parties affected by the project in the area of ESHS

- Implementing the environmental management plan
 - Implementing the social and occupational health and safety plan
 - Implementing the resettlement or compensation plan
 - Providing technical ESHS inputs for project procurement
 - Processing internal or external complaints in the ESHS area
 - Ensuring that contractors comply with ESHS regulations and standards
- The ESHS impact management processes during execution of the IDB-financed project will be performed by existing staff assigned full-time to the project and newly hired staff assigned full-time to the project. In terms of full-time staff, two personnel will be assigned to the IDB project (one personnel belongs to the Environmental Health Department and the other belongs to the Health Sector Development Unit). In terms of newly hired staff, at least one staff will be responsible for managing and monitoring ESHS impacts, assigned to the HSDU.
 - In the instance where the tasks are to be performed by existing staff in the MoH, these staff members have at least five years' experience in managing ESHS impacts and in particular, experience with IDB and World Bank projects. Additionally, staff will have the necessary time to allocate to the work required.
 - The resources that are needed to manage the IDB project's ESHS impacts but are not available in the MoH at this time include budget for expenses (implementation and monitoring of mitigation measures, training, communications, etc.); vehicles (for site visits) and; specialized equipment (e.g. sound quality meters, air quality meters, etc.).
 - To date, when there is a need to hire additional staff for the IDB projects, there has been no difficulty experienced in finding ESHS impact management specialists. In the context of Guyana, there exists a pool of ESHS specialists. Additionally, the level of stability among ESHS impact management specialists hired in the last five years to support execution of the MoH's public investment projects has been good. These specialists have generally stay until projects are completed.
 - The MoH has several relevant procedure manuals for the management of ESHS impacts areas. These include a Waste Management Manual (Not approved); Occupational Health and Safety Manual (Not approved); and Climate Change Manual (currently in draft and not completed). Within these manuals, processes for implementing the social and occupational health and safety plan are covered and can be applied to the IDB-financed project. However, these procedures are partly adequate for managing ESHS impacts in the IDB-financed project. The ESMS will outline recommendations regarding the completion and finalization of these key and relevant procedure manuals.
 - With reference to public investment projects executed by the MoH in the last three years, the opinions of stakeholders affected by these projects have been incorporated into the design through planned stakeholder consultations and engagements, which are key aspects to MoH's processes. Additionally, the MoH has not generated any monitoring reports on ESHS risks and impacts of public investment projects executed in the last three years. Further, public investment projects executed by the institution in the last three years, and more specifically with the World Bank funded project, have not experienced any systemic problems in relation to ESHS processes.

Based on these findings it was determined that the MoH generally has the capacity to undertake the implementation of the project and it was recommended that the HSDU serves as the PIU. However, it was noted that several areas of improvements are required. Regarding ESHS it was recommended that the PIU be staffed with an Environmental and Social Management Specialist to assist with the

implementation of the ESHS requirements.

3.6.2 Environmental Protection Agency

The EPA oversees the effective management, conservation, protection and improvement of the environment and takes the necessary measures to ensure the prevention and control of pollution, assesses the impact of economic development on the environment and the sustainable use of natural resources. The Agency is governed by a Board of Directors and falls under the direct supervision of the Office of the President. The Agency was established in 1996 by the Environmental Protection Act and is responsible for the development and enforcement of national environmental legislation and advises the GoG on the development and implementation of environmental policies and standards. It also undertakes the inspection and enforcement of matters dealing with the environment, conservation and natural resources and administers the environmental permitting process in Guyana.

In Sec. 4 (1) (a), of the Act, the EPA is given the mandate to *“take such steps as are necessary for the effective management of the natural environment so as to ensure conservation, protection and sustainable use of its natural resources”*. In addition, the Agency is given the overall responsibility to ensure management of the natural environment to ensure conservation, protection and sustainable use of its natural resources; assess any developmental activity which may cause an adverse effect on the natural environment before such activity commences; and coordinate and maintain a programme for the conservation of biological diversity and its sustainable use. The EPA is mandated to ensure that any project that may have a significant impact on the environment must acquire environmental authorisation from the EPA. Projects are considered to have an environmental impact when they threaten the health, safety and natural life supporting systems of humans and other living things.

The EPA issues environmental authorisation in the form of Environmental Permits for projects ad these permits cover both the construction and operation phases. The MoH should approach the EPA to determine if environmental authorization will be required for the construction works to be done at the three hospitals as well as for the operations of the facilities. If Environmental Permits are required the EPA will include as conditions of the Permits measures to be implemented to ensure compliance with the environmental requirements. The EPA will also monitor the construction and operational activities to ensure compliance, and will request the submission of annual environmental reports.

3.6.3 Central Board of Health

The purpose of the Central Board of Health is to promote, protect and advocate for optimal public health for all Guyanese through consistent, quality services extended to all communities throughout the country. Among the responsibilities include framing regulations and providing advice to the Minister on all matters concerning health. The Board consists of the Chief Medical Officer, who is the Chairman, and representatives from key agencies and regional/municipal authorities.

3.6.4 Regional Agencies

Since 1986, the responsibility for the delivery of health services lies with the Regional Democratic Councils (RDCs). Funding was through the Ministry of Local Government. The Ministry of Health retained responsibility for vertical health programmes, and provision of human and technological resources to the RDCs. The Regional Health Officer (RHO) has oversight of all primary health care facilities and the district/regional hospitals. The national and regional hospitals in Regions 4 and 10 are directly administered by the MoH or are independent entities. In Region 4, four national hospitals, including the GPHC are self-managed or under the MoH and not under the remit of the RDC. In Region 10, Linden and Kwakwani Hospitals are under the direct purview of the MoH as well. Those health facilities at the regional level, their budget and expenditures are done by the Regional Executive Officer (REO). Additionally, all human resources decisions must be initiated at the regional level by the REO

and go through the Public Service Ministry (PSM) process¹³. Figure 3-1 below presents the regional to national institutional structure in existence since 1986.

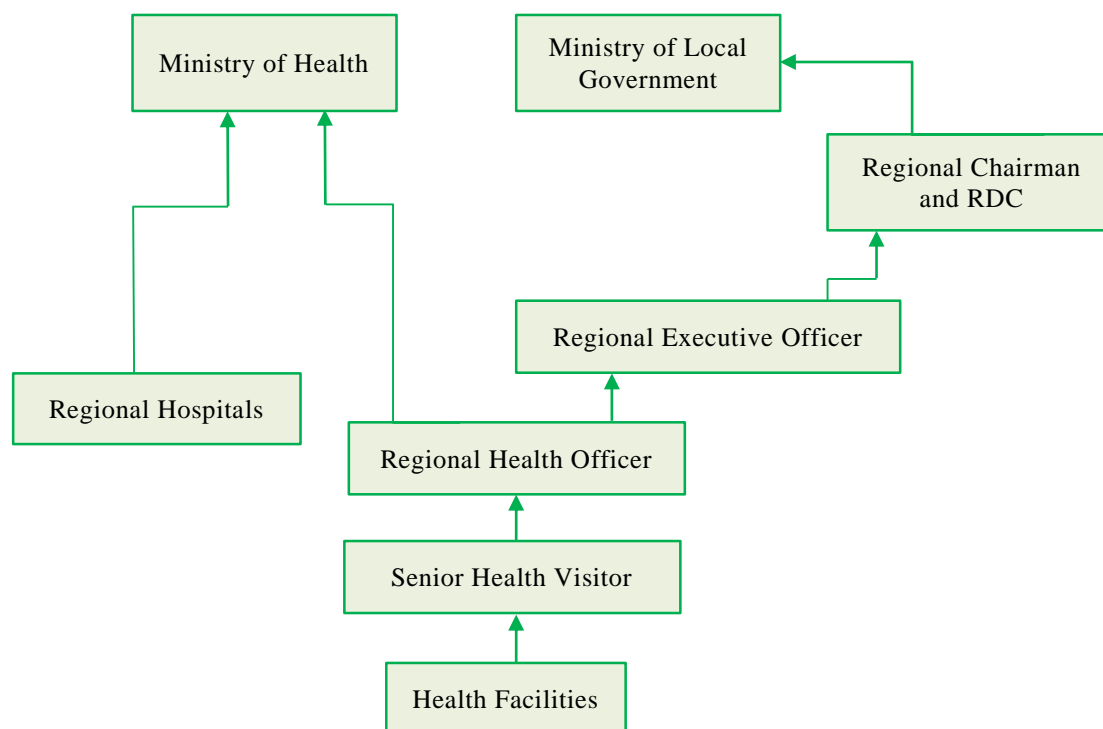


Figure 3-2: Regional to National Health Administration Reporting Structure

Source: Guyana Health Systems Assessment 2010

The Regional Health Authorities Act 2005 gave the Minister of Health authority to create RHAs, a move away from the existing RHO structure, and being autonomous from the RDC in terms of strategic direction and financing, and under the oversight of a board of directors (with representation from the MoH, the RDC, business groups, and provider organizations). It was envisioned that the RHA would be managed by an appointed CEO and have control over its budget, expenditures, human resources, and administrative decisions. In return, it would sign a service agreement with the MoH that bounds it to certain targets. The RHA Board, as the signatory to the service agreement, would be accountable to the Ministry of Health for achieving specific performance indicators, with targets as laid out in the service agreement¹⁴.

3.6.5 Regional Democratic Councils

The Regional Democratic Council (RDC) is the body responsible for local government and administration in the Regions and has a mandate to:

- To support administration of all services required within its boundaries (services such as health, education and public works among others). In this regard, relevant duties of RDCs include the maintaining and protecting of public property, protecting and improving the physical environment, and improving living and working conditions.

¹³ Health Systems 20/20 and the Guyana Ministry of Health. October 2011. Guyana Health System Assessment 2010. Bethesda, MD: Health Systems 20/20, Abt Associates Inc.

¹⁴ Guyana Health Systems Assessment, 2010

- To coordinate the activities of the Local Democratic Councils and provide such cooperation and support as required. It should be noted that the RDC has some power delegated to it by the Minister responsible for Local Government.
- To develop regional facilities, as it deems necessary.
- To identify economic (revenue earning) projects and assists the Administration in executing works necessary for the development of the region.

The New Amsterdam Hospital is programmed under the RDC of Region 6 and as such the RDC has oversight of the Hospital. The hospital's budgetary allocation, strategic planning, and overall administration is the responsibility of the Regional Health Officer (RHO) and the Regional Executive Officer (REO).

3.6.6 Georgetown Public Hospital Cooperation Management Committee/Board

GPHC is Guyana's national referral hospital. It operates independently, preparing its own budgets, managing human resources, and directing procurement. It has its own board of directors that oversees the operation of the hospital. The board includes representation from a wide range of stakeholders including unions and line ministries. Through its operational independence and CEO approval, the GPHC has developed innovative practices such as creating new health worker positions, developing incentive programs, and improved efficiency in hiring employees¹⁵.

3.6.7 City and Town Councils

The City Council of Georgetown and New Amsterdam and Linden Town Councils are a function of local government and are responsible for the smooth operation of neighbourhood development, including solid waste management, operation of markets, drainage, and road and dam upkeeps. The Councils within which the targeted hospitals are located will have roles to play in approving the works to be done, including approval of building plans. They may provide services such as waste collection and disposal to the project during construction and operation.

3.7 National Environmental Framework in relation to the IDB ESPF and the Project

Guyana's national environmental framework, as described in Sections 3.2.2 and 3.3.1 has been applied to IDB and other donor financed projects in Guyana. As it relates to the implementation of the Health Care Network Strengthening Project, national legislation and guidelines adequately address the potential project impacts. The project impacts are most likely to occur during the construction phase and from construction activities and which include noise and dust generation, waste management and occupational and public health and safety. These are adequately covered by national legislation and guidelines. During the operational phase the likely impacts relate to waste management and occupational safety, which are also covered by national legislation and guidelines. As such, there is no significant gap between the national legislation and guidelines and the IDB's ESPS. However, in some cases, the legislation are dated. In addition, the ESPS are more comprehensive and explicitly favourable to affected parties than the provisions of the national legislation. As such, in the event of divergence between the two, the requirements of the ESPS takes precedence.

The Environmental Protection Act sets out the procedures as it regards securing environmental authorization for projects, from the application process and it's requirements, screening of the application, and guidance as it regards environmental impact assessments if these are required. Requirements for public disclosure of project applications, the decisions of the EPA, as well as during environmental impact assessment processes, are set out in the Act.

¹⁵ Guyana Health Systems Assessment, 2010

Section 3.3.2 also outlines Regulations which have been established under the Environmental Protection Act, and the national standards which have been developed and instituted. In instances where there are no national standards, the Agency is guided by and utilises guidelines of reputable international organisations such as the World Health Organisation (WHO) and the United States Environmental Protection Agency (USEPA) among others. This is the case for example with air quality standards.

The MoH should approach the EPA to determine if environmental authorization will be required for the construction works to be done at the three hospitals as well as for the operations of the facilities. If Environmental Permits are required, the MoH would be expected to prepare and submitted an application for environmental authorization (a standard form is available on the EPA's website <https://www.epaguyana.org/epa/forms-downloads/application-forms-for-environmental-authorisation/category/2-application-forms-for-environmental-authorisation>).

As part of this submission, the ESA and ESMP framework, SEP and Grievance Mechanism should be included as supporting documents. Considering that these are existing facilities, the EPA will determine if there are any additional submissions/requirement needed in order to process and provide Environmental Permits. The decision of the Agency would be made public and there is a period of 28 days for any objections to this decision.

Pending no objections, the Agency could move to issue Environmental Permits once all the required information have been submitted. The Permits are likely to include conditions in relation to measures to be implemented to ensure compliance with the environmental requirements. The EPA is likely to also monitor the construction and operational activities to ensure compliance, and request the submission of annual environmental reports.

4.0 PROJECT ENVIRONMENT

The hospitals selected under the project for infrastructural extensions and upgrades are located in Regions 4, 6, and 10. In Region 4 the GPHC is located in Georgetown, the capital city of Guyana, in Region 6 the New Amsterdam Hospital is located in New Amsterdam, the main town for that region and the second main town after Georgetown, and in Region 10, the Linden Hospital Complex is located in the township of Linden, the only town in that region.

4.1 Physical Setting

4.1.1 Geology and Natural Regions¹⁶

Guyana is located in the northern part of South America, between 1 and 9 North latitude and 56 and 62 West longitude and has a total area of 214,970 square kilometers. Guyana is bordered by the Atlantic Ocean to the northeast, Venezuela to the west, Suriname to the east and Brazil to the south and southwest. Guyana is part of the Guiana Shield, a vast Precambrian cratonic area underlying French Guiana, Guyana, Columbia, Brazil and Venezuela. This proterozoic basement in Guyana dips in a northerly direction and extends below the continental shelf (Daniel, 1984). Structural evolution of the Guiana Basin originated with the breakup of the supercontinent Pangaea leading to the present passive margin basin.

Landforms in Guyana appear to be the surface manifestation of its underlying geology and the country is divided in to four geomorphological regions: the Coastal Plain, the Sandy Rolling Land, the Pakaraima Mountain Region and the Pre-Cambrian Lowlands. The boundaries of these geomorphological regions closely follow the boundaries of its geological formation. Table 4-1 presents a description of these geomorphological regions.

Table 4-1: Description of the Geomorphological Regions

Geomorphological Region	Description
The Coastal Plain	This region occupies a narrow strip of land lying parallel to the coast and is underlain by the Corentyne group of rocks. Morphologically it may be divided into the old coastal plain and the young coastal plain. This region covers an area of 9,128 square kilometers or 4.3 percent of the country's land area.
The Sandy Rolling Land/Hilly Sand and Clay Region	This region is underlain by the Berbice Formation or White Sands Formation of the Plio-Pleistocene age. It lies inland between the Coastal Plain and the crystalline rock outcrops further south. This region covers an area of 28,995 square kilometers or 13.7 percent of the country's land area.
The Pakaraima Mountain Region	This region is underlain by sandstone interbedded with conglomerates and shales of the Roraima Formation. The region lies in the mid-southwestern part of the country and has a series of elevated plateaus at varying heights of which the highest is Mount Roraima at 2773

¹⁶ Daniel, J.R.K., 1984. Geomorphology of Guyana. An integrated study of the natural environment. Occasional Paper No.6. Department of Geography, University of Guyana.

Geomorphological Region	Description
	meters. This region covers an area of 156,747 square kilometers or 74 percent of the country's land area.
The Pre Cambrian Lowlands (Description after Daniel, 1984).	This is the largest of the geomorphological regions and it forms a gently undulating territory at a general elevation of 90 to 120 meters. The peaks rise to over 300 meters in the north and 900 meters in the south. With the exception of the savannah in the southwest it is mostly under a thick forest. This region covers an area of 16,986 square kilometers or 8 percent of the country's land area.

Guyana is usually considered to consist of four (4) main natural regions; Coastal Plain, Hilly Sand and Clay Region, Interior Savannas and Forested Highlands.

The Coastal Plain is a narrow belt (ranging between 8 and 65km in width with a length of 440km) stretching from the Corentyne River in the east to Waini Point in the west. This area provides most of the agricultural production in the country and is also where more of the population resides and economic activities are conducted. Many areas of the coastal plain are below sea level while other areas are man-made and built-up to raise them above the surrounding land level. East of the Essequibo River the plain consists of recent and old sediments with recent deltaic and fluvio-marine clays and silts occurring on the coast with silty clays and sands inland. The recent plain occurs at elevations of 2m below to 3m above sea level with sandy old beach ridges forming higher ground. The older coastal plain lies at an altitude of about 3-9 m above sea level. The normal tidal range is about 3m with resultant flooding (particularly sea invasion) especially during the wet seasons from April to August and November to January and during high tides. An elaborate system of sea defences, along with irrigation and drainage canals, is required to protect the area from flooding. The GPHC and the New Amsterdam Hospital are located on the Coastal Plain.

The Hilly Sand and Clay Region is found just inland of the coastal zone, although not in the north-west of the country. This region is also known as the 'White Sand Plateau' in the north-east and centre of Guyana. The area is gently undulating with altitudes varying from about 15m above sea level close to the coast to 150m in the south. The White Sands overlie brown sands and the unit also contains deltaic sands and clays, laterite gravels and bauxite, and is deeply dissected in the centre north of the area. In the north-east and corresponding to the greatest extent of white sand the plain has a distinctive vegetation of Wallaba and Dakama forest, Muri scrub and savannah grasslands. The white, sandy soil is permeable and low in nutrients, and forms the most vulnerable ecosystem in Guyana. The Linden Hospital Complex is located in the Hilly Sand and Clay Region.

The Forested Highlands make up the bulk of the country and are often divided into the Western Highlands and Southern Uplands. The Western Highlands comprise the border of Venezuela and Brazil, and are rugged igneous and metamorphic mountains that are densely forested and virtually inaccessible. Topographically, it is a dissected upland with steep tabular hills and mountains cut by deep gorges. Rivers are fast flowing within deeply dissected terrain, creating deep gorges and waterfalls. The Southern Uplands region is bordered by Brazil and Suriname and consists of four mountain ranges with elevations of 300-1,200m. Access to these forested ranges is very limited.

The Crystalline Shield Uplands occur in the north-west and south-east of Guyana and is part of the larger Guiana Penplain. The unit is described as a monotonous continually rolling to hilly land, dominantly forested. The Highlands, Mountains and Plateaus unit corresponds primarily to the Pakaraima Mountains but also includes many isolated mountainous areas (inselbergs) within the Crystalline Uplands in the north-west, centre and south of Guyana as well as including the Kanuku

and Açarai Mountains.

The Interior Savannas account for about 8% of the country's area and are vegetated by grasses, scrub and low trees. The Rupununi savanna is divided into the northern and southern savannas by the Kanuku Mountains. The savanna itself is generally flat but in places is more dissected with an undulating topography, particularly to the north and east of the Kanuku range. The northern savannas are characterised by large areas of wetlands caused by the backflow of the Takutu and Ireng Rivers during the Amazonian wet season while the southern savannas are composed of pre-cambrian aged rocks. The northern savannah plain lies at an altitude of about 100-110m and the Pakaraima Mountains rise abruptly from the plain to altitudes of 610m and reach heights of 990m at their highest. The Kanuku Mountains rise to 760-840m. The southern savannahs are characterised by a relatively flat plain at a height of 100-120m with granitic inselbergs rising abruptly from the plain to heights of 760m.

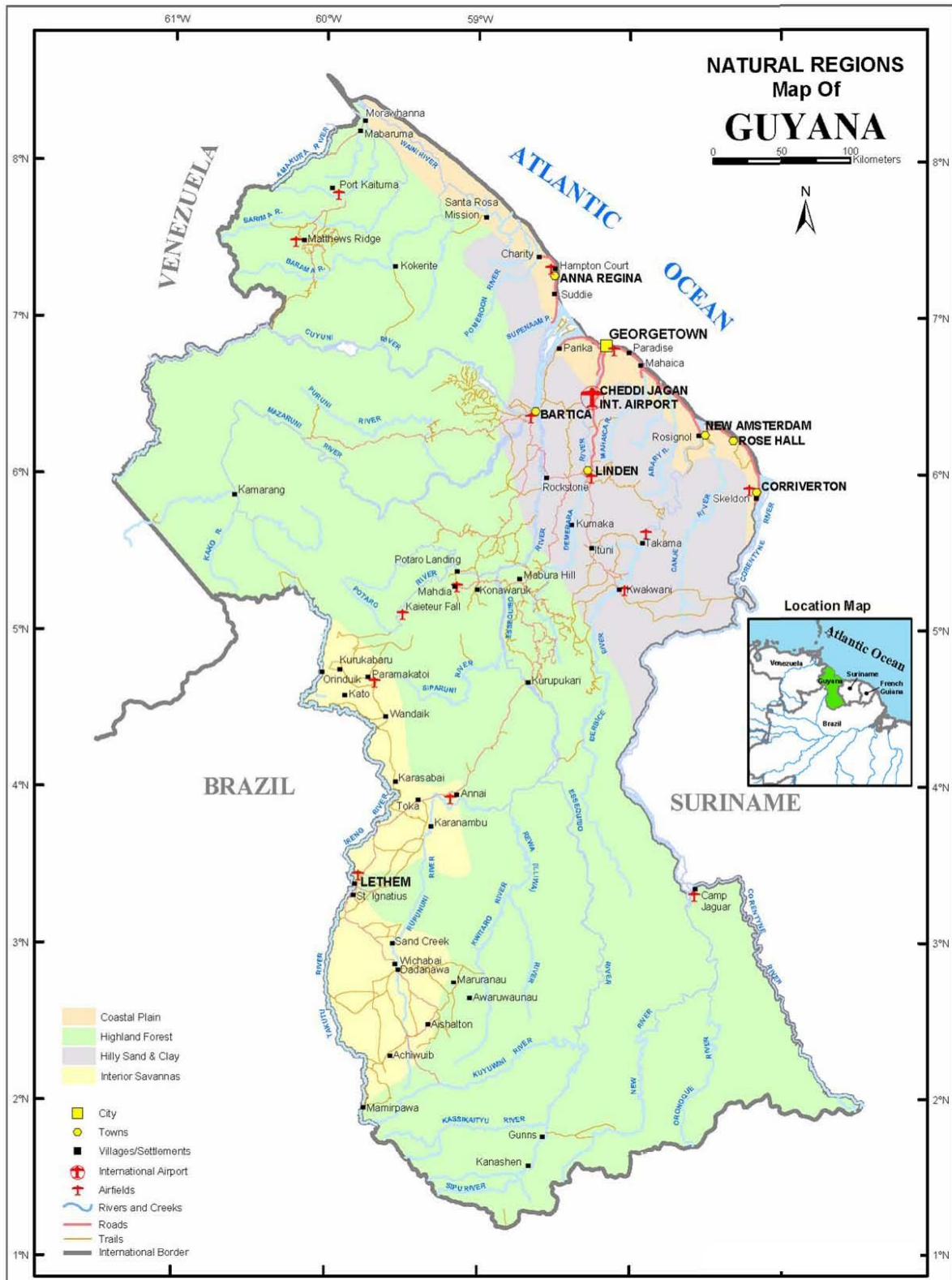


Figure 4-1: Natural Regions of Guyana

4.1.2 Meteorology/Climatology¹⁷

Guyana's climate is influenced primarily by the seasonal shifts of the Inter Tropical Convergence Zone (ITCZ) and the seasons and climate are determined mainly by the variation in rainfall patterns. Guyana is located in the equatorial trough zone and has a tropical climate characterized by a high but variable rainfall, high humidity and a relatively warm temperature with a minor range and with two wet and two dry seasons.

The ITCZ is a cloud and rain-bearing belt of rising air where south-easterly and north-easterly trade winds converge. Most places in Guyana experience a bimodal annual cycle of rainfall with distinct wet seasons. The first rainy season is the primary wet season and extends from mid-April to the end of July and the secondary wet season occurs from mid-November to January. The periods in between are often referred to as primary dry (long) season and secondary (short) dry season respectively. However, rainfall can occur at any time. A unimodal annual wet cycle (mid-April to August) is observed over the southernmost part of Guyana – the Rupununi Savannahs¹⁸.

Along the coastal plain rain falls an average of 200 days a year, with 50 percent of the average rainfall occurring from mid-April to mid-August. The second wet season is mainly in December and January. The wet seasons begin in the west of the country and moves to the east, ending with their retreat back to the west giving longer wet seasons in the west of the country. In the drier savannas there is only one wet season from April to August and most rainfall occurs from April to May. Annual averages of rainfall are 2,500 millimetres near the Venezuelan border and 2,300 millimetres in Georgetown. The average in the Rupununi Savannahs ranges between 1,400 and 1,800 millimetres. Areas on the northeast sides of mountains that catch the trade winds average as much as 3,500 millimetres of precipitation annually. When the ITCZ is strong (late April to early July), abundant rainfall is experienced but when it is weak rainfall may be absent.

On an inter-annual and decadal basis, Guyana's climate is influenced by the effects of the El-Niño Southern Oscillation (ENSO) which is a naturally occurring phenomenon that involves fluctuating ocean temperatures in the equatorial Pacific. El Niño and La Niña events affect the rainfall pattern and sometimes result in drought and flood conditions respectively. During El Niño years, there is a reported weakening of the trade winds and a move to drier conditions; during La Niña years there are stronger than average trade winds and significantly higher precipitation levels¹⁹.

Guyana's coast is subject to the north-easterly trade winds with speeds of about 6 meters per second. This moderates the hot and humid conditions. Mean air temperature ranges between 25 to 27.5°C throughout the year in most regions except the upland regions in the interior/west of the country, where mean temperatures are cooler and range between 20 to 23°C.

Average wind speeds for Guyana are typically 6 miles per second. However, between July and August, stronger westerly winds, which influence the prevailing wave climate, are experienced. Wind speeds also vary seasonally. During the dry season, the strongest winds are experienced between January and April when the northeast Trade Winds dominate. Wind speeds range, on average, between 9 (wet season) and 12 kilometers per hour (dry season).

The overall relative humidity in Guyana is generally above 70 percent. Relative humidity is high averaging about 70 percent in the Savannahs, 80 percent on the coast and 88 percent in the rainforest. Morning fog can be widespread and persistent in the hinterland districts.

¹⁷ This section was mainly compiled using information contained in the National Land Use Plan (2013)

¹⁸ Government of Guyana, 2012. Second National Communication to the United Nations Framework Convention to Climate Change.

¹⁹ Ibid

As a result of Guyana's proximity to the equator there is little variation in the hours of daylight. It varies from a minimum of 11.6 hours per day in December to a maximum of 12.5 hours per day in June. Bright sunshine is influenced by rainfall and during the rainy season the coast can experience an average of 6 hours per day.

The coast is situated in the tradewinds but tropical storms or cyclones do not occur in this area. Guyana lies south of the path of Caribbean hurricanes and therefore does not experience tropical storms or hurricanes.

The climatic regions of Guyana are shown in Figure 4-2. The GPHC and LHC are located in the wet climatic zone while the NARH is located in a moderately wet climatic zone.

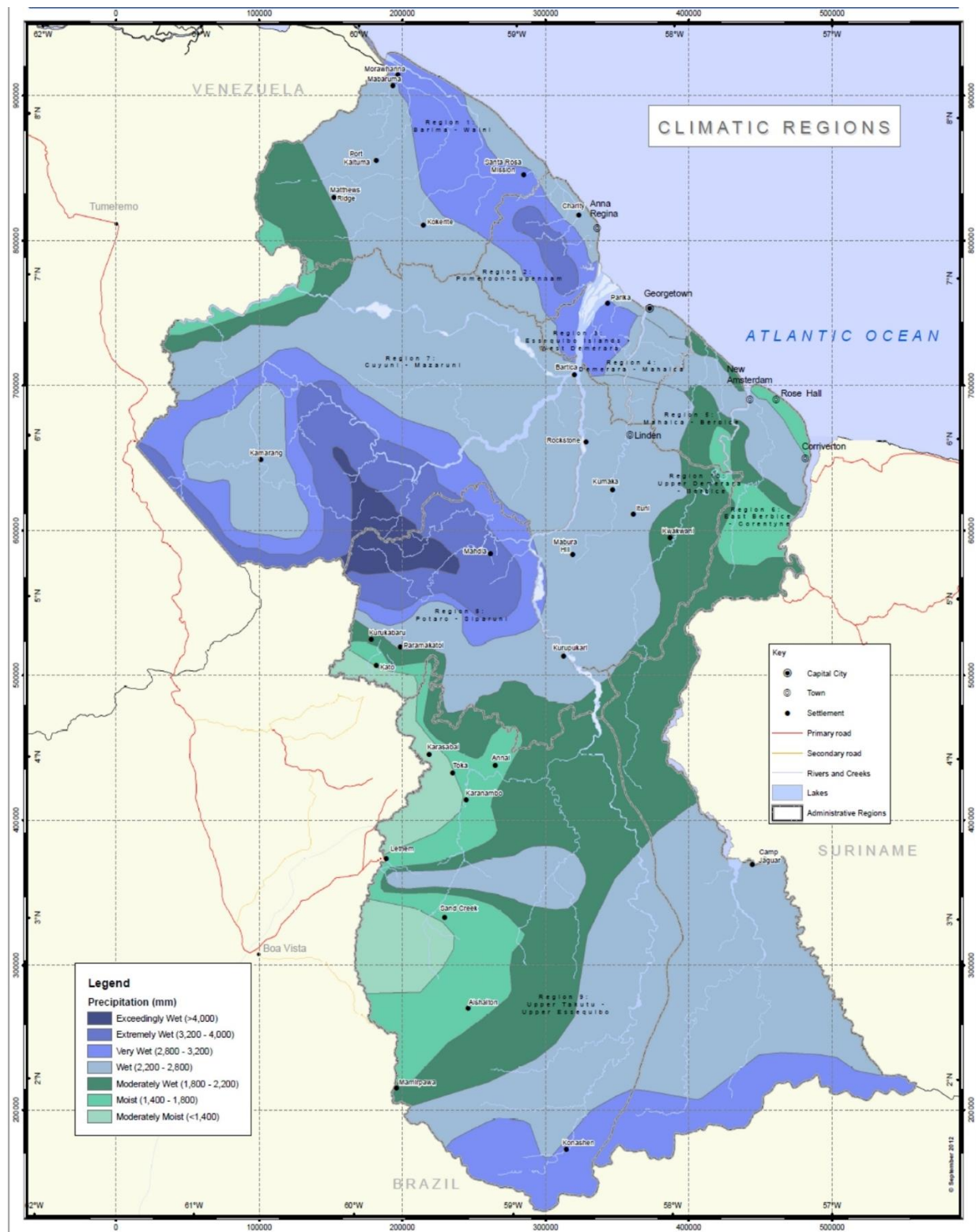


Figure 4-2: Climatic Regions in Guyana

4.1.3 Water Resources²⁰

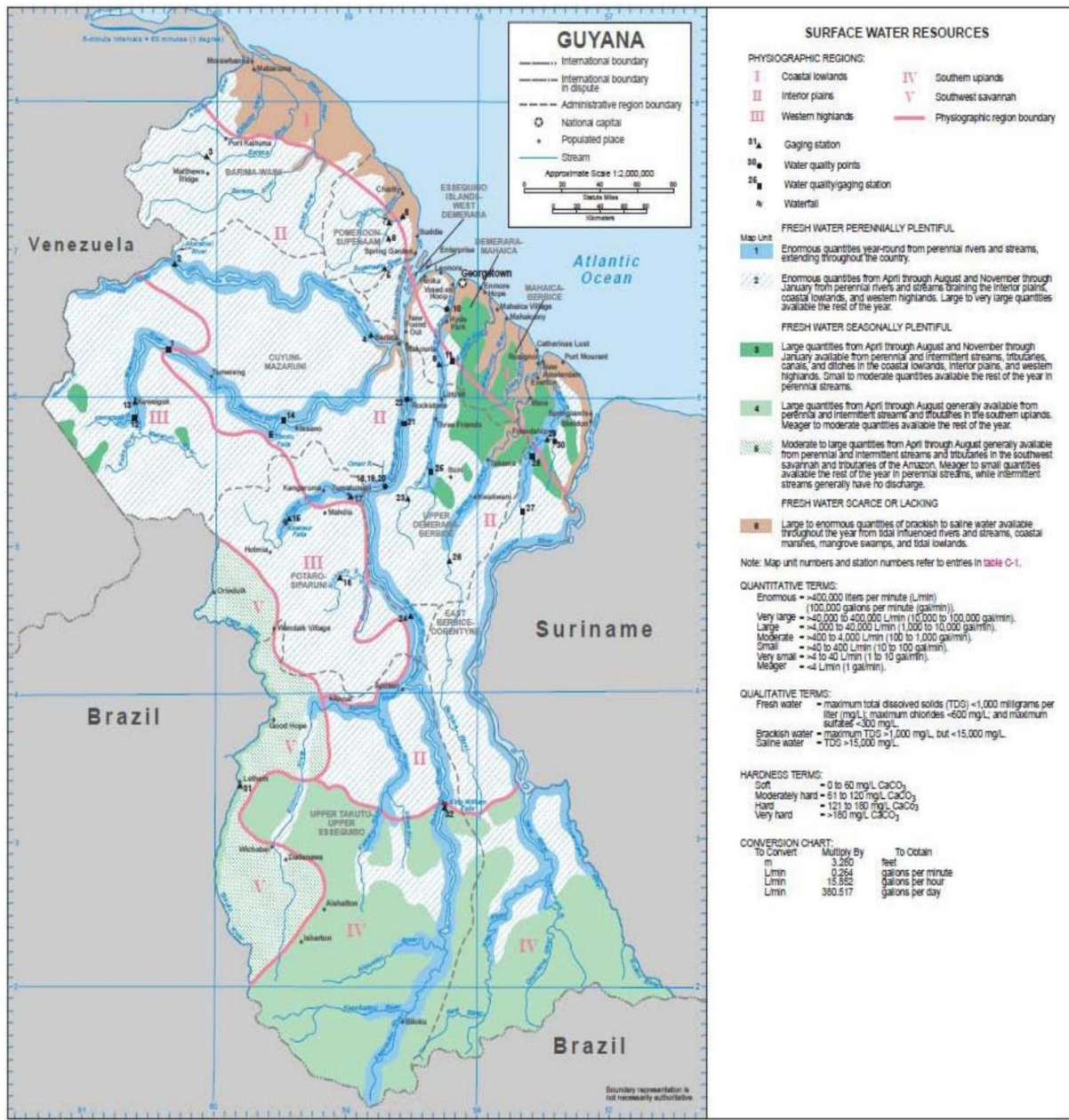
Guyana, meaning 'land of many waters,' is rich in water resources. The most recent study of national water resources was undertaken by the United States Army Corps of Engineers in 1998. The study shows that the majority of the country has perennially plentifully available fresh water with enormous (defined as greater than 400,000 litres per minute) quantities available for 8 months of the year (wet seasons) and large (4,000 to 40,000 litres per minute) to very large (40,000 to 400,000 litres per minute) quantities available for 4 months of the year. Exceptions include the coastal plain backlands, Rupununi Savannas and Pakaraima Mountains and the far south of the country where water is seasonally plentiful. Only in the coastal frontlands is water scarce or lacking with large to enormous quantities of brackish to saline water available. The surface water resources of the country are shown in Figure 4-3. The assessment of groundwater resources showed that fresh groundwater was generally plentiful on the coastal plain, white sands plateau and in the Takutu basin with other inland areas having only pockets of fresh groundwater in largely unexplored aquifers. The groundwater resources of the country are shown in Figure 4-4.

A measure of the relative water 'richness' of a country or region is the annual per capita water resource availability. This is a simple indicator of whether an area is in a state of water scarcity or water surplus, based on the total runoff of the area in question. Generally, annual per capita water availability above 2,000 cubic meters is considered relatively safe. Guyana has an annual per capita water availability of 314,963 cubic meters indicating an enormous water surplus. Another way of indicating this is to note that the population of Guyana would have to grow to 142 million before a state of water stress existed.

As a result of surface water supply shortages along the coast and in other areas, groundwater has been used to supplement domestic water requirements. Groundwater from the coastal aquifer system which consists of three distinct aquifers, provides about 90 percent of the domestic water for the country. Presently, these aquifers, particularly the 'A Sand' aquifer, provide ample water for the coastal population. However, from approximately 1913 to 1993, dewatering of the "A Sand" aquifer has caused the head to fall almost 20 meters.

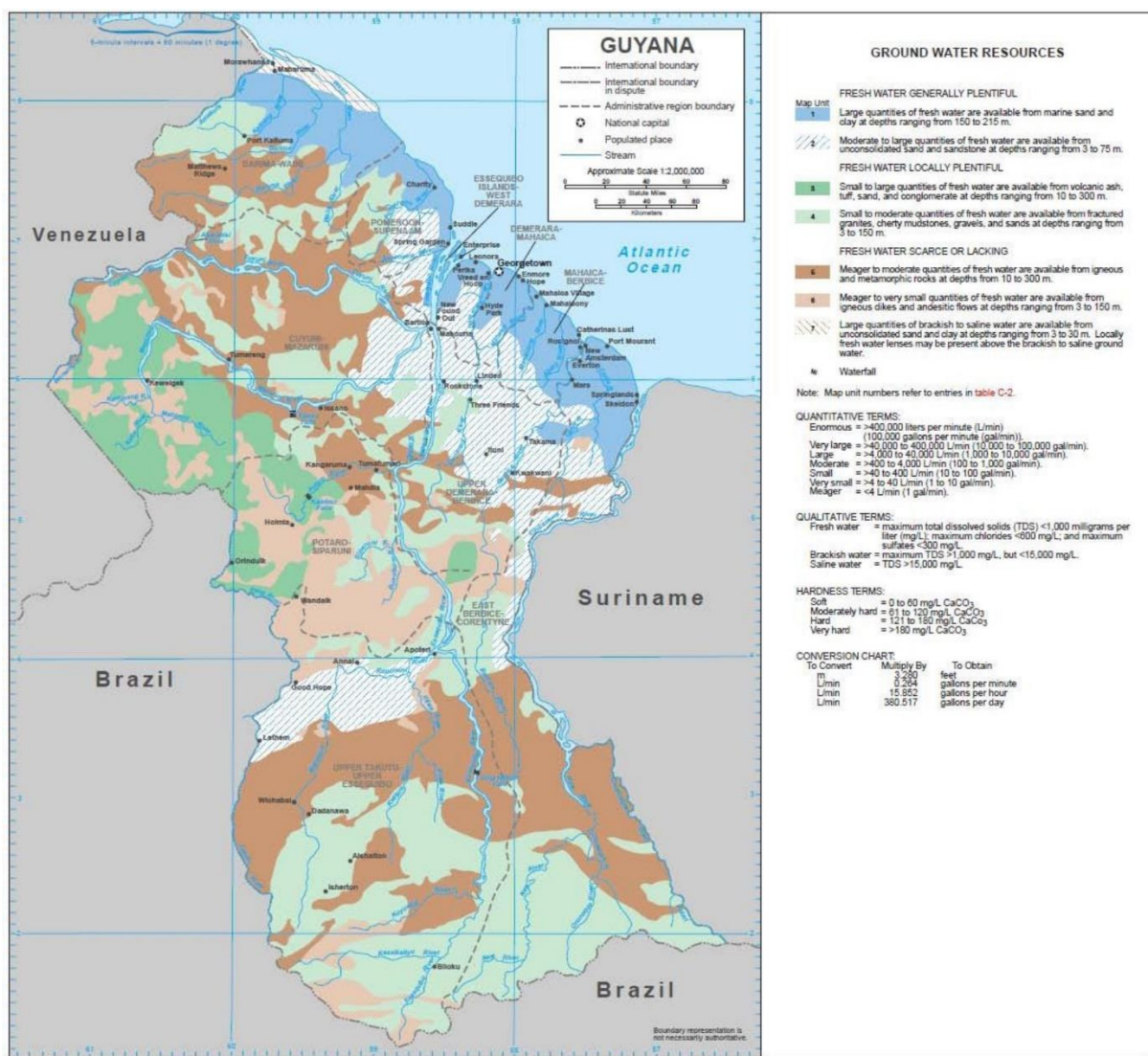
There are no official documents or information referencing water resources assessments in the Regions and areas of the facilities to be supported under the project. However, there is good availability of both surface and ground water resources within the wider project areas.

²⁰ Guyana Lands and Surveys Commission, 2013. National Land Use Plan (draft). Pages 22 to 23.



Source: United States Army Corps of Engineers (1998) as cited in the National Land Use Plan (Draft) 2013

Figure 4-3: Guyana Surface Water Resources



Source: United States Army Corps of Engineers (1998) as cited in the National Land Use Plan (Draft) 2013

Figure 4-4: Guyana Groundwater Resources

4.2 Ecological Setting

Guyana is located on the Guiana Shield which is situated in northeastern South America. It includes the large mountain systems that form the watershed between the Amazon and Orinoco Rivers. The Guiana Shield accounts for more than 25 percent of tropical forests remaining in the world. Its diverse landscapes have been recognized for their biological endemism, unique ecosystems, pristine forests, and cultural diversity. Generally, Guyana is considered a country endowed with relatively rich biodiversity and high endemism, due to four main factors: (1) the country's location at the edge of the species rich Amazon Basin; (2) its overlying position on the Guiana Shield²¹; (3) its strategic location on the Atlantic seaboard of South America that accounts for the marine and coastal environment; and (4) the country's history of low incidents and intensity of conversion of natural habitats. However, within

²¹ The Guiana Shield region covers 2.5 million square kilometers. It extends from Colombia in the west to the Brazilian state of Amapá in the east, including the Venezuelan states of Delta Amacuro, Bolívar and Amazonas, all of Guyana, Suriname and French Guiana, and continuing into the Brazilian States of Pará, Roraima and Amazonas. The region contains 10 to 15 percent of the world's fresh water reserves and an extremely rich diversity of plants and animals.

the general project area there is limited biodiversity due to human interactions and development activities over the last few centuries.

4.2.1 Ecosystems²²

The major ecosystems that can be distinguished within the country are (i) forest, (ii) freshwater, (iii) wetland, (iv) savannah, (v) coastal and (vi) marine. These ecosystems support diverse species to the extent that as of 2010 Guyana's species status was estimated as 8,000 plant species; 467 fishes; 130 amphibians; 179 reptile; 814 birds; and 225 mammals; 1,673 arthropod; over 1,200 fungi; 33 bacteria; 13 nematode; 44 algae; 17 molluscs; and an estimated 30 viruses.

According to the FAO²³, Guyana has a total of 1,182 native tree species of which 1 species *Vouacapoua Americana* is listed by the IUCN Red List as Critically Endangered. Three species; *Trichilia surumuensis*, *Aniba rosaedora*, *Virola surinmensis* are listed as Endangered and a total of 18 species are listed as Vulnerable.

No Critically Endangered mammals are known to occur in Guyana. The only Endangered mammal listed by the IUCN for Guyana is the Giant Otter (*Pteronura brasiliensis*). The only Endangered bird species listed in Guyana are the Sun parakeet (*Aratinga solstitialis*); Hoary-throated spinetail (*Synallaxis kollari*); and the Red siskin (*Carduelis cucullata*). Guyana has no listed Critically Endangered or Endangered freshwater vertebrates. Of the species known to occur in Guyana, 4.5 percent of mammals, 0.4 percent of birds, 3 percent of amphibians, 3.3 percent of reptiles and 0.3 percent of freshwater fish are threatened²⁴.

4.2.2. Flora and Fauna

The sites where the hospitals are located and adjacent areas are entirely cleared of the vegetation. In the areas surrounding the hospitals most of the vegetation was also cleared to facilitate development, which includes housing, schools and commercial buildings and road networks. There may be some secondary vegetation occurring in patches or along roads and trails in the wider area.

There are no rare, threatened or endangered species at the project sites and no special habitat or protected area are located in close proximity. Figure 4-5 shows Georgetown, New Amsterdam and Linden in relation to the national protected areas and other areas of important biological value.

²² Environmental Protection Agency, 2014. National Biodiversity Strategy and Action Plan 2012-2020. Pages 8 to 9.

²³ Food and Agriculture Organization of the United Nations, 2005. Global Forest Resources Assessment.

²⁴ World Wildlife Fund (WWF) - Guianas, 2012; Wetlands of Guyana – An insight into the ecology of selected wetlands with recommendations from WWF-Guianas.

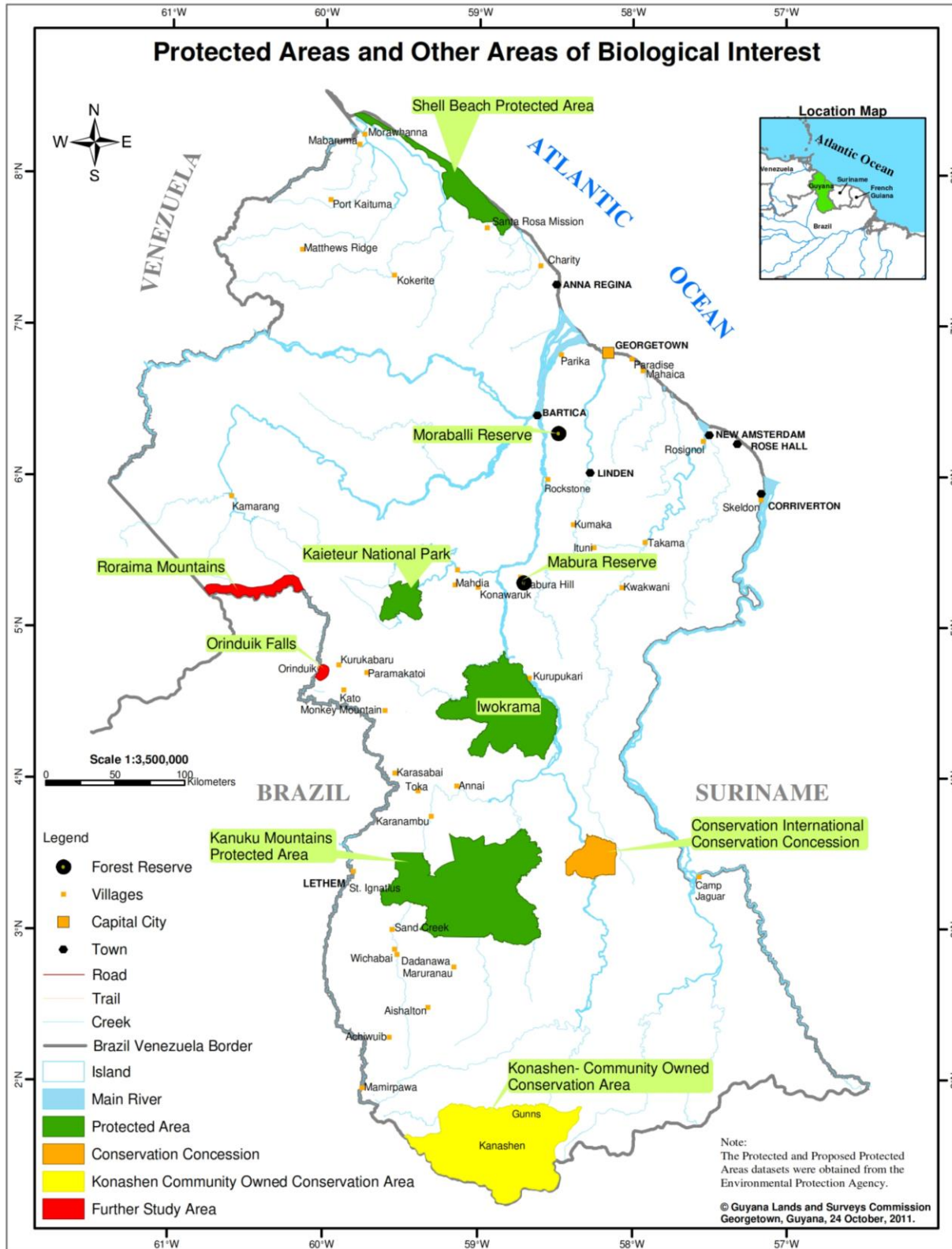


Figure 4-5: Georgetown, New Amsterdam and Linden in Relation to the National Protected Areas and other Areas of Important Biological Value

4.3 Social Setting

4.3.1 Population

In 2012, the reported population of Guyana was 746,955, based on the national census. Out of the total population taken in the census 49.8 percent were male and 50.2 percent were female. This situation reversed from the previous census conducted in 2002. As compared to the 2002 census, the population declined, with the rate of decline 0.06 percent per annum. Guyana experiences a high migration rate.

Guyana is divided into 10 administrative regions. Most of Guyana's population is located in the six coastal regions. According to the 2012 national census, nearly half of the country's population lives in Region 4, which includes the capital city of Georgetown. Table 4-1 summarizes the distribution of population within the 10 regions in 2012 and highlights the regions in which the facilities being considered are located – GPHC (Region 4); NARH (Region 6); and LHC (Region 10). The overall population density is very low at 3.5 people per square kilometer, although this varies from a high of 139 in Region 4 to a low of 0.34 in Region 9, with all inland regions having extremely low densities at fewer than 2.5 people per square kilometer and Regions 7, 8 and 9 having less than 1 person per square kilometer. Twenty-nine percent of the population is considered to be urban dwelling with 71 percent rural²⁵. There, the regions within which the three targeted hospitals are located have significant populations, as can be observed in the Table as highlighted.

Table 4-1: Regional Population Distribution in Guyana

Region		Population 2002	Population 2012	Population Change Since 2002	Percent of Guyana's Total Population
1	Barima-Waini	24,275	27,643	+13.9%	3.7%
2	Pomeroon—Supenaam	49,253	46,810	-5.0%	6.3%
3	Essequibo Islands—West Demerara	103,061	107,785	+4.6%	14.4%
4	Demerara-Mahaica (GPHC)	310,320	311,563	+0.4%	41.7%
5	Mahaica—Berbice	52,428	49,820	-5.0%	6.7%
6	East Berbice—Corentyne (NARH)	123,695	109,652	-11.4%	14.7%
7	Cuyuni-Mazaruni	17,597	18,375	+4.4%	2.5%
8	Potaro—Siparuni	10,095	11,077	+9.7%	1.5%
9	Upper Takutu—Upper Essequibo	19,387	24,238	+25.0%	3.2%
10	Upper Demerara—Berbice (LHC)	41,112	39,992	-2.7%	5.3%
Guyana		748,084	746,955	-0.6%	100.0%

Sources: Bureau of Statistics 2012; Bureau of Statistics 2002

4.3.2 Land Use

Guyana is sparsely populated and most activities within Guyana is concentrated on the coast where approximately 90 percent of the country's population lives and which comprises only approximately 7.5 percent of the country's total land area. The coastal area serves as the political, administrative and commercial centre of Guyana. The main coastal economic activity is agriculture. The coastlands are extensively drained for agriculture and irrigated by irrigation systems, which provide a supply of freshwater to the agricultural lands. Freshwater is captured and stored in conservancy systems along

²⁵ Guyana Lands and Surveys Commission, 2013. National Land Use Plan (draft). Page 75-76.

the coast. The greater portion of the arable land is owned by the State which leases land to various entities and individuals for rice and sugar cultivation. Private land owners are engaged in the planting of traditional crops of sugarcane, rice, citrus, coconuts and cash crops. Housing occupies a relatively small portion of the coastlands owing to the low population density and economic factors. Most persons reside in Georgetown and the other main towns. However, recently there has been a significant increase in housing development across the main populated areas, especially in Regions 2, 3, 4, 5 and 6. Most of the country's transportation infrastructure is found along the coast. Recently industrial type operations have been emerging, especially in the manufacturing and processing sectors.

Efforts are being made to decentralize activities away from the coast. Increasingly persons are engaging in activities in the hinterland and which is based on the utilisation of natural resources, including mining and logging. In the hilly sand region, the predominant land use is forestry and mining. Within the savannahs the main land use is agriculture, ranging from a few commercial ranches to subsistence agriculture practiced by Indigenous communities.

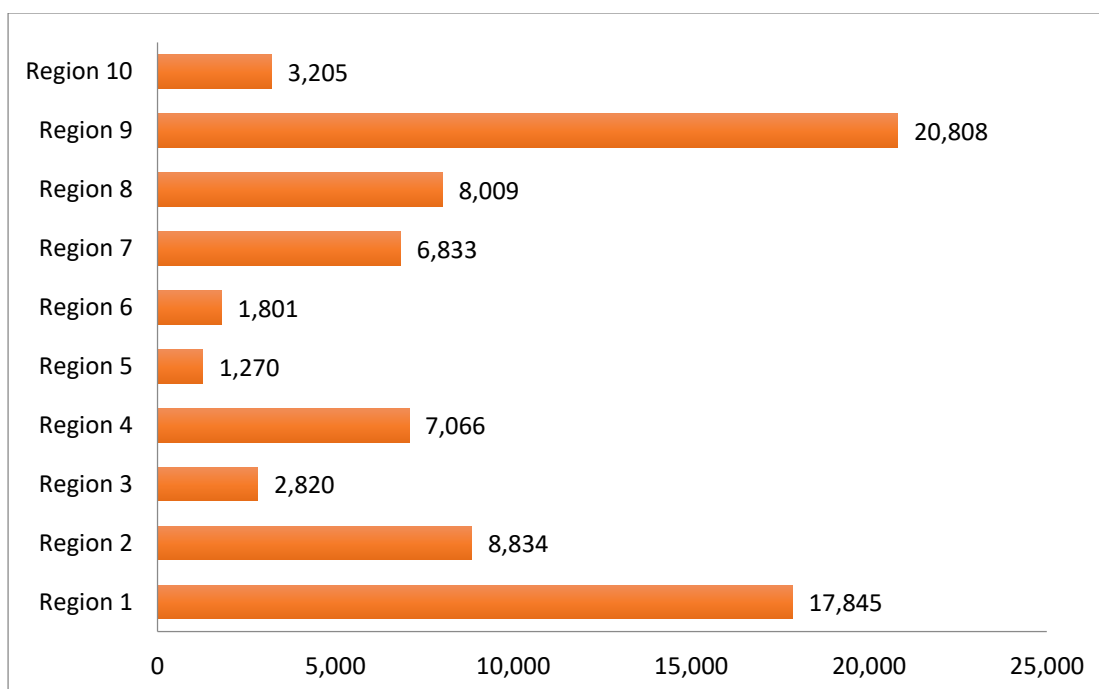
The land use within the areas where the hospitals proposed to benefit from the project are located varies, with those on coastal areas and main towns being surrounded by mixed land uses such as residential, commercial, administrative and agriculture.

4.3.3 Indigenous Population

The indigenous peoples or the Amerindians, as they are collectively referred to, are known historically as the first inhabitants of Guyana. Their history is recorded in their unique culture and heritage that have been passed on through generations using tangible and intangible methods. Guyana's key symbols of nationhood have originated from the indigenous culture and emphasizes the importance of the indigenous peoples contribution to Guyana. The history of the Guyanese indigenous peoples can be traced to 11,000 years ago when the Amerindians hunted, gathered, fished, settled and explored the country. There are nine indigenous nations that remain to this day: Arawaks (Lokonos), Arecunas, Akawaio, Caribs, Macushis, Patomonas, Wai Wais, Wapichan and Warraus. The Warraus, Arecunas, and the Caribs are found in coastal Regions 1 and 2; while the Wapichan, the Arecunas, the Makushis, the Wai Wais, the Akawaio, and the Patamonas inhabit the hinterland areas of Regions of 7, 8, and 9. Figure 4-6 shows the Amerindian Population within each Region.

According to the Bureau of Statistics²⁶, the indigenous population accounts for 78,492 or 10.5 percent of the total population of Guyana and is considered the fourth largest ethnic group in Guyana. Further, the Amerindians account for 85.9 percent of the total population in Region 9, 72.3 percent in Region 8, 37.1 percent in Region 7, 64.7 percent in Region 1, and 18.9 percent in Region 2. For the regions where the hospitals are located, although there is the presence of Amerindians, their percentage of the population is not as significant when compared with that of the other regions and they are located in remote areas away from the towns where the hospitals are located. The Amerindian population accounts for an average of 3.4 percent each of the total population in Regions 3, 4, 5, 6 and 10.

²⁶ Guyana National Bureau of Statistics, 2012. Guyana Population and Housing Census.



Source: Bureau of Statistics (2012)

Figure 4-6: Indigenous Population with the Regions of Guyana

4.3.4 Provision of Utilities

Within the coastal and near coastal areas there is adequate provision of utilities including electricity and water. Potable water is usually provided by Guyana Water Inc. (GWI) utilizing mostly groundwater sources. In some instances, water is supplied from conservancies and other surface water sources. Electricity is mostly provided by the Guyana Power and Light Company GPL). All three of the hospitals are located in coastal and near coastal areas and as such has access to these utilities.

In hinterland areas there is water supply in the main towns such as Mabaruma, Mahdia, Bartica, etc. However, water supply may only be available for certain times of the day and can be affected by electricity supply. Water supply in these areas consists of both ground and surface water sources. Surface water supply is usually affected during the dry seasons. Electricity is also provided in these main towns, although the supply may be limited to certain times of the day.

Within indigenous communities the water supply consists of both ground and surface water sources as well as rain water harvesting. However, pumping and distribution systems are limited and residents either have their own well or travel to surface water sources such as rivers and creeks to obtain water. Electricity supply is also limited, with person utilizing solar power or small generators.

4.4 Project Environment and Communities

This section presents a description of the communities within which the extension of the hospitals are expected to occur.

4.4.1 Georgetown, Region 4

Georgetown is located in Administrative Region of Demerara-Mahaica, Region 4, which extends east of the Demerara River to the western bank of the Mahaica River and is predominantly on the Low

Coastal Plain, with a small portion on the Hilly Sand and Clay Region in the south. The Region has an area of 2,165 square kilometers, and consists of urban neighbourhoods, sub-urban villages, and rural and farming communities. According to the Guyana National Census, the population of Region 4 is 313,429²⁷. A large portion of the population in the Region is concentrated along the coast, in particular, Georgetown.

The main economic activity of the Region includes business and commercial trade, farming and fishing, sugar production, administrative employment, import and export, tourism and hospitality.

Georgetown is the capital city of Guyana and is the main administrative and commercial district of the country. It was established in 1781 by the British colonial government. The 2012 census reported that Georgetown has a population of 134,49, representing roughly 20 percent of the country's population.

Georgetown was built around a drainage system originally used to drain sugar cane plantations. The city also lies below mean sea level, and is bordered by the Atlantic Ocean to the north and the Demerara River to the west, making it highly prone to flooding. As a result, the city is drained regularly by interlaced canals protected by kokers to prevent and reduce flooding. A long sea wall on the shores of the Atlantic Ocean also helps prevent flooding.²⁸

Guyana's capital is serviced by inter-connected tarmac roads and bridges. It also has a seaport along the eastern bank of the Demerara River. The Demerara River is navigable by ocean-going vessels up to roughly 100 km upriver. The Cheddi Jagan International Airport is located 41 kilometers south of Georgetown and is the country's primary international air transportation hub. Regional and domestic airlines mainly operate from the Eugene F. Correia International Airport at Ogle on the East Coast of Demerara.

Georgetown hosts the Seat of Government, National Assembly, and the upper courts such as the High Court and the Court of Appeal. Other administrative and public services that exist with Georgetown are the Police Head Quarters, Guyana Teachers' Union, Central Immigration and Passport Services. Other services that are located in Georgetown are Embassies, Consulate, and other functionaries of the Diplomatic Corp. and the United Nations. Georgetown is the main administrative district for the functioning of Government business, with decentralized satellites in other regions managed by the regional offices. Public services such as health, education, and other social services are overseen by the central ministry, and administered by the region. Land uses within Georgetown around the hospital vicinity can be observed in Figure 4-7.

The City of Georgetown is administered by the Georgetown Mayor and City Council (GM&CC) under the Municipal and District Councils Act headed by the Mayor, Deputy Mayor, and Town Clerk. The Town Clerk is the administrator and the Mayor, Deputy Mayor and other members of the Council are elected by the constituencies in the local government election, and are responsible for making decision, instituting policies and by-laws, and managing waste within the township.

The City is connected to the national grid and receives power from GPL. The power supply is fairly reliable, with scattered fair to moderate service interruptions. There are a high number of commercial and residential buildings that have integrated solar energy and backup generators as a power supply alternative or to be used in conjunction with GPL.

The City water supply is generated from GWI from a number of treatment plants and wells. The city experience fair – moderate water supply, however reservoirs such as black tanks are utilized for water storage and treatment by residence and commercial businesses.

²⁷Bureau of Statistics Guyana Population and Housing Census, 2012

²⁸ Remmers, Muller, Montfort, Focks, Vijn, Dorrepaal, & Wijngaarden, Analysis of drainage system in Georgetown, Guyana, 2016.

Other essential utilities such as telephone, internet and data services are available from a number of providers. Guyana Telephone and Telegraph Company (GTT) is the only provider of landline services within the country.

Solid waste collection management is the responsibility of the GM&CC. However, this service is often substituted by private waste collection services and transported to the Haags Bosch Sanitary Landfill.

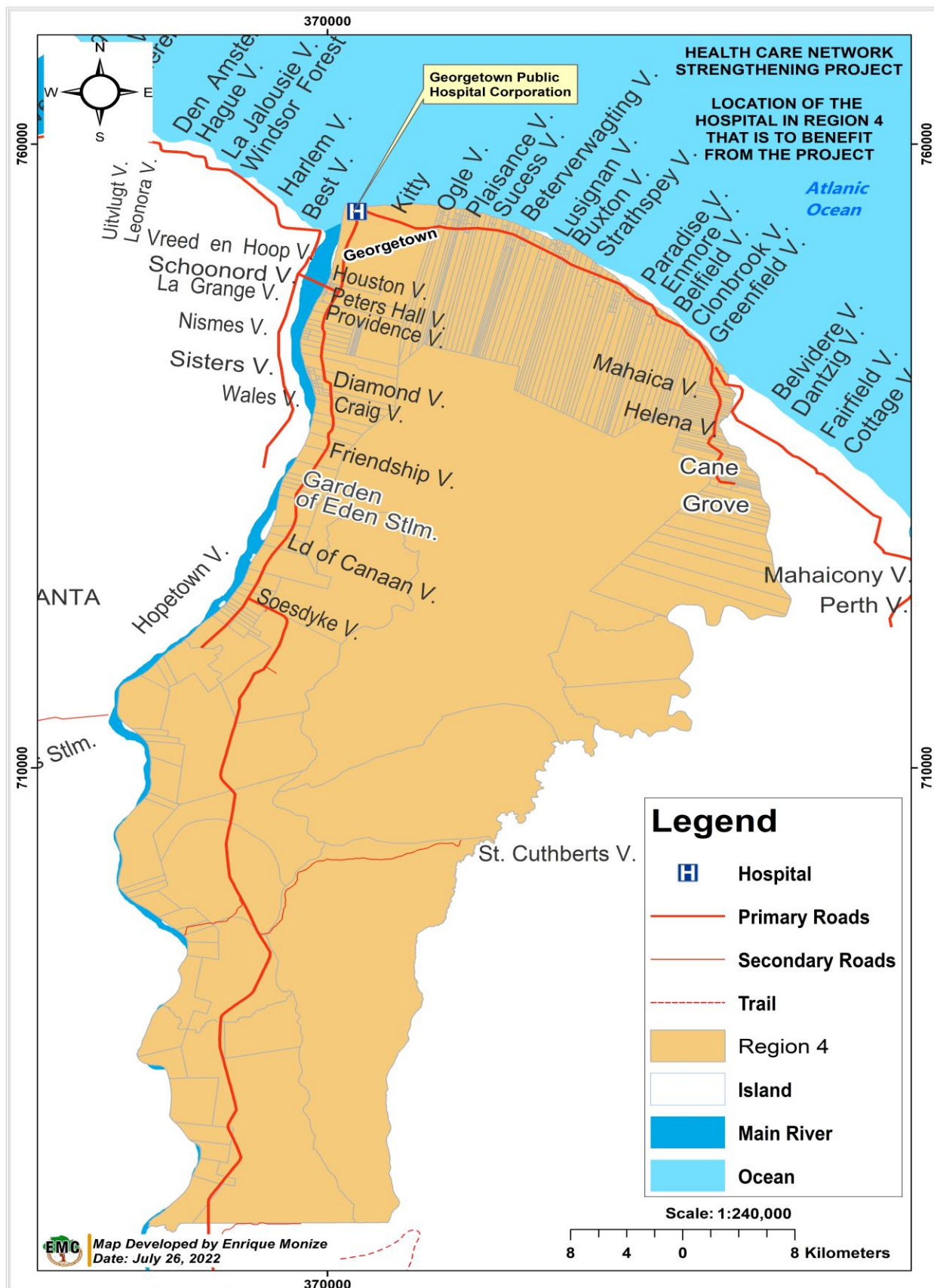


Figure 4-7: Location of the GPHC within Region 4

4.4.2 New Amsterdam, Region 6

New Amsterdam is located in East Berbice – Corentyne, Region 6. Region 6 is bordered by the Atlantic Ocean to the north, Suriname to the east, Brazil to the south, and the regions of Mahaica–Berbice, Upper Demerara -Berbice, Potaro Siparuni, and Upper Takutu – Upper Essequibo to the west. The Region spans 36,234 km square. The Corentyne River forms the whole of the eastern border with Suriname. Region 6 has a population of 109, 431 as per the 2012 National Census.

The East Berbice - Corentyne Region is made up of four natural regions which are, the coastal plain, savannah, hilly sand and clay area, and forested highland. The main economic activities of the region are rice farming, sugarcane farming and production, cattle and livestock rearing. Other economic activities include cash crop farming, commercial trading, and administrative employment.

New Amsterdam is located at the confluence of the Berbice and Canje Rivers, and is the largest of the three townships located in Region 6. New Amsterdam was established in 1740 by the Dutch colonizers and subsequently became part of the British Empire in 1803. New Amsterdam was incorporated into a municipality in 1891.

New Amsterdam is best accessed by road from Georgetown via the Rupert Craig and Berbice Highways. Thereafter, the town can be accessed by crossing the Berbice River Bridge or by water taxi from Rosignol Stelling.

The Township has a population of 17, 329 and is considered the administrative centre of the Region and provides governmental, municipal, and regional services. The provisions of services such as Guyana Revenue Authority, Ministry of Education Regional Office, Immigration and Passport Offices, Magistrate Court, Public Hospital, secondary and tertiary education institutions, and green spaces can be accessed in New Amsterdam, and residences are no longer required to travel to Georgetown to access certain primary services. Land uses within New Amsterdam around the hospital vicinity can be observed in Figure 4-8.

The Township is administered and managed by the New Amsterdam Mayor and Town Council (NAM&TC) under the Municipal and District Councils Act 1969 headed by the Mayor, Deputy Mayor, and Town Clerk. The Town Clerk is the administrator and the Mayor, Deputy Mayor and other members of the Council are elected by the constituencies in the local government election, and are responsible for making decision, instituting policies and by-laws, and managing waste within the township.

New Amsterdam is connected to the national grid and receives power from GPL. The power supply is fairly reliable, with scattered fair to moderate service interruptions. There are a high number of commercial and residential buildings that have integrated solar energy and backup generators as a power supply alternative or to be used in conjunction with GPL.

The Town's water supply is generated from GWI from treatment plants and wells. The Town experience fair to moderate water supply, however reservoirs such as black tanks are utilized for water storage and treatment by residence and commercial businesses.

Other essential utilities such as telephone, internet and data services are available from a number of providers. Guyana Telephone and Telegraph Company is the only provider of landline services within the country.

Solid waste collection management is the responsibility of the NAM&CC. However, this service is often substituted by private waste collection services and transported to the Sanitary Landfill.

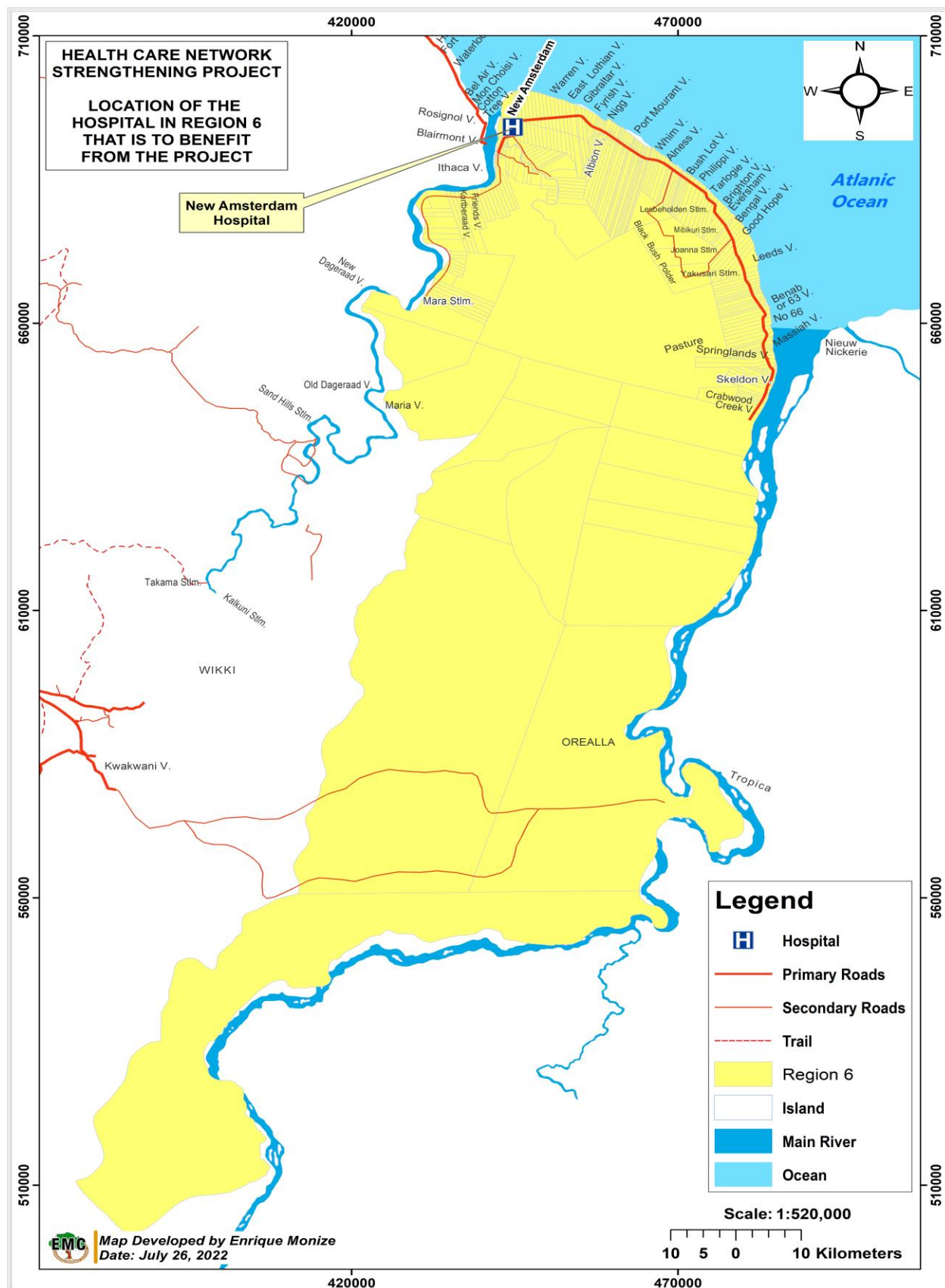


Figure 4-8: Location of the NARH within Region 6

4.2.3 Linden, Region 10

Linden is located in Upper Demerara – Berbice, Region 10. This Region is bordered by the Essequibo Islands – West Demerara, Demerara – Mahaica, and Mahaica – Berbice Regions to the north, East Berbice Corentyne Region to the east, and the Potaro – Sipiruni and Cuyuni – Mazaruni Regions to the west. Region 10 covers an area of 17, 040 sq. km and has a population of 39, 452.

The inland region of Upper Demerara – Upper Berbice contains the largest portion of the hilly sand and clay area, with Guyana’s principal bauxite deposits found in the white sand areas.

The main economic activity of Region 10 is bauxite mining and exportation, supplemented by agricultural activities such as farming and livestock rearing in the surrounding communities. In communities such as Ituni, Kwakwani and Kalkuni logging activities are prevalent. These communities also serve as a commercial hub for communities that are further along riverine and hinterland locations. Region 10 is a growing tourism destination, which features its eco-tourism, heritage, and natural products. Land uses within Linden around the hospital vicinity can be observed in Figure 4-9.

Linden Town is located approximately 107km up the Demerara River and came to prominence as a result of the large-scale bauxite mining activity. Linden was declared a township in 1970 and includes the communities of MacKenzie, Christianburg, and Wismar. Linden is accessible from Georgetown via the Linden-Soesdyke Highway or via the Demerara River.

Linden has a population of 35,000 and is considered the administrative and commercial centre for the region. Bauxite mining supplemented other economic opportunities that directly and indirectly benefitted residents of Linden. As such, local commercial enterprises and financial institutions tend to prosper or decline in response to the fluctuations in the mining industry.

The Township is administered and managed by the Linden Mayor and Town Council (LM&TC) under the Municipal and District Councils Act 1969 headed by the Mayor, Deputy Mayor, and Town Clerk. The Town Clerk is the administrator and the Mayor, Deputy Mayor and other members of the Council are elected by the constituencies in the local government election, and are responsible for making decision, instituting policies and by-laws, and managing waste within the township.

Linden is connected to and receives power from the Linden Power Company (LPC). The power supply is fairly reliable, with scattered small to moderate service interruptions. There are a high number of commercial and residential buildings that have integrated solar energy and backup generators as a power supply alternative or to be used in conjunction with LPC.

The Town’s water supply is generated from GWI from treatment plants and wells. The Town experience fair to moderate water supply, however reservoirs such as black tanks are utilized for water storage and treatment by residence and commercial businesses.

Other essential utilities such as telephone, internet and data services are available from a number of providers. GTT is the only provider of landline services within the country.

Solid waste collection management is the responsibility of the LM&TC. However, this service is often substituted by private waste collection services and transported designated dumpsite.

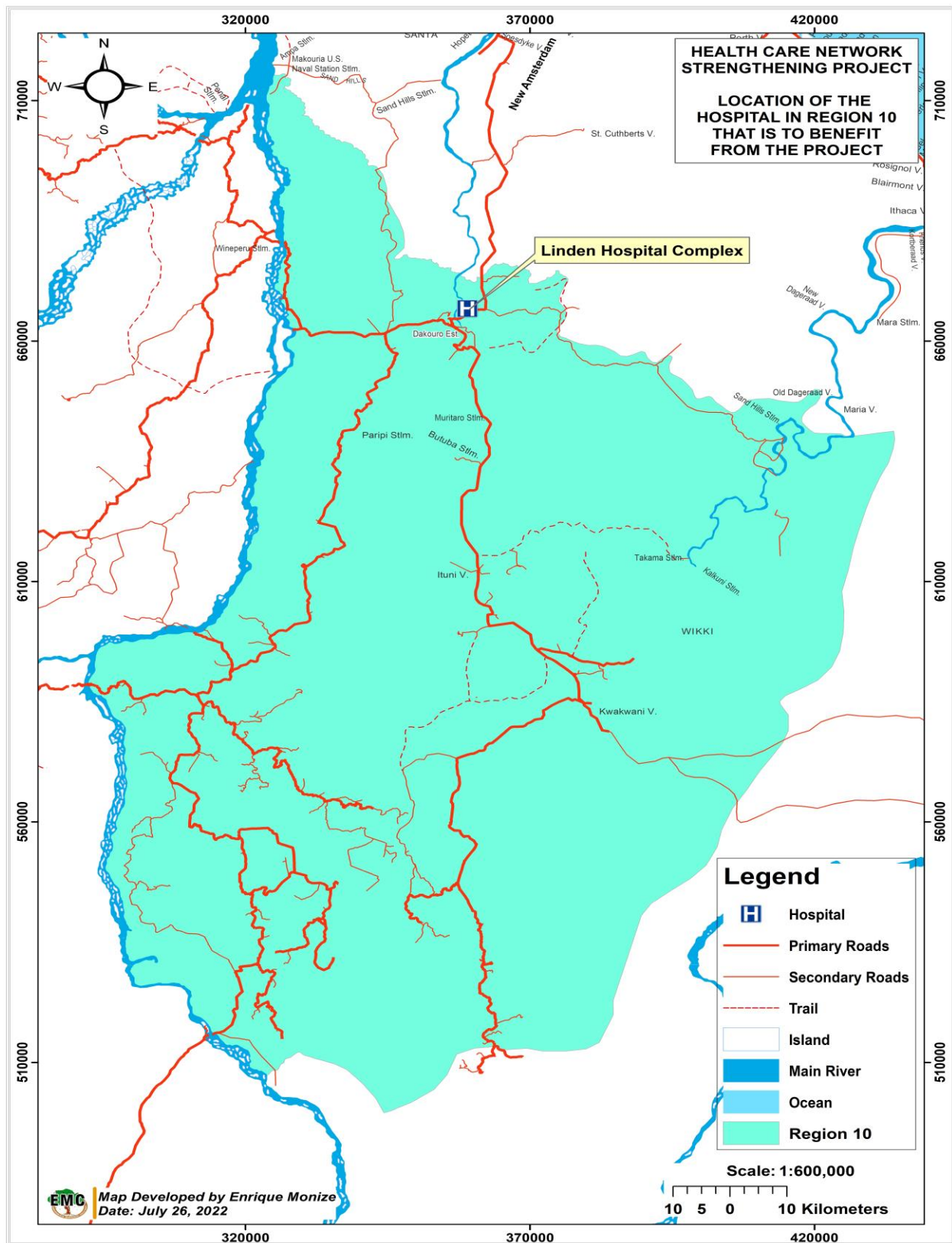


Figure 4-9: Location of the LHC in Region 10

5.0 OVERVIEW OF TARGETED HOSPITALS AND SUMMARY OF FINDINGS FROM SITE VISITS AND KEY STAKEHOLDER ENGAGEMENT

Sites visit and key stakeholder engagements were conducted to the three targeted hospitals. Visits to the sites were conducted during the period of July 05 to 21, 2022. The schedule of visits is presented in Table 5-1. The site visits included key stakeholder engagement and participation of representative from management and the various departments in each hospital. Key Ministry of Health officials accompanied team to each of the site visits.

Table 5-1: Schedule of Site Visits

Region	Location	Hospitals	Date Visited
Region 4	Georgetown	Georgetown Public Hospital Corporation	July 21, 2022
Region 6	New Amsterdam	New Amsterdam Regional Hospital	July 05, 2022
Region 10	Linden	Linden Hospital Complex	July 06, 2022

The feedback from the key stakeholder engagement and site visits are presented in this Chapter, with additional details included in Appendix C.

5.1 Georgetown Public Hospital Corporation

5.1.1 Overview

The Georgetown Public Hospital Corporation (GPHC) is Guyana's largest hospital and is located in Georgetown. Its mandate is to provide a comprehensive range of health care services in an efficient, effective, equitable, and caring manner together with teaching and research activities designed to ensure excellence in patient care, education and research.

The GPHC is overseen by a Board of Directors that are appointed based on the qualifications and experience. The hospital's day-to-day activities are managed by the Chief Executive Officer (CEO) who has direct oversight over the 7 seven functional departments.

The GPHC is a 500-bed inpatient facility with approximately 200,000 clinic visits and 24,000 admissions annually. The hospital offers a wide range of services, including medical imaging, maternal and child healthcare, pharmacy, clinical, ambulatory, inpatient and outpatient, diagnostic, and critical care. Expertise in medical specialties like paediatrics, orthopaedics, neurology, cardiology, endocrinology, oncology, and neurosurgery, among many others, are also provided at the GPHC. The hospital has a staff complement of about 2,000, including approximately 350 doctors and 650 nurses.

The GPHC serves as the main referral hospital for Guyana, and in addition, it also functions as the regional hospital for Region 4 and the district hospital for Georgetown. The hospital is a teaching and research hospital with close ties to the University of Guyana Medical School. The hospital has grown and expanded to accommodate Guyana's growing population and increased medical requirements. The most recent addition to the hospital facility was the USD 8 million IDB-funded inpatient facility that opened in 2011 under a health-sector reform project.

The hospital is a subvention agency and is therefore funded by the Government under the Ministry of Health's budget. In addition, the hospital receives funding and donation of medical supplies and equipment from donors.

5.1.2 Physical Location and Infrastructure

The GPHC's main entrance is located along New Market Street, Georgetown, within a commercial and residential district. There is an additional seven entrances located along Lamaha Street and East Street which gives access to inpatient wing, maternity wing, main building, blood transfusion and nephrology centres. The facilities are located within two compounds separated by New Market. The layout of the hospital and the immediate surrounding area are shown in Figures 5-1 and 5-2.

The GPHC hospital comprises multiple concrete, brick, and wooden buildings with zinc roofs, and glass windows or wooden louvres. Recently, some of GPHC facilities have undergone infrastructure changes to manage expanding patient needs. These include the expansion and rehabilitation of the maternity wards, an extension of the industry health centre, fabrication of a walk-in mortuary, and the construction of an 18-bed mental health ward. However, the hospital's current facilities are inadequate to manage the current and projected patient loads. The hospital recorded a 14% increase in Accident and Emergency (A&E), 31% in general surgery, and 81% in transplant and vascular surgeries in 2021.

The GPHC compound is at risk of flooding, depending on the extent of precipitation and the situation of the external drains. Flooding occurred in the past due to the external drains or the outlets to the external drains being clogged. However, measures have been put in place, such as floor rising and curb walls in vulnerable buildings. The external drainage system was also cleared, and since then no major flooding has occurred.

The hospital has parking available for patients, staff, and emergency vehicles. However, there is insufficient parking space to accommodate the current and expected number of hospital users and staff. The hospital walkways are paved throughout the compound and surrounded by lawns, small shrubs, and flowering and non-flowering trees.

The hospital is adjacent to public roads and commercial properties. The main entrances to the hospitals are located on a busy road with vendors, public buses, taxi drivers and fast-moving traffic. The surrounding is generally busy and has noise pollution from traffic.



Figure 5-1: Layout of the GPHC and the Immediate Surrounding Area

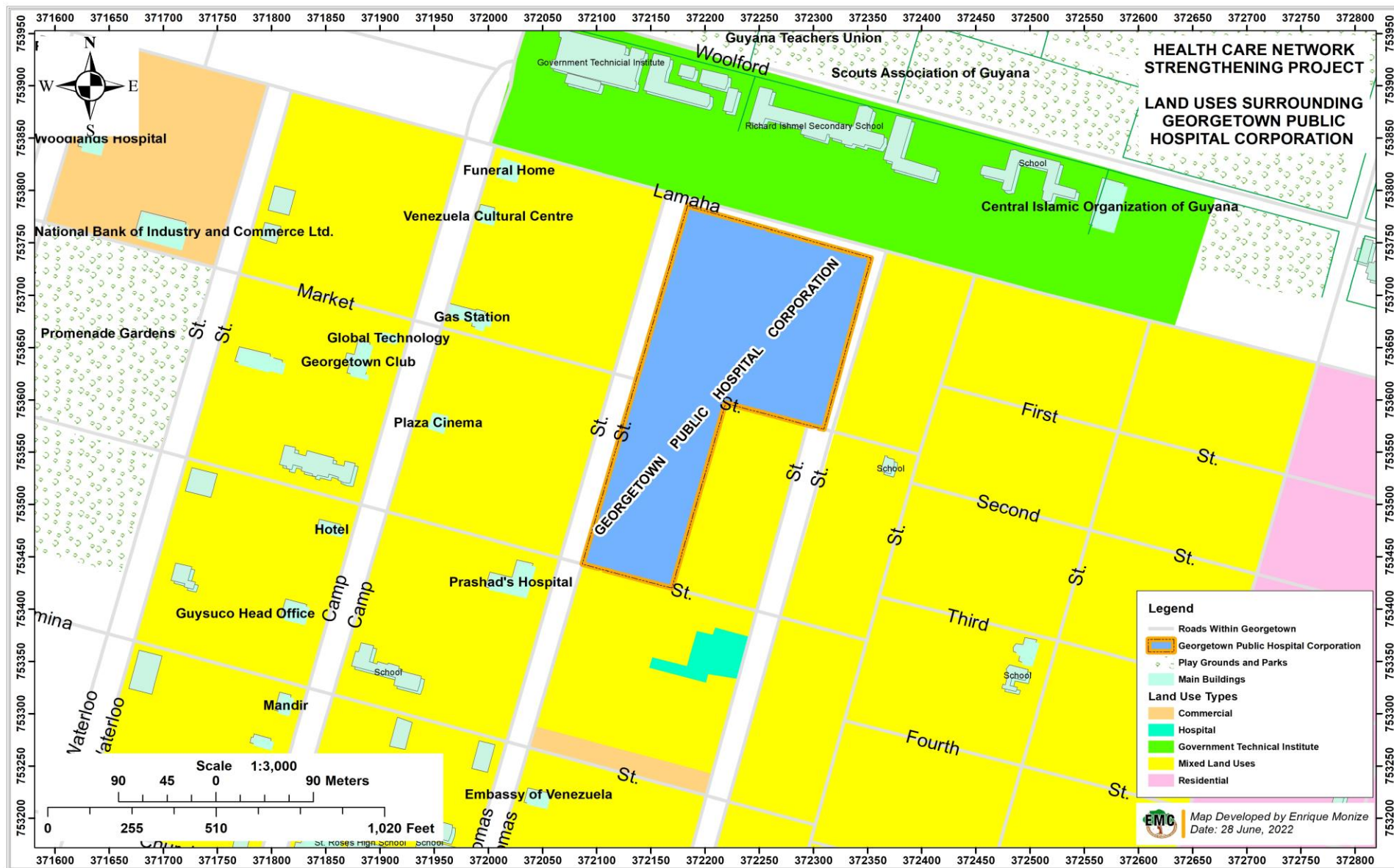


Figure 5-2 Land Uses of the Wider Surroundings of the Hospital in Georgetown

5.1.3 Hospital Services and Specialities

The current A&E department has 19 beds catering to all patients, including trauma and paediatric patients. However, this is not ideal as children witness the treatment of injuries and sometimes death. In addition, the beds are organised in a space that is not adequate to accommodate them comfortably, this results in the area being congested. The current location of the A&E department was a temporary configuration introduced 30 years ago that became permanent. There is need for expansion of the A&E services to reduced overcrowding and long wait time.

There are currently two outpatient buildings. However, these have limited bed space and also includes clinical services.

The GPHC has one central pharmacy that serves all the departments, one that serves outpatients, and one for paediatric patients. As a result, waiting times for medicine are usually long in a waiting room with inadequate space.

The hospital has 11 operating theatres with 6 main operating rooms, as seen in Table 5-2. One operating room must remain free to perform emergency surgeries, leaving five available for scheduled surgery. In 2021, the GPHC's surgical department performed 8,386 surgeries (Table 5-3), including 71 surgeries done on COVID-19-positive patients. The main operating theatre was used to perform 3,142 of these surgeries, as seen in Table 5-4.

Table 5-2: Breakdown of GPHC Operating Rooms – 2021

Specialty	# Of Theaters
Main Operating	6
Ophthalmology	1
Obstetrics and Gynecology	2
Minor Operating	2
Total	11

Table 5-3: Breakdown of GPHC Operating – 2021

Type of Surgery	Theaters Performed	# Of surgeries performed
Emergency	Emergency Operating Room	2,197
Scheduled	Main Operating Theatre	3,142
Scheduled	Minor Operating Theatre	1,250
Maternity	Obstetrics and Gynecology	1,797
	Total	8,386

Table 5-4: Breakdown of Main Operating Theatre Surgeries 2021

Type of Surgery	Number Conducted
Vascular Access	102
Transplant	9
Abdominal	13
Thoracic	48
Neuro	25
Oncology	1
Ophthalmology	1,370
Plastic	82
Maxillo-Facial	58

Type of Surgery	Number Conducted
Obstetrics and Gynecology	25
Urology	120
Ear, Nose, and Throat	82
Pediatric	126
Orthopedic	653
General	428
Total	3,142

5.1.4 Waste Management

Waste collection is segregated at the GPHC in terms of non-infectious and infectious waste, which are managed separately. Non-infectious waste is collected in bins from which it is transferred to a waste collection skip. It is then taken to a waste compacter where it is shredded and compacted. The waste is then transported to the landfill site at Haag Bosch by a private waste collection company.

Infectious waste consisting of sharps and biomedical waste are managed separately. Sharps are collected in specialised sharp containers. Other biohazard wastes are collected in red bags. All infectious waste is collected and stored at a waste holding area. The waste holding area is enclosed and equipped with air conditioning to ensure waste is stored in a proper manner. All infectious waste is treated and shredded by a hydroclave located at the GPHC. After treatment, the remaining material is disposed of as non-infectious waste. Body parts are stored at the mortuary and are collected by a private contractor for burial at the Good Hope Cemetery on the East Coast of Demerara.

Medical waste from other health facilities within Administrative Region 4 and within other regions are also treated by the GPHC hydroclave. Waste is collected from these facilities by the GPHC biohazard truck. The treated waste is shredded and disposed of at the Haags Bosch Landfill.

There is no treatment of wastewater at the GPHC. All wastewater, including sewage, is disposed of into the Georgetown Sewage System. The wastewater from the sinks flow into gullies then into the manholes and finally into the City's sewage system. Similarly, wastewater from the kitchen and mortuary flows into the grease traps and interceptor chambers respectively, then into the manholes and finally into the sewage system. The sewage system is pumped regularly to avoid overflows and back up within the compound.

5.1.5 Hospital Facilities

The GPHC facilities also accommodate a wide range of support services that complement the medical departments. These include catering, laundry, housekeeping, administrative functions, storage, carpentry, welding, and waste management. The facilities housing these departments are not well connected to the medical wings of the hospital. Food, laundry, and bodies are often transported in the open and across public roads and pathways, which is unsanitary and increases the risk of contamination. In addition, makeshift storage rooms using shipping containers are used to store medical supplies in two separate sections of the hospital grounds.

The GPHC is connected to the national grid, and is supplied with electricity by GPL Inc. The supply of electricity is relatively reliable, albeit unstable. There is often load shedding, low or high voltage. This fluctuation of the power supply from GPL can cause damages to medical equipment, which requires stable and clean power. The facility has a total of five generators that kick in when there is power interruptions or blackouts. Some generators serve the entire facility and others power critical areas. The generators can accommodate an increased carrying capacity with the hospital expansion and equipment upgrade.

Water is supplied by GWI. However, the GPHC has additional storage in the form of two reservoirs, which according to management, is adequate for the current operation.

Fire extinguishers are in place at fire points throughout the facility. These are checked and serviced annually. Fire hydrants are located within the compound. Fire alarms are also installed within the newer buildings.

The Facilities Management Department of the GPHC is responsible for general maintenance and which includes carpentry, plumbing and electrical. There is a dedicated sanitation team that is responsible for weeding, cleaning of drains, including perimeter drains. Generally the facilities, including the buildings and compound, are in good sanitary conditions.

Rehabilitation of the hospital will require relocation of some departments. However, the proposed sites for the extension are within the existing hospital compound. The proposed project construction sites include areas currently being used for parking.



Figure 5-3: GPHC Inpatient Building and Parking Lot



Figure 5-4: Proposed Site for New Inpatient Building



Figure 5-5: Proposed Site for New Accident and Emergency Building

5.1.6 Occupational Safety and Health Administration

The GPHC has a Quality Improvement Department which oversees health and safety. Health and safety is overseen by health and safety officers, and come under the direct purview of the CEO. The hospital currently has three Health and Safety Officers. A Health and Safety Committee, with seven sub-committees manage health and safety of the hospital. These sub-committees meet regularly to assess the needs, analyse feedback and challenges, and discuss implementation measures and success. There are plans to establish a Strategic Management Department, which will include the Quality Improvement Department. There is consideration to include an Environmental Personnel in this new department.

5.1.7 Grievance Redress Mechanism

The GPHC has instituted a number grievance and complaints mechanism to offer redress to those who may have issues. The hospital employs Patient Advocates to address the immediate concerns of the patients and provide help and solutions where necessary. Formal complaints can be lodged in the suggestion/complaints boxes that are located at several key points in the hospital or can be lodged directly at the CEO's Secretariat via email or with the Matron. Once the complaints are outside the scope of the CEO or Matron they are elevated to the Board of Directors. Reports on the grievances and complaints are logged and entered into the hospital's official records. Reports are generated and submitted to the MoH.

5.1.8 Recommendations for Project Support and Implementation

During the site visit to the GPHC, the hospital management team, including personnel from the operational health and safety, quality improvement, strategic planning, and facility maintenance, expressed interest in the project and the following feedback were provided:

1. Construct a new A&E facility with more beds and which will allow for better patient flow. This facility should be constructed with three floors and located within the compound close to the East Street entrance.
2. Construct a new inpatient and outpatient facility to accommodate increased patient load and free up beds in the A&E department. This facility should also include clinical services and should be constructed within the compound close to Lamaha Street. The ground floor would be designated for outpatients offering internal medicine, obstetrics/gynecologic, pediatric and surgery services. The first floor would accommodate wards and the second floor would be for the classrooms/lecture rooms. Some storage containers would have to be relocated to construct this facility.
3. Expand the main operating theatre from six to 11 rooms and the ICU from seven to twenty beds. Once other services such as A&E clinical services are relocated to the new buildings to be constructed space will become available to facilitate the expansion and relocation of the ICU and theatre.
4. Expand the medical lab and radiology. There is no space for additional equipment at the current lab. Once clinical services are relocated to the new outpatient building, space will become available for expansion of the labs.
5. Integrate support services such as the mortuary, laundry, housekeeping, warehousing, and catering services, into all the hospital buildings to reduce the risk of contamination and increase efficiency.
6. Construct a new administrative complex with staff facilities. The existing administrative building is to be demolished and a new administrative building to be located to the extreme north of the southern half of the compound, where the present conference room building is located. The building will have four (4) floors with the ground level designated for parking and the first to third floors for offices and conference.

7. Construct a warehouse with a fully automated inventory system. Currently there are no warehousing facilities at the hospital. Storage is done in temporary containers. The proposed warehouse will occupy the footprint where the present Administrative building is located.
8. Construct a new pathology laboratory.

The hospital administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with general construction works, and several mitigation measures were proposed:

1. GPHC management should be involved in the project discussions from the onset.
2. The Environmental, Social, Health and Safety requirements should be included in the bidding documents and contracts.
3. The contractors should involve the GPHC's Occupational Safety and Health (OSH) team in any discussions or planning concerning OSH.
4. The contractors should prepare a construction Environmental Social Management Plan to manage risk during construction. The Plan should include financial provisions for management and mitigation measures such as signage, PPEs, etc.
5. An environmental and safety officer, who will be the hospital's main point of contacts for any OSH related issues, should be employed by the contractor.
6. A Code of Conduct should be prepared for the contractor's workforce.
7. To eliminate risks and reduce disruption in areas where construction will take place, contractors should:
 - Wear personal protective gear at all times
 - Isolate construction areas from active healthcare operations
 - Use temporary partitions
 - Use dust control measures
 - Use noise-reduction technology
 - Maintain a clean environment as much as possible and dispose of construction debris regularly rather than letting material build up in areas

5.2 New Amsterdam Regional Hospital

5.2.1 Overview

The New Amsterdam Regional Hospital (NARH) is located in the township of New Amsterdam, and it was declared opened by the GoG in 2004 to deliver healthcare to the public. The current facility, which replaced the old hospital, is the second largest hospital in the country, and handles referrals from the health centres and hospitals in Regions 6 and 5, and surrounding communities. The hospital also treats patients from Suriname.

The NARH was built for a carrying capacity of 134 beds, with a 30 bed per ward. The hospital treats approximately 300 patients daily, 100 of which are emergency cases, 100 in-patients, and 100 outpatients. The hospital receives patients and referrals from health facilities in Regions 5 and 6, and the surrounding health centres.

The NARH falls under the management of the Region 6 Administration. The CEO and other administrative staff manage the day-to-day affairs of the NARH. The CEO reports to the Regional Health Officer and the Regional Executive Officer of Region 6. The hospital has several Heads of Departments, and a Matron. The Department Heads and Matrons are in charge of the doctor, nurses, and other medical practitioners.

The NARH receives funding from the Region 6 budgetary allocations as part of their annual national budget. Therefore, funding is allocated to the hospital based on the discretion of the Region's

developmental plans. Other interventions and campaigns such as special medical campaigns (like the COVID 19 Vaccination Drive) are based on special allocations.

The hospital has applied for and has been given consideration for a Health Facilities License, and is currently in the inspection phase of the process.

Additional details on the New Amsterdam Regional Hospital are presented in Table 5-5.

Table 5-5: Information on New Amsterdam Regional Hospital

Hospital Features	Quantity	Details
Beds (Overall)	134	NARH was originally built to accommodate 134 beds, however due to high influx of patients, there have been make-shift expansion of the ward, the A&E, and clinics to accommodate the high influx of patients.
Wards		There are 30 beds allocated to each wards
Accident and Emergency (A&E)	7	The A&E's currently has 7 beds, which are sectioned and separated by bed-sheets for patient privacy. There has been a request for the expansion of the A&E Unit to accommodate 15 beds.
Intensive Care Unit (ICU)	2	The ICU Suite currently has 2 beds. There has been a request for the expansion of the suite to 7 beds. This is to accommodate the expansion of the services provided to critical patients at the NARH, as an alternative to transporting the patient to GPHC.
Operating Table/Theater	3	There are currently 3 operating tables. There has been a request for the expansion of the Surgical Suite to accommodate 6 beds in order to increase the amount of surgeries performed as a measure to use the human resource that is available at the hospital effectively.
High Dependency Unit (HDU)	0	There is currently no HDU at the NA Regional Hospital. There was a request for the creation of an HDU to properly monitor patients that require high dependency care.
Radiology	7	The NARH has a radiology department. However, because of the influx of patients, there is a request for the expansion of the suite.
Sterilization Unit	1	There is a Sterilization Unit with two sterilization machines at the NARH. However, one is out of commission and the other is functioning at minimal capacity.
Clinics	1	The hospital has one area designated for clinics and operates several outpatient's clinics and services such as diabetes, eye, pregnancy and wound care and dressing. There is currently a need for the expansion of the areas for examination
Staff	530	There are currently 530 staff employed by the hospital. The staff operates on a shift system, with an on-call requirement for doctors. They include medical practitioners, auxiliary and administrative staff
Inpatients	100	The hospital sees approximately 100 inpatients a day that have been admitted for various complaints, including

Hospital Features	Quantity	Details
		recovery from surgery, maternal and childcare, and A&E patients. Patients are admitted from Regions 5 and 6 and referral from the outlying health centres and hospitals within the catchment area.
Out-Patients	100	The hospital sees approximately 100 outpatients daily who access services through the clinics and other services provided.
Accidents and Emergency	100	The A&E process approximately 100 cases daily ranging from serious accidents and injuries to minor scrapes and burns. Patients are then referred to be admitted to the wards or treated and sent home. Those that need continuous monitoring and care are joined to clinics that deals with their specific situation.
Specialty	16	The NARH currently has the human resources to administer care in 16 specialties. This includes general surgery, orthopedics, obstetrics and gynecology.

5.2.2 Physical Location and Infrastructure

The hospital is located on the periphery of the township of New Amsterdam. Northeast of the hospital is the New Amsterdam Technical Institute and southeast are residences associated with the institute. Southwest of the hospital is a playground, followed by the Berbice High School. Northwest of the hospital are the doctors' quarters, followed by the National Psychiatric Hospital. The wider area consists mainly of residential areas and a waste disposal site. Figures 5-6 and 5-7 show the hospital facilities and the immediate surrounding area. The surrounding is generally busy since the hospital is located on the main road that is used to access the New Amsterdam Town. As a result, there is noise and dust pollution emanating from the flow of traffic.

The hospital has three paved parking lots used by patients, staff and emergency vehicles and these are accessed through either of the four entrances, depending on their location. However, there is insufficient parking space to meet the growing number of hospital staff, users and the emergency vehicles. The hospital walkways are paved throughout the compound and surrounded by lawns.

A barred metal fence with a concrete base around the perimeter encloses the hospital's compound. There are four main access points to the hospital compound, but only two are open to the public. The others are used by staff, students, and emergency vehicles.

The compound currently houses multiple concrete structures with zinc roofs and glass windows. The main hospital building is comprised of a wide range of services and functional units. These include diagnostic and treatment functions, such as clinical laboratories, imaging, emergency rooms, and surgery; hospitality functions, such as food services and housekeeping; administrative functions, and fundamental inpatient and outpatient care. Other buildings on the NARH compound include the continuous education building, an archives unit, and an administrative block.

Parts of the NARH, including the surgical suite has mold on the walls which is a result of the condensation of hot air trapped in the ceiling and the cool air rising. Fungus is also noticeable on the external walls of the various buildings located in the complex. This can be a result of a botched paint job or incorrect paint for the physical environment of the hospital.

According to the management there have been no maintenance or upgrades to the hospital since its establishment 18 years ago. As a result, many of its facilities, equipment, and structures are outdated and dilapidated. As a result of the high influx of patients, the current space is inadequate to accommodate and provide premium care to patients.

There is adequate space for the extension under the project to be implemented within the hospital complex with little to no displacement of services. There is currently no competing land use since the expansion will occur within the boundaries of the hospital.



Figure 5-6: Layout of the NARH and the Immediate Surrounding Area

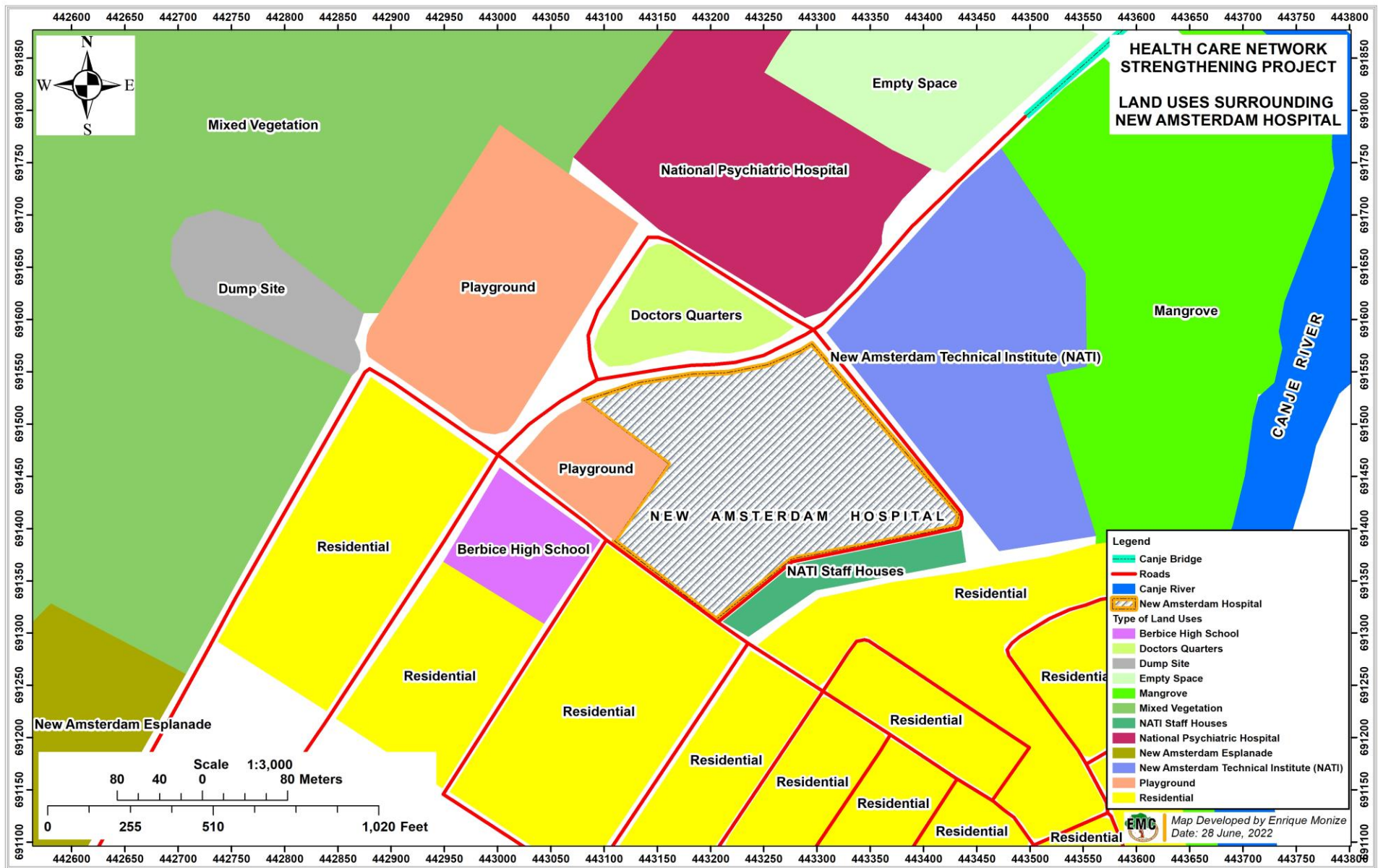


Figure 5-7: Land Uses of the Wider Surroundings of the Hospital in New Amsterdam

5.2.3 Hospital Services and Specialities

There are 16 medical specialities accessible at the NARH, including internal medicine, obstetrics and gynaecology, paediatrics, surgery, radiology, pathology, physiotherapy, orthopaedics, otolaryngology, ophthalmology, nephrology, A&E, intensive care medicine, maternal and child health, urology, and angiology.

At its inception, the NARH offered two specialised medical services, and as such the clinic examination rooms were designed to accommodate one doctor and one patient at a time. However, the hospital now offers 16 specialities, and there has not been any additional space allocated to the clinic examination rooms. To accommodate the increased number of clinics and patients the rooms have been divided into sections by non-medical grade blinds to accommodate three doctors and three patients at any one time. Additionally, patients' wounds are dressed in a stockroom due to limited space for outpatient care. The current patient waiting area is small, overcrowded, loud, dark, poorly ventilated, and has uncomfortable seating. Patients sometimes have to wait outside the hospital due to a lack of space.

The NARH has one three-bed Intensive Care Unit (ICU) and a seven-bed A&E department. The number of emergency patients has outgrown this capacity. In 2021, the NA Regional Hospital conducted 1,323 surgeries. A breakdown of these are presented in Table 5-6.

Table 5-6: Number of Surgeries Performed in 2021

Type of Surgery	Number Conducted
General Surgery	338
Orthopedics	372
Ear, Nose and Throat	25
Urology	19
Angiology	29
Obstetrics and Gynecology	539
Endoscopy	1
Total	1,323

The hospital currently has a three-bed operating theatre, which services the catchment areas of the hospital. The surgery suite is a sterile area, however the visible external walls and ceilings of the suite are covered with mold. This is the result of a design flaw that created a large space between the ceiling and roof of the building, resulting in condensation and a moist environment that is prone to mold and mildew.

The ICU suite has a two-bed capacity, which is often inadequate for the needs of the hospital. There is also no HDU, so patients that are too critical for the general wards and not critical enough for the ICU are kept in a place not suited for their condition. This leads to overcrowding and underutilization of resources.

There is a sterilization unit with two sterilization machines at the hospital, however, only one is functional and working at maximum capacity. The other sterilization machine is out of commission and needs maintenance.

The vacuum/suction system is an important piece of equipment in the delivery of patient care, it is responsible for clearing airways and removing body fluids. However, the vacuum system that exist at the NARH is out of commission and non –functional. While the system had undergone a number of rehabilitation measures, it was never restored to a fully functional efficient system. The hospital

currently utilises a portable suction system. However due to nature of the equipment, it is not sufficient to meet the needs of the hospital's demand.

There are functional laboratories that are equipped to do analysis on blood works and other bodily fluids, however, the hospital lacks a pathology lab. Samples for this purpose are sent to the GPHC for analysis and results. This is often time consuming and delays the diagnosis of patients.

The NARH has an adequate amount of supplies to cater for and treat the high volume of patients visiting the hospital. However, there has been a high staff turnover at the institution for a number of reasons. According to the CEO, the hospital is in 80% compliance based on the Health Facilities Licensing required.

5.2.4 Waste Management

The NARH generates a significant amount of waste daily. These waste are categorized as bio-hazardous waste (bio-medical waste (such as blood, body parts), and domestic waste (such as wrappers, food items, and sanitary utensils). These wastes are either solid or liquid, and have different processes of disposal.

Bio-hazardous wastes such as needles, syringes, tin blades, and chemicals containers are incinerated in the hospital's compound on weekends by the hospital staff. The wastes that have gone through the incineration process are thereafter transported to the dumpsite for disposal or stored in containers in the hospital complex. Bio-medical wastes such as body parts are accumulated and kept in a freezer. It is then collected and transported by a funeral home to be buried in a cemetery. Other waste, such as domestic are collected in garbage bins around the hospital and hospital compound, consolidated, collected and transported to the New Amsterdam municipality dumpsite that is located nearby by a private contractor daily. The hospital is equipped with adequate waste receptacles including properly labelled red bags for biohazards and bio-medical waste.

Wastewater and other liquid waste are disposed of through the sewage system of the hospital, which consists mainly of septic tanks. There is an arrangement for the septic tanks to be emptied by a private waste collector. However, during routine operations, discharges from the septic tanks flow directly into the Canje River since there is no additional treatment.

The NARH does not have a Waste Management Plan, and as such, waste is handled on an ad hoc basis.

The MOH is in the process of preparing a Waste Management Manual which will be applied to health facilities.

5.2.5 Hospital Facilities, and Facilities Management

The NARH has several facilities that make up the hospital complex and these are important to the efficient functioning of the hospital. However, the hospital does not have a Facilities' Manager, a post that exists and which has been vacant for a number of years. The general responsibilities of the Facilities Manager are to organise and maintain the facilities of the hospital, and to ensure that the equipment, buildings, and services are working well in all circumstances, including reporting faults, defects, and liabilities and make recommendations on bettering the systems. Currently, most of the maintenance of the system and equipment is being done by porters and other personnel who are not trained in this regard.

The hospital has 14 sanitary blocks with toilets connected to a septic tank system. Some of the toilets, like the ones in the A&E Department, are not in working due to poor maintenance. The toilets are

connected to a gravity feed tanks within the complex, and flushes into the hospital sewage system. The toilets are inadequate to meet the needs of the current flow of patients and doctors of the hospital. There will need to be additional consideration as it relates to the sanitary units in the present and future extension of the hospital.

The NARH is connected to the national grid and is supplied with electricity by GPL. The supply of electricity is relatively reliable, albeit unstable. There is often load shedding, low or high voltage. This fluctuation of the power supply from GPL can cause damages to medical equipment, which requires stable and clean power. The facility has two backup generators that kick in when there is power interruptions or blackouts. The first generator serves the entire facility and the second powers critical areas. The generators can accommodate an increased carrying capacity with the hospital expansion and equipment upgrade.

The NARH has access to potable water from GWI, which feeds into two large reservoirs connected to a series of water tanks located in various sections of the hospital. The water tanks gravity feeds water to the various departments with the hospital. The reservoir is cracked and leaking, and may not support the hospital expansion. It is also prone to contamination by groundwater during high water table events. The hospital does not have a working water purification system and mostly relies on the GWI water treatment plant to deliver treated water to the complex.

The hospital laundry department is inefficient to deal with the current volume and high turnover of patients. The hospital's dryer is not functioning and lines with bed linens and other items can be seen outdoor in the hospital's complex. There is need for an efficient laundry system that is able to handle the high turnover of patients of the hospital. It is also critical for the dryer to function so that it can act as a sterilisation method for the linens and other articles.

The hospital has a functioning incinerator that operates on weekends to limit the impacts such as noise and air pollution that affect the neighbouring institution. While this is a method that is recognised as an acceptable form of waste management, the technology is outdated and generally not the best for the environment. The incinerator is operated by an auxiliary staff that is not qualified or has not been trained to operate the equipment. The incinerator should be replaced by a hydro-clave system that offers a more safe and effective alternation to waste management.

The NARH does not have a formal Fire Prevention and Protection Plan with documented standard operation procedures (SOPs) and which results in the ad hoc approach to fire prevention and protection. However, there are visible fire points located around the hospital with fire extinguishers. The extinguishers are due for servicing. The CEO of the hospital has engaged the Guyana Fire Service to provide training to the staff of the hospital, however training will be ineffective if there are out-dated or no fire fighting equipment. There is a need for a complete and comprehensive Fire Prevention and Protection Plan, training, and fire fighting equipment for the protection of the staff and patients of the hospital.

The hospital is not prone to flooding from heavy precipitation or overtopping of the Canje River. However, the hospital compound is located below the road level and in case of heavy rainfall, the run-off water temporary accumulates in some parts of the complex and the drains. The hospital is interspersed by a network of drains that collects the runoff that is eventually drained into the Canje River. There will need to be consideration as it relates to the design of the interconnect system that will link the extension to the main hospital buildings. This is to ensure that staff, patients and visitors are provided with a safe means of traversing between the buildings.

Infrastructural rehabilitation and extension of the hospital will require relocation of some departments, though the proposed site for the extension is within the existing hospital compound. The compound

has adequate space to facilitate the extension, but in some cases, structures will need to be demolished to accommodate the new buildings.

5.2.6 Occupational Safety and Health Administration

The NARH does not currently have a functional health and safety plan or protocol that guides the operation of the hospital. Matters of occupational health and safety are resolved on an ad hoc basis and according to the nature of the complaint or issue. There is no health and safety officer that ensures that there is compliance with the national legislations and standards. Instead, matters are addressed by the CEO, the Matron, and other managers. This has implication of the safety of the hospital environment and patients and staff's daily interaction within that environment. The hospital is currently putting together a Health and Safety Committee to address the needs of the hospital in order to bring the hospital up to standard in this department.

5.2.7 Grievance Redress Mechanism

There are standard operation procedures that were established at the hospital to address grievance and an established line of authority to offer redress to the complainant. Complaints and grievances are received by the suggestion boxes placed around the hospital and by a designated desk where the complainant can lodge their grievances personally.

The complaints are then forwarded to the Matron, in instances of nursing issues, and the CEO in all other instances. The Matron addresses matters brought to her and offer redress if it is within her scope. The CEO addresses all other matters and redress is offered at that level. However, if the Matron is unable to provide redress at her level, the complaint is elevated to the CEO for consideration. The CEO may engage a three-person panel to address complaints if there is need to. If complaints are unable to be addressed by the CEO, Matron, and the panel, it can be forwarded to the Regional Health Officer and Regional Executive Officer. Generally, grievances are documented in a complaints logbook in the official records of the hospital.



Figure 5-8: New Amsterdam Hospital Main Entrance



Figure 5-9: New Amsterdam Hospital Administrative Block



Figure 5-10: New Amsterdam Hospital Operating Room

5.2.8 Recommendation for Project Support and Implementation

During the site visit to NARH, the CEO and Medical Superintendent expressed interest in the project and the following feedback were noted:

1. Renovation and expansion of Accident & Emergency (A&E) Department from a 6 bed to a 15-bed facility, inclusive of a waiting area to provide more privacy and easier access for all patients and reduce waiting time.
2. Renovation and expansion of the surgical suite from a three-bed to a six-bed facility. This to increase the number of surgeries conducted in the hospital, reduce the waiting time for urgent and non-urgent procedures, and adequately utilise doctors and other human resources. Address the mold on the walls and ceiling of the operating theatre, which threatens the aseptic conditions necessary for surgery.
3. Expand the Radiation Suite to meet the hospital's current and projected needs. Include facilities for a digital x-ray machine and computerized tomography (CT) scanner.
4. Expand the ICU from a 2 bed facility to at least 7 beds.
5. Establish a 15-bed HDU to house patients that are not critical for the ICU but need additional attention than what the general wards provide.
6. Expand the outpatient department and clinic area to accommodate the current 16 specialities offered at the hospital, and to provide the required comfort and privacy to the doctors and patients. This will reduce waiting time and prevent overcrowding of the outpatient areas.
7. Rehabilitate and expand the waiting room to accommodate more people, improve patient experience, and reduce the risk of infection.
8. Renovate the hospital facilities to meet current technology, innovation, and standards. Repaint the hospital with paint that is conducive to the area's climate and hospital activities, such as paint that does not fade quickly and is easy to clean.

9. Replace the vacuum/suction system with a new fully compliant one designed to meet the facility's specific requirements.
10. Replace the water supply system with an efficient water sourcing, storage, and distribution system to ensure that the water supply is adequate as per the requirements of the hospital. The new design should include a new reservoir, tussles, pumps, a purification system (reverse osmosis or UV light), and an emergency system.
11. Renovate the fire prevention system to protect hospital buildings while posing no risk to patients or personnel, accompanied by regular fire prevention training. The hospital management engaged the Guyana Fire Service to assess the premises, and the report will inform future fire prevention plans.
12. Establish a new Hospital Sterilisation and Disinfection Unit, separate from the operating theatre, which will house two new sterilisers and specialised staff to operate them. This will enable the NARH to become the central sterilisation unit in Region Six, increase efficiency, reduce cost, and relieve some of GPHC's caseload.
13. Establish and equip a pathology laboratory to ensure that patients receive accurate disease diagnosis and timely and adequate treatment.
14. Although there has not been any incidence of flooding all new construction should be elevated above ground level.

The hospital administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with general construction works, and a number of mitigation measures were proposed by the administration:

1. Most services will not be disrupted. There is enough space within the hospital compound for the contractor to mobilise, including for the storage of construction materials.
2. Staff from different departments of the NARH should discuss planning and engineering solutions and comprehensive approaches to ensure the safety of patients, visitors and hospital staff.
3. The hospital team should assess the affected departments and relocate them to other areas during the construction phase.
4. Contractors should develop a comprehensive HSSE Plan to identify and mitigate risks associated with the contractor's activities. The Plan should outline measures to ensure that workers are aware of the Plan and the need for their adherence. The management of the hospital should be provided with an opportunity to review and approve the Plan.
5. Before construction begins, the hospital management should be allowed to brief the contractors on the relevant rules, policies, and protocols and reiterate the importance of compliance to reduce injuries and create a safer work environment.
6. The contractors should have as part of their team a health, safety and environmental personnel.
7. To eliminate risks and reduce disruption in areas where construction will take place, the hospital management team recommends that contractors:
 - Wear personal protective gear at all times
 - Isolate construction areas from active healthcare operations
 - Use temporary partitions
 - Use noise-reduction technology
 - Implement separate workers' entrances
 - Manage material delivery flow to ensure construction traffic does not pose any risk to emergency room access
 - Maintain a clean environment as much as possible and dispose of construction debris regularly rather than letting material build up in areas.
 - Keep construction materials away from open hospital areas.
 - Provide separate waste disposal and toilet facility for the workers

5.3 Linden Hospital Complex

5.3 1. Overview

Linden Hospital Complex (LHC) is located in the Township of Linden and consists of the old and the new hospitals. The old hospital is a single-storey structure built in 1925 designed to accommodate 75 beds, with X-Ray, laboratory, dispensary facilities, and an operating room. Due to the growth of the population and the increasing demand for the hospital's services the new Linden Hospital was constructed in 2009, funded by the Health Sector Programme and co-financed by the IDB in collaboration with the GoG. The hospital handles referrals from all health centres and hospitals from Regions 8, 9, and 10, which have a combined population of approximately 74,000 people.

The Linden Hospital Complex receives funding directly from the MoH under their annual budget. Therefore, the operation of the hospital comes directly under the Permanent Secretary of the MoH. The Linden Hospital Complex is currently in the process of receiving its Health Facility License. They have completed the inspection phase and is currently in the process of receiving and reviewing the inspection report, after which they will move to the next phase in the process.

5.3.2 Physical Location and Infrastructure

The hospital is located on the right bank of the Demerara River, the Charles Roza School of Nursing, and private residences. The surrounding is generally busy with traffic, as the bridge linking the right and left banks of the Demerara is in close proximity. In the wider area are the bauxite processing and shipping operation, the Watooka Guest House, other government services, small business and residences. Figures 5-11 and 5-12 show the hospital facilities and the immediate surrounding area.

The hospital complex comprises two main structures in different adjacent compounds, separated by a paved road and chain link fence. There are four main access points to the compound, two for vehicular and pedestrian access and two for pedestrian access.

The first compound is currently used as the administrative block of the hospital and houses three structures: the old Linden Hospital, the administrative block, the ambulance bay, and the generator building. The old Linden hospital is a single-storey wooden structure with a zinc roof and glass windows. The building is generally tidy, but its structure, paint, and roof show signs of ageing. The other three buildings are concrete but have similar roofs and windows as the old hospital building. They are painted and generally tidy.

The second compound houses the new Linden Hospital, a two-storey building with a zinc roof and a mixture of glass windows and wooden louvres. It has 86 beds serving six departments: obstetrics, gynaecology, surgical, general medicine, orthopaedics, and paediatrics as seen in Table 5-3 and 5-4. This structure is the primary medical wing of the hospital and is comprised of a wide range of services and functional units. These include diagnostic and treatment functions, such as laboratories, imaging, emergency rooms, surgery, laundry services, and inpatient and outpatient care. 222 staff manages the facility. The hospital performed 598 surgeries in 2021, as seen in Table 5-5.

The new Linden hospital was built in 2009 and is still in relatively good condition. The hospital has a Maintenance Superintendent who oversees facility and its equipment. In addition, personnel from the Ministry of Health conduct assessments of the hospital facilities and equipment every quarter to ensure efficiency and function.

The hospital has two paved parking lots used by patients, staff, and emergency vehicles. However, there is insufficient parking space to meet the current and expected number of hospital users. The

hospital walkways are paved throughout the compound and surrounded by lawns, small shrubs, and flowering and non-flowering trees.

The hospital compound is located in proximity to the Demerara River, on the right bank. However, the site is not prone to flooding from the River. The compound drains easily and is also not prone to flooding from heavy precipitation. A network of drains spread across the compound collects runoff and drains it into the Demerara River.

There is adequate space for the extension project to be implemented in the hospital complex with little to no displacement of services. There is currently no competing land use since the expansion will occur within the boundaries of the hospital.



Figure 5-11: Linden Hospital Complex and the Immediate Surrounding Area

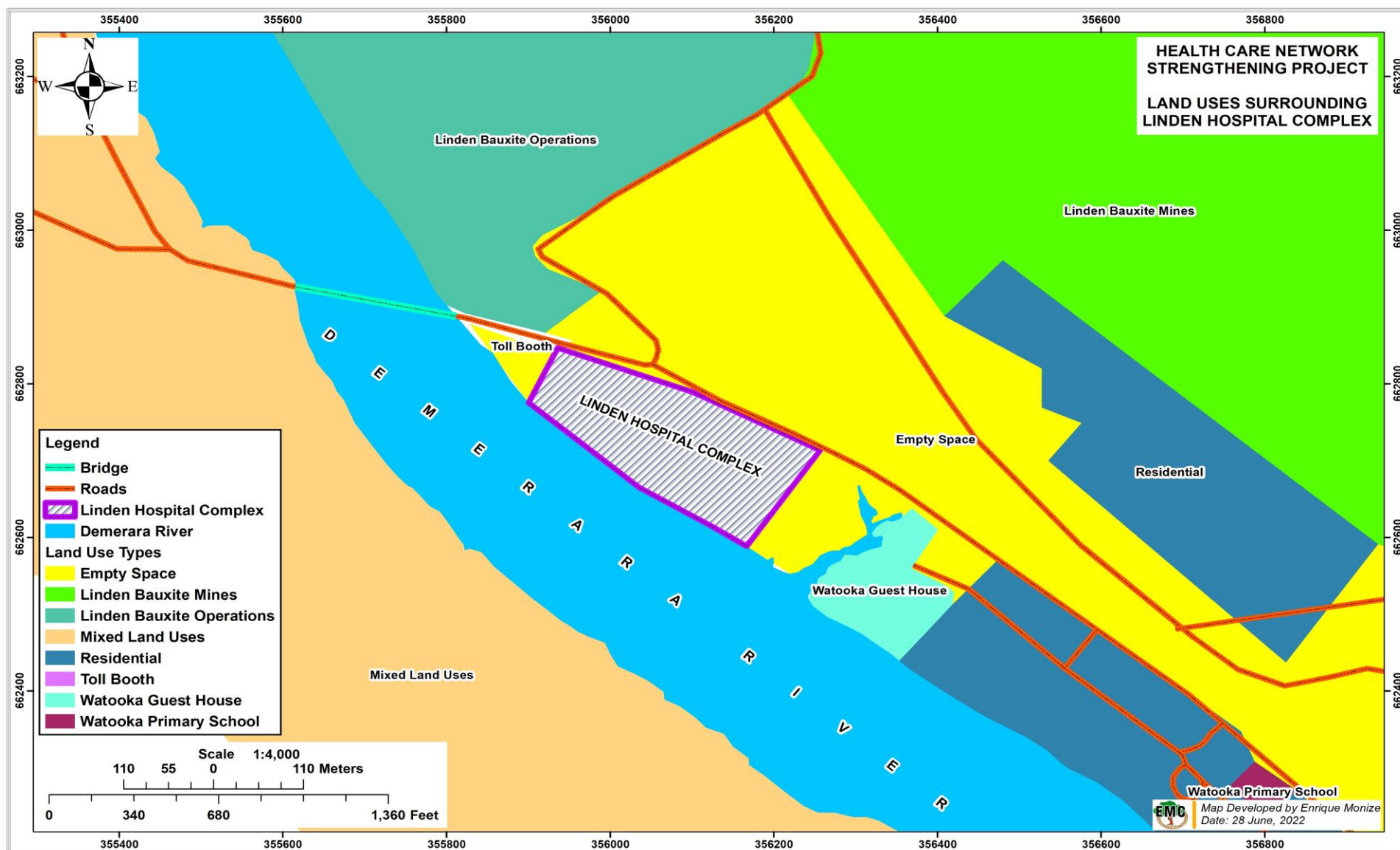


Figure 5-12: Land Uses of the Wider Surroundings of the Hospital in Linden

5.3.3 Hospital Services and Specialities

There are currently six departments functioning at the Linden Hospital Complex. These are obstetrics, gynaecology, surgical, general medicine, orthopaedics, and paediatrics. The hospital currently has 29 rooms, with a total of 86 beds distributed across these rooms. A breakdown of the rooms and beds is presented in Table 5-7. The inpatient load per department is presented Table 5-8. Surgeries offered at the hospital are in Obstetrics and Gynaecology, General and Orthopaedic. A breakdown of the surgeries performed in 2021 is presented in Table 5-9.

Table 5-7: Breakdown of Hospital Beds per Clinical Area (2021)

Clinical Area	Rooms	Beds
Male Ward	6	28
Female Ward	6	26
Pediatric Ward	7	15
ICU	3	4
Maternity Ward	3	12
NICU	4	4
Total	29	86

Table 5-8: Breakdown of Inpatient Load per Department (2021)

Specialty	Patients
Obstetrics	452
Gynecology	144
Surgery	201
Medical	224
Orthopedic	38
Pediatric	275

Table 5-9: Breakdown of Surgeries (2021)

Type of Surgery	Number Conducted
Obstetrics and Gynecology	415
General	164
Orthopedic	19
Total	598

The hospital can accommodate the current patient load and provide quality services, but not at an optimal level. Linden's economic growth and the subsequent rise in population across the region have resulted in an increased patient load. Also, new infrastructural development projects, such as the rehabilitation of the Linden to Lethem Road, may see an increase in emergency cases. Construction of the first section of this roadway from Linden to Mabura has recently commenced. Although most of the hospital's facilities, equipment, and structures are functional, their rehabilitation and expansion are required to provide optimum care to a wider population with growing medical requirements. The hospital has treated an average of 3,900 patients a year over the past five years, as seen in Table 5-10, and anticipates a 125% increase in the average inpatient load in the next five to ten years.

Table 5-10: Breakdown of Average Inpatient Load at LHC (2017 – 2021)

Year	Inpatient
2017	4411
2018	4543
2019	3988
2020	3282
2021	3180

5.3.4 Waste Management

Waste management at the LHC is guided by the hospital's Waste Disposal Policy and Medical Waste Management Plan 2022-2024 that established clear SOPs as it relates to waste management at the hospital. The Plan directs and describes the protocols that must be followed to allow for the safe disposal of waste.

Waste management at the hospital is executed in accordance to the Waste Disposal Policy and Medical Waste Management Plan, overseen by the Occupational Safety and Health (OSH) Officer. These documents were developed by the hospital and outline the policies and procedures that guide waste management, including the handling, storage, and disposal of radioactive, chemical, pharmaceutical, and infectious and non-infectious waste generated by the hospital. The hospital has an adequate number of waste receptacles spread across the facility and are labelled accordingly.

The hospital has an incinerator but this has not been in operation for the last couple of years. The Linden Town Council collects the solid waste generated by the hospital via a private contractor that collects and disposes of the waste daily. Liquid waste generated by the hospital exits through drainage pipes and into a septic tank, and wastewater from the septic tank drains into the Demerara River. The bio- medical wastes, such as body parts are buried in a cemetery by a privately contracted company. Some of the hospital's bio-hazards wastes such as tin blades and needles are stored and transported to GPHC to be sterilized and disposed of, others such as expired medications are disposed of by the Food and Drug Administration of Guyana. These are accumulated and stored at the LHC until a significant quantity is acquired.

5.3.5 Hospital Facilities and Facilities Management

The LHC has several facilities that make up the hospital complex and these are important to efficient functioning of the hospital. There is a Maintenance Department which manages the facilities.

The primary medical wing of the hospital is comprised of a wide range of services and functional units. These include diagnostic and treatment functions, such as laboratories, imaging, emergency rooms, surgery, laundry services, and inpatient and outpatient care

The hospital is supplied with electricity from the Linden Electricity Company Inc. (LECI) and the supply is relatively reliable. The complex has two backup generators that service the hospital in case of a power outage. The first generator serves the main hospital building, and the second powers the entire facility. The expansion of the hospital is not expected to exhaust the current capacity of the generators, and therefore no additional generators will be needed.

The hospital receives potable water from the GWI, and water is stored in a series of water tanks, then pumped to areas around the hospital. While the current water storage facility is adequate to supply the current water needs, there will be the need for additional intervention to meet the demands of the extension.

There is a laundry department at the hospital complex with an industrial scale washer and dryer. While the washer is in working condition the dryer has been out of commission for a while. The hospital sends its laundry to the GPHC to dry and sanitize using their industrial dryer. This is time consuming and is of questionable hygienic practice. This practice is not sustainable and therefore there needs to be urgent intervention to remedy this issue. The expansion of the complex will see a higher turn-over of patients and therefore there will be need for an onsite and working laundry equipment.

The LHC's incinerator stopped working in 2020, and as a result, all sharp waste is stored in barrels and transported to the GPHC for disposal twice a year. This current arrangement is not effective and involves utilising resources that may otherwise be beneficial to other departments.

The LHC lacks a Fire Prevention and Protection Plan. However, fire prevention and protection has been subsumed into the hospital's OSH plan where training is executed in the first and third quarter yearly. The hospital has visible fire prevention equipment and fire points throughout the hospital compound. While there is training being conducted twice a year, there is need for a formal comprehensive fire prevention and protection plan to outline clear SOPs in case of a fire. This will support the training and ensure that there is a comprehensive approach to fire prevention and protection.

The compound of the hospital is not affected by flooding and there is a backflow prevention mechanism in place to prevent water from the Demerara River from entering the compound through the drainage system.

The proposed site for the extension of the facility is within the existing hospital compound. The extension of the hospital will require relocation of some departments. The proposed plans include demolishing the old hospital building to pave the way for a new maternal and child healthcare building. Once that building is completed and that service is relocated from the existing building, there will be space for the other interventions, and this will also reduce the disruption of services.

5.3.6 Occupational Safety and Health Administration

The Linden Hospital currently has a health and safety plan and a health and safety committee in place. The plan guides the OSH Officer in the execution of her duties. The plan was developed to ensure that there is a safe environment for the patients and staff while at the hospital. The plan caters for continuous training and upgrades in areas such as first aid, fire prevention, health and safety awareness, emergency evacuation and operation, job safety analysis, waste disposal, and inspection. These activities are done throughout year, with fire prevention and emergency evacuation occurring twice yearly. The plan is effective and is being implemented regularly. There will be a need for an updated plan once the hospital expansion has been completed to reflect additional and new services such as maternal and childcare.

5.3.7 Grievance Redress Mechanism

LHC has instituted several grievance and complaints mechanisms to offer redress to those who may have grievances. The hospital employs Patient Advocates to address the immediate concerns of the patients and to provide help and solutions where necessary. The formal complaints can be lodged in the suggestion/complaints boxes that are located at several key points in the hospital, or can be lodge directly with the CEO or Matron. Once the complaints are outside the scope of the CEO or Matron it is elevated to the Permanent Secretary of the Ministry of Health. Reports on the grievances, complaints and redress are logged and entered into the hospital's official records. Reports are generated and submitted to the MoH. The CEO observed that the suggestion boxes are not the most effective way of communication complaints as patients prefer to approach the Patients Advocates for help and support or to lodge a complaint or grievance.

5.3.8 Additional Considerations

The old hospital building also houses the Linden Hospital Complex Day Care Facility which is a 24 hours child care facility that assist parents with childcare during their working hours. The day care was started in 2015 by the hospital's management to reduce absenteeism and increase the punctuality of hospital staff. However, the Day Care Facility is now managed and administered by the Nurses' Association of the Linden Hospital. The Nurses' Association has complete oversight over the day-to-day management of the facility. The Linden Hospital and its administration are not associated with the day to day operation of the day care facility, other than to providing a space for the facility.

The childcare service has now been extended to the community and is currently accessed by parents in the public and private sector, including hospital staff members, police, security personnel, etc.

The childcare facility has a current enrolment of 65 students of ages ranging from 3 months old to 6 years old for the extended community, and up to 12 years old for staff of the hospital. Approximately 30 children are present at the facility per shift. 50% of the children are from parents that work at the hospital and 50% are from the parents from the wider community. Currently, about 50 parents use the day care services.

The childcare facility operates on a 24 hours a day basis on weekdays, weekends, and holidays. There is a shift system that is being employed to allow for the safe administration of care to the children. The shifts are between 7am to 3pm, 3pm to 12am and 12am to 7am. The facility currently has a staff compliment of 4, including a supervisor. The monthly cost for childcare at the facility is \$G6000 per student, this revenue is used to pay staff, clean and maintain the facility, provide furniture and other equipment and material that is required for the smooth running of the facility.

There are currently no plans by the management of the LHC to integrate the childcare facility into the plans for the hospital expansion.



Figure 5-13: The New LHC Building



Figure 5-14: The Old LHC Building



Figure 5-15: Administrative Block at the LHC



Figure 5-16: Inside the New LHC Building

5.3.9 Recommendations for Project Support and Implementation

During the site visit to Linden Hospital Complex and a subsequent virtual meeting, the CEO, Occupational Safety and Health Officer, Maintenance Superintendent, Matron and the Chairperson, Guyana Nurses Association - Linden Chapter who is in charge of the day care facility, expressed interest in the project and indicated the primary objectives of the expansion and rehabilitation is to enhance the hospital's operational capabilities by maximising space, procuring new equipment, and improving staff capacity. They have indicated that the hospital will serve as a hub for patients from the hinterland areas such as Regions 8, 9 and 10 due to improvement of the roadway. This will also reduce the patient load of the GPHC. As such, while the LHC can generally provide the required services adequately, the following were proposed:

1. Maximise maternity and child healthcare. This will involve the construction of a new building to house maternal and child health services. This will increase the current fifteen beds in the maternity ward, which cannot meet the current demand, to at least thirty beds. In addition, there is need for two private rooms which currently do not exist.
2. Increase and expand the A&E department to include a new emergency operating theatre and dedicated waiting area. This is especially important to cater for accidents which may occur along the new Linden to Mabura roadway.
3. Expand the radiology department, including installation of full-service diagnostic imaging equipment such as CT scan, ultrasound scan, X-ray machines, cardiographs, and echocardiograms, among others.
4. Construct a new maternal and child healthcare building, which includes a neonatal ward, maternity clinic, and operating theatre. This requires the demolition of the old hospital building.
5. Expand the current surgical suite to from one operating room to two, one dedicated to laparoscopic surgery, and procure additional equipment to provide better healthcare. This will

absorb some of the patient load from GPHC and increase access to specialised healthcare within the region.

6. Expand the ICU from a three-bed facility to a 10-bed facility.
7. Expand the obstetrics department.
8. Expand the laboratory department.
9. Expand the outpatient dressing area.
10. Expand the diabetic foot centre.
11. Improve the waiting areas.

The hospital administration was made aware of some of the potential impacts from project activities such as noise pollution and other activities associated with general construction works, and a number of mitigation measures were proposed:

1. It was proposed that the old hospital building be demolished and the new building be constructed. After the completion of the new building, services can be decanted to the new building completely which will make space for the rehabilitation and expansion of the existing building. This will ensure minimal disruption of services.
2. The hospital management team should discuss solutions and comprehensive approaches to ensure the safety of patients and hospital staff during the construction phase.
3. The hospital should assess the affected departments and use recommended methods to minimise disruption or relocate them, where necessary.
4. Contractors should develop a comprehensive HSSE policy to identify and mitigate risks and outline processes to ensure that workers adhere to it.
5. Before construction begins, the hospital OSH team should brief the contractors on the relevant rules, policies, and protocols and reiterate the importance of compliance to reduce injuries and create a safer work environment.
6. OSH Officer to monitoring contractor during the construction period to ensure the health and safety risks are managed.
7. To eliminate risks and reduce disruption in areas where construction will take place, contractors should:
 - Wear personal protective gear at all times
 - Isolate construction areas from active healthcare operations
 - Use temporary partitions
 - Develop a dust control plan
 - Use noise-reduction technology and avoid construction at night.
 - Maintain a clean environment as much as possible and dispose of construction debris regularly rather than letting material build up in areas.

5.4 ESA and ESMP Framework Consultation and Disclosure

Once a draft fit-for-disclosure version of ESA and ESMP framework, inclusive of a Stakeholder Engagement Plan and a Grievance Mechanism, was prepared the Ministry of Health embarked on a process of consultation and engagement with stakeholders. The disclosure process aimed at allowing stakeholders to understand the project's risks, impacts, potential opportunities and development benefits. The approach to the disclosure process included two methods to ensure stakeholders relevant to the project were engaged. Firstly, the ESA and ESMP framework, inclusive of the Stakeholder Engagement Plan and the Grievance Mechanism, were disclosed on the Ministry of Health website and social media page. Secondly, the document was shared with key stakeholders via email prior to the convening of a stakeholder consultation forum to present the ESA and ESMP framework to stakeholders and solicit their feedback. The disclosure process was guided by the Stakeholder Engagement Plan prepared for the project.

Stakeholders were provided with an opportunity to share relevant feedback on the project. The feedback provided as well as the responses by the Ministry of Health and the Consultant's Team are outlined in Table 5-11.

Table 5-11: Feedback Provided by Stakeholders and Responses

Organization	Feedback	MOH/Consultant Response
Deaf Association of Guyana	<p>It was recommended that:</p> <ol style="list-style-type: none"> 1. Clear visuals/signage be used to provide information to the differently abled, especially during the re-construction phase of the hospitals. Other systems such as lights can be used in cases of emergencies. 2. Provision should be made for the deaf community in registering grievances. It was suggested that the hospitals have interpreters available during project period to receive and record grievances. The Deaf Association is willing to mediate or recommend interpreters from within the communities to the hospitals within the scope of the project sites. 	<p>These recommendations will be taken on board as the project advances. Project implementation will cater for the various vulnerable population and the differently-abled population. (MOH).</p> <p>These measures are part of IDB's Environmental and Social Performance Framework and associated standards. These will be included in the Contractors' Management Plans. (Consultant).</p>
PAHO/WHO	<p>This project should ensure that the three main hospitals have a contingency plan, and waste management plans; ensure staff and auxiliary are trained in the various relevant areas; as well as have a preventative maintenance plan rather than corrective in the operations of the newly renovated facilities.</p> <p>In addition, SMART facilities standards should be applied to the retrograding of these facilities. These standards are published and shared with the Ministry of Health.</p>	<p>All new hospitals in Guyana are following the SMART Hospital standards. Part of the upgrading of the hospitals is to create a better patient flow, better cohesion, and to achieve a more environmentally friendly and safer service across the board. In the case of waste management plan, the Ministry of Health is currently drafting a Health Sector Waste Management Plan. (MOH).</p>

Organization	Feedback	MOH/Consultant Response
Kitty Health Centre	Very comprehensive study of the medical institutions. Good assessment, interventions and contractor responsibilities. Other medical facilities can be assessed as well with appropriate intervention where necessary.	
GPHC	Supervisory consultants should be on site to monitor activities, with support from the Hospitals' Occupational Health and Safety personnel.	It is recommended that the Supervisory Consultants have an Environmental and Social Officer on site, and responsible for project management and contractors compliance with the environmental, social, health and safety requirements. The role of the Occupational Health and Safety personnel is to ensure that these systems are functioning and not negatively impacting the hospital. Recommendations also involve Occupational Health and Safety personnel of the hospitals to be involved in the planning of work, systems and procedures so that these can be addressed and monitored closely. (Consultant).
GPHC	A communication strategy is needed to keep the wider population updated as the project progresses. This helps to reassure the public and to build confidence in the health sector. This will also allow the Health Sector to stay ahead of the narrative.	This will be done. All relevant information and updated information, notices, etc. will be communicated to stakeholders accordingly. (MOH).

The consultation session provided valuable interaction and feedback with stakeholders of the project and allowed for a clearer understanding of the project components, the environmental and social requirements, and the project's potential impacts and recommended mitigation measure. There was the exchange of important recommendations and suggestions from the stakeholders. The consultation process will continue, including maintaining the document on the Ministry of Health's website and their social media page and posting the recording of the consultation session to the Ministry's website and social media page. In addition, the consultation process with stakeholders will continue as the project details are finalized. The Disclosure and Consultation Report is attached as Appendix D.

6.0 IMPACT ASSESSMENT

6.1 Impact Assessment Methodology

The Health Care Network Strengthening Project, according to the IDB's classification, is Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction, rehabilitation and operation of healthcare facilities and associated infrastructure mainly associated with Component 1. The project is likely to cause mostly local and short-term negative environmental and associated social impacts for which effective mitigation measures are readily available. As such, it has determined that an ESA and ESMP Framework be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation.

The ESA and ESMP Framework are essentially safeguard instruments with the principal objectives to:

- Prevent or minimise potential adverse environmental and social impacts due to the project activities and components;
- Minimize human risk during the construction and rehabilitation works;
- Ensure environment, health and safety measures are implemented throughout the project's construction activities; and
- Enhance environmental management at the health facilities.

At this stage, final determinations on the scope of the project are still to be made. However, for the purposes of the ESA and ESMP framework, the project's activities relating to infrastructure improvement and equipment are considered as follows:²⁹

- i. infrastructure rehabilitation and expansion at the New Amsterdam Hospital, Linden Hospital Complex, and the Georgetown Public Hospital Corporation (GPHC), considering energy and water efficiency and climate change risk reduction features;
- ii. purchase of medical equipment and furniture for these and other facilities;
- iii. services for architectural and engineering design and construction supervision;
- iv. corrective and preventive maintenance of infrastructure works and medical equipment and improvement of installed maintenance capacity; and
- v. construction of maternity homes.

The aim of this chapter is to identify and evaluate the potential impacts that the project may have on environmental and social receptors. However, the project scope is not yet finalized and the design of the targeted interventions are not yet available. As a consequence, this impact assessment adopted a high-level approach to impact identification and analysis. To the extent possible, the impact assessment is also informed by the findings from the site visits and feedback from stakeholder engagements as discussed in Chapter 5.

Based on the IDB's environmental and social screening of the project, and given that key project details were not yet determined, it was recommended that the ESA and ESMP framework be prepared at this stage, and that environmental and social audits will be carried out prior to the start of any civil works for the facilities, and that separate ESA and ESMP be prepared for each sub-project. However, during the conduct of the ESA and preparation of the ESMP, key project details emerged, including the hospitals to be targeted under the project, and some of the likely interventions at each of these facilities, based on their current priority needs. These were taken on board in the conduct of the ESA to provide a better analysis and understanding of the potential impacts of the project.

²⁹ Sourced from Proposal for Operation Development (POD) for the Health Care Network Strengthening in Guyana Project (GY-L1080)

The impact assessment was done by identifying and rating potential impacts which could occur as a result of the proposed project activities. The analysis included two aspects. The first was having a clear understanding of the activities of the project and the Area of Influence (AoI) of the project. The primary AoI of the project is defined as the footprint of the hospitals, essentially the boundaries of the facility, and a 50 metre fringe in all directions around each hospital. The secondary AoI encompasses the area considered as the catchment of each facility, including the wider community around the hospitals and by extension the Administrative Regions within which the hospitals are located. The second aspect was to predict potential impacts that might reasonably be expected to occur during the construction and operational phases and their significance. Significant impacts will need to be managed, mitigated and/or monitored to reduce potential adverse impacts and enhance positive impacts. The approach to the ESA involves a standard impact assessment methodology as outlined below:

- **Stage 1 – Impact Identification:** To determine the potential impacts associated with project activities. This was achieved through professional judgment, site visits to the hospitals, desk top analysis and review of relevant literature, and consultations with project stakeholders.
- **Stage 2 – Impact Assessment:** To identify the importance of the issues identified by rating their significance and likelihood to occur.
- **Stage 3 – Mitigation and Management:** To recommend appropriate mitigation measures and management or monitoring controls to address potential significant negative impacts.

6.1.1 Stage 1 - Impact Identification

The potential impacts of the project are those that can change existing environmental and social conditions within the AoI in a negative or positive way. Identifying potential impacts attributable to the project requires an understanding of the baseline environmental, social and safety conditions in which the targeted hospitals are located. This understanding was achieved by visiting all of the hospitals, engagements with key personnel, and from the gathering and analysing of information on baseline conditions as described in Chapter 4. Further, an understanding of the project related activities was required, as is outlined in Chapter 2. Potential impacts are considered as positive or negative, direct or indirect, short-term or long-term, localized or local, regional and cumulative. Table 6-1 provides definitions for each type of impact considered.

Table 6-1: Definitions of Types of Impacts

Impact Type	Definition
Positive	An impact that results in a positive effect on the receiving environment or resource from activities performed at or by the project.
Negative	An impact that results in a negative effect on the receiving environment or resource from activities performed at or by the project.
Direct	An impact created as a direct result of the project.
Indirect	An impact which may be caused by the project, but will occur in the future or outside the project's AoI.
Short-term	An impact or activity that is expected to dissipate shortly after the cause ceases
Long-term	An impact or activity that is expected to continue for a significant time after the cause ceases
Cumulative	The total impact to a particular resource anticipated to occur as a result of a combination of effects produced together with neighboring projects.
Localized	Impact which is limited to the project's AoI.

Impact Type	Definition
Local	Impact which extends outside the project's immediate Aol, but is contained within the general vicinity of the project.
Regional	Impact which has extended beyond the vicinity of the project's Aol.

6.1.2 Stage 2 - Impact Assessment

The approach to assessing impacts can be either qualitative or quantitative, depending on available information and historical site-specific experience. Both are important in normal impact analyses. However, considering that the project is not complex, the project scope not fully defined, and will involve mainly construction activities, and given that an ESA and ESMP Framework is required, the impact assessment adopted a more of a qualitative approach.

The importance of an impact has been assessed by combining two impact elements:

- The **significance** of the impact on the resources should the impact occur; and
- The **likelihood** of that impact occurring.

In determining the **significance level**, consideration was given to the types of impacts from each project activity relative to existing baseline environmental and social conditions. This is described in Table 6-2.

Table 6-2: Impact Significance Level Descriptors

Significance Level to Potentially Impacted Environmental or Social Resources				
Negligible	Minor	Moderate	Major	Extreme
Minimal impact in a localized area of little or no consequence.	Low impact in a localized or regional area with a functional recovery within one year.	Medium impact in a localized or regional area with a functional recovery of 1 to 5 years.	High impact in a localized or regional area with a functional recovery within 5 to 10 years.	Very high impact in a broad regional area or area of national significance with functional recovery in greater than 10 years, if at all.

In determining the **likelihood levels**, consideration was given to the probability of an identified environmental or social resource to be impacted by the project. The anticipated likelihood of occurrence of an impact was identified to range from Rare to Certain (Table 6-3).

Table 6-3: Impact Likelihood Levels

Likelihood of Impact to Environmental or Social Resources				
Rare	Unlikely	Likely	Almost Certain	Certain
Highly unlikely to occur but theoretically possible.	May occur within the life of the Project or activity.	Likely to occur more than once during the life of the Project or activity.	Very likely to occur during the life of the Project or activity.	Expected to occur as a result of the Project or activity.

Utilizing the outcomes of both the impact significance ranking and the identified likelihood of impact, the effect of each impact causing action on the receiving environment is evaluated. The risk level (or importance) is assessed by combining the significance column and the probability row in the following Risk Assessment Matrix (Table 6-4).

Table 6-4: Risk Assessment Matrix

		Significance				
		Negligible	Minor	Moderate	Major	Extreme
Likelihood	Rare	Low	Low	Low	Medium	Medium
	Unlikely	Low	Low	Medium	Medium	High
	Likely	Low	Medium	Medium	High	High
	Almost certain	Low	Medium	High	High	Critical
	Certain	Low	Medium	High	Critical	Critical

Note: Where the Significance of an impact is indicated to be positive, the importance will also be positive.

6.2 Environmental Resources

This section discusses potential impacts to environmental resources including soils, water resources, ambient noise levels and ambient air quality. Generally, most of the potential environmental impacts are expected to occur during the construction phase of the project although minor impacts may also be associated with operations.

6.2.1 Soils

Potential impacts of planned project activities include soil disturbance and erosion, compaction and pollution.

6.2.1.1 Soil Disturbance and Erosion

Project construction activities may require soil disturbing activities including the clearing of topsoil to facilitate the construction of new buildings, and for the provisioning of essential services such as the installation of water storage reservoirs to enhance water supply. Soil disturbing activities, including topsoil clearing, may increase risks of erosion. However, all three of the hospital targeted are located in flat areas which are not highly susceptible to erosion. In addition, given the interventions planned under the project, the disturbed area is expected to be small, and restricted to within the existing hospitals compounds. In addition, the soil within these compounds is disturbed and may be subject to frequent landscaping activities.

These potential impacts can be well managed if appropriate measures are in place such as spreading cleared soils around the premises. As a result, potential impacts of soil disturbance, including topsoil removal and erosion are **negative, direct, short-term** and **localized** and of **negligible significance**. However, soil disturbance is **almost certain** to occur. As such, soil disturbance and erosion are **Low Risks** from project activities.

6.2.1.2 Soil Contamination

Soils may be accidentally or intentionally contaminated by the dumping of wastes during project construction. Wastes generated by construction activities will comprise primarily general solid wastes including food wastes, empty packaging from construction materials, plastics, paper, cardboards and construction waste. To a limited extent, soils may be contaminated by small quantities of hazardous

materials and waste such as fuels used for construction machinery such as cement mixers, bob cats, etc. as well as waste oils from planned or unplanned maintenance of construction machinery. Also, there could be potential accidents or compromise of medical waste storage (in particular hazardous waste) during construction (building demolitions, temporary storage sites etc.). Construction may also contribute to increases in sewage generated on-site by construction workers. The implementation of good environmental management measures during construction can mitigate these risks entirely, including implementing appropriate environmental management practices for the proper collection and disposal of wastes. In addition, plans to manage waste should be outlined in the contractors' Environmental and Social Management Plan (CESMP) and implemented by the contractor to manage wastes generated by the construction process, including construction waste. Potential impacts of soil pollution are **negative, direct, short- to long-term** and **localized** and of **minor significance** but are **unlikely** to occur if appropriate management measures are implemented. As such, this is a **Low Risk** from project activities.

6.2.1.3 Compaction

The nature of the soils at the hospital sites may make them susceptible to compaction and subsidence beyond the permeable limits of the soil, in particular in relation to the clay soils which prevail on the coastal areas (GPHC and NARH). Potential risks of compaction are likely to be greatest at material stockpile areas. Soil compaction may contribute to ponding of water on the surface of soils which may contribute to soil subsidence and erosion at the surface. However, project construction activities are expected to have limited use of heavy machinery and vehicles. In addition, material stockpiles will be established temporarily and as a result the anticipated footprint of compaction is a relatively small area. Further, soils within the hospitals compounds were most likely previously compacted during land filling of the compound, and in some cases, such as at the GPHC, the areas are covered by asphalted tarmacs and concrete. Potential impacts of compaction are **negative, direct, short-term** and **localized**, of **minor significance** and are **likely** to occur in some situations. As such, this is a **Medium Risk** from project activities. However, if appropriate mitigation measures are implemented this would be a Low Risk.

6.2.2 Water Resources

Potential impacts to surface water and groundwater resources includes sedimentation and pollution from construction activities. However, as discussed further below, pollution of water resources may also potentially occur during the operational phase of the project.

6.2.2.1 Sedimentation

Project activities can temporarily increase sedimentation of nearby water bodies. Construction activities will result in soil disturbance which may result in an increase of sediments being transported to the drains by surface runoff, especially during the rainy season. The project is not expected to impact groundwater resources.

Potential impacts of changes in physical parameters of surface water bodies and groundwater resources are **negative, direct, short-term** and **localized**, of **negligible significance** and are **unlikely** to occur if appropriate management measures are implemented. As such, this is a **Low Risk** from project activities.

6.2.2.2 Pollution

Surface waters or groundwater resources may be accidentally or intentionally contaminated by the discharge of fuels and waste oils or other hazardous wastes during the construction phase of the project including any demolition that may be required. There may also be the risk of pollution of nearby

waterways from improper management and disposal of general solid waste, liquid waste including sewage and bio-medical waste. During the operation of the facilities there are also risks of contamination from improper disposal of waste, especially liquid waste including sewage and bio-medical waste.

The implementation of good environmental management measures during construction can mitigate these risks. Plans to manage waste should be outlined in the contractors' CESMP and implemented by the contractor to manage wastes generated by the construction process. During the operation phase waste management plans should be developed and implemented for each facility and should adequately address the disposal of liquid waste as part of site specific ESAs/ESMPs and CESMPs. Potential impacts of pollution of surface waters are **negative, direct, short- to long-term and localized, of minor significance** but are **likely** to occur. As such, this is a **Medium Risk** from project activities. However, if appropriate management measures are implemented, this can be a **Low Risk**.

6.2.3 Ambient Noise Levels

Baseline ambient noise levels are expected to increase during the construction phase of the project as a result of use of construction equipment and machinery. Ambient noise levels may also be influenced by cultural behaviours of some contractors' workers, for example, playing of music on loudspeakers or speak loudly when on-site.

Given the range of sensitive receptors in proximity to and within the hospitals, noise levels during construction would have to remain within the decibel limits established by the GNBS for construction activities which are a day-time limit of 90 dB and a night-time limit of 75dB. Even at these levels significant noise and vibration by the use of power tools, construction activities, etc. can affect close-by receptors such as staff and visitors, and especially certain categories of patient. This situation can be exacerbated when work is being done within the existing buildings which are still being utilized by the hospitals.

For project workers, according to the standard from the US Department of Labour, Occupational Safety and Health Administration, workers are at risk of adverse effects of noise exposure, including hearing loss, when noise exposure is at or above 85 decibels averaged over 8 working hours, or an 8-hour time-weighted average³⁰.

Risks of occupational exposure to high noise levels may be mitigated with the use of appropriate hearing protection. In addition, risks of environmental exposure may be managed by engaging with proximate receptors and the management of the hospitals to inform them of project activities and to make special provisions per site, as necessary. These special provisions may include no noise generating activities being conducting during certain periods, the temporary relocation of hospital services and personnel, including patients and installation of noise abatements measures such as baffle walls. In light of these circumstances, potential impacts associated with environmental and occupational exposure to noise are **negative, direct, short-term and localized, of moderate significance** and are **likely** to occur at some of the hospitals to be intervened. As such, this is a **Medium Risk** from project activities.

6.2.4 Ambient Air Quality

During the construction phase of the project there is likely to be an increase of particulate matter from soil disturbing activities particularly if these activities are conducted during the dry seasons. Increased particulate matter loads may be associated with stockpiling dry materials, such as sand, during the cement mixing process, and cutting of concrete walls, floors and blocks, and demolition of existing

³⁰ US Department of Labour, Occupational Safety and Health Department, undated. Occupational Noise Exposure.

structures or parts of existing structures. In addition, during the construction phase pollutants associated with combustion of fuel used by construction machinery may be increased. Sensitive receptors to increased emissions of particulate matter and gases from fuel combustion include staff, patients and visitors, construction workers and community receptors.

Particulate matter and gases from fuel combustion are likely to disperse rapidly given the open areas in which construction works will be located and community receptors are not expected to be adversely impacted. In addition, management and mitigation measures may significantly reduce environmental and occupational exposure to these emissions.

According to the standard from the US Department of Labour, Occupational Safety and Health Administration, workers are at risk of adverse effects of exposure to particulate matter (dust) with maximum exposure limits of 15 mg/m³³¹. Given the works which are likely to be conducted, it is not expected that occupational levels will rise above this threshold. However, if these levels are to be exceeded risks to workers may be mitigated by use of protective masks and goggles.

Given that the works will be conducted within the existing compound of the hospitals, and in some cases within existing buildings being utilized, or close to buildings being used to provide health care services, to impact of dust generation will be a concern. Poor air quality, and the presence of molds and any hazardous materials which may be found such as asbestos etc. could affect health facility workers, patients and visitors and can result in either minor or severe health impact depending on the level and duration of exposure. Certain patients, such as those who are asthmatic, are more at risk. Therefore, measures need to be implemented to prevent and control dust emission. The potential impacts of environmental and occupational exposure to high dust levels and gases from fuel combustion are **negative, direct, short-term and localized, of moderate significance and will likely occur**. As such, these are **Medium Risks** from project activities.

During the operation phase emissions from the incineration of increased amounts of waste from the New Amsterdam and Linden Hospitals could result into localized air pollution as this activity could degrade air quality for nearby receptors. However, the incinerators at both facilities are not consistently operational. The MoH is exploring other options for the management of waste for the health sector, including establishing a centralized hydroclave. A hydroclave is already installed at the GPHC.

6.2.5 Greenhouse Gas Emissions

The primary direct sources of greenhouse gas emissions from the project will be emitted during the construction phase from the combustion of fuel by construction machinery and vehicles to be used by the contractor. These emissions are not expected to be significant, given that the use of these machinery will be periodic during the construction phase.

No significant vegetation clearing will be required since the project sites are considerably disturbed and are within the existing hospital compound. In addition, none of the project sites are considered to be forested areas based on the definition of forests which has been adopted by the Guyana Forestry Commission (GFC) of crown cover of 30 percent, mature stand height of 5 meters and coverage of 1 hectare. During the operational phase of the facilities, following the project's interventions, greenhouse gas emissions are expected to be insignificant. It should be noted that IDB's Environmental and Social Policy Framework (ESPF), Environmental and Social Performance Standard (ESPS) 3 – Resource Efficiency and Pollution Prevention, requires *“For projects that are expected to or currently produce more than 25,000 tons of carbon dioxide (CO2)-equivalent annually, the Borrower will quantify gross emissions from the project, including direct and indirect emissions associated with the project.”*³²

³¹ US Department of Labour, Occupational Safety and Health Department, undated. Permissible Exposure Limits. OSHA Annotated Table Z-1.

³² IDB, 2020. Environmental and Social Policy Framework, Environmental and Social Performance Standard 3, pg.57

Based on information regarding the three hospitals operations these do not exceed 25,000 tons. The estimated Gross GHG emissions (tCO₂e) during construction is 2,288 tons while the estimated annual Gross GHG emissions (tCO₂e) during operation is 397 tons.

There is a possibility that second-hand medical equipment may be considered for procurement and as such it may not be possible to meet best practice standards due to physical or cost restraints. However, final design considerations will include the use of more energy efficient demand-side equipment (e.g., A/C units, fans, and lighting fixtures).

Considering these factors, the potential impacts to climate change from greenhouse gas emissions from this project is **negative, direct, long-term** and **localised** in extent. The significance of these impacts is **negligible** and their likelihood is **certain**. As a result, greenhouse gas emissions contributing to climate change are considered to present a **Low Risk** of contributing to increased greenhouse gas emissions at the national level.

The project may actually contribute to an overall reduction of greenhouse gas emissions during the operation phase if solar energy is included in the project. This will offset the use of fossil fuel that would have been required to provide power to the hospitals. This will prevent the release of carbon dioxide as compared with power generation from diesel. There could also be opportunities to enhance the current system of incineration. The potential impact of offsetting carbon emissions is **positive, direct, long-term** and **regional**. This impact is one of **moderate significance** and is **certain** to occur. As such, the project has a **High Likelihood** of contributing to a **Beneficial Impact** for climate change mitigation.

6.3 Biological Resources

The project will not impact biological resources. The interventions at the three hospitals will occur within the existing hospitals compound. These lands are all cleared of primary vegetation and, therefore holds no ecological value. There are no species of importance (Rare, Endangered, and Endemic) inhabiting these locations, and there is no area which can be considered a critical habitat since they are all urban/peri urban areas and disturbed/brownfield sites. The hospitals are not located in close proximity to any protected or sensitive areas.

6.4 Social Resources

The project is expected to have both positive and negative impacts to social resources through the different phases of the project.

6.4.1 Land Take and Disruption of Services

The project activities at the three hospital sites will occur within the existing compounds of these hospitals. As such, no additional external land will be used by the project or no land acquisition required. However, if the scope of the project changes and land outside of the boundaries of any of the three hospitals is required this will require detailed assessment and mitigation approaches as part of the environmental and social audit and site specific ESAs/ESMPs.

At this stage, project activities will occur within the existing compounds and therefore some current activities and services will be disrupted.

Based on the priority needs identified by each hospital, the likely intervention will involve the construction of new buildings and the rehabilitation, extension and repurposing of existing buildings. There are available areas within the hospital compounds for new structures to be constructed. However, some activities may need to be relocated. At GPHC, the containers being used as storage

may need to be relocated to facilitate the construction the new inpatient and outpatient building. There are plans to construct a new storage area within the compound. Parking areas currently being utilized will be lost due to the construction of the new A&E building. In addition, there may be a temporary disruption of parking in the vicinity of where the new inpatient and outpatient building will be constructed during the construction period. This will exacerbate the current challenges that exist relating to parking for staff, patients and visitors.

At the Linden Hospital Complex, a day care is currently housed in the building to be demolished to facilitate the construction of the new maternal and child health building. This is a 24 hours child care facility that assist parents with childcare during their working hours. The day care was started in 2015 by the hospital's management to reduce absenteeism and increase the punctuality of hospital staff. However, the facility is now managed and administered by the Nurses' Association of the Linden Hospital. The childcare service has now been extended to the community and is currently accessed by parents in the public and private sector, including hospital staff members, police, security personnel, etc. The facility has a current enrolment of 65 students of ages ranging from 3 months old to 6 years old for the extended community, and up to 12 years old for staff of the hospital. Approximately 30 children are present at the facility per shift. 50% of the children are from parents who work at the hospital and 50% are from the parents from the wider community. Currently, about 50 parents use the day care services. There is a shift system that is being employed to allow for the safe administration of care to the children. The shifts are between 7am to 3pm, 3pm to 12am and 12am to 7am. The facility currently has a staff compliment of 4, including a supervisor. The revenue earned from fees collected is used to pay staff, clean and maintain the facility, provide furniture and other equipment and material that is required for the smooth running of the facility. The services of the day care will be disruption by the new building construction, and will have to be relocated prior to construction.

At the New Amsterdam Regional Hospital, there will be no such disruptions. However, services may be disrupted during the rehabilitation and repurposing works to be conducted within the hospital.

At all three of the hospitals there will be the disruption of existing services to facilitate rehabilitation, repurposing and expansion of existing facilities. Since the health facilities will continue to provide health care to the public during the construction period, they could experience shortages of working space, and some services may have to be relocated. It may also necessitate moving patients or equipment from one area or room to another and could lead to temporary disruption of health care services. However, these impacts can be mitigated by careful planning during the construction period. The new buildings should be constructed first, then existing services be relocated to those buildings, and once this is done work could commence within the existing space.

Potential impacts of project interventions on existing uses and activities are expected to be **negative, direct, short-term** and **localized**, of **major significance** and are **likely** to occur. As such, this is a **High Risk** from the project.

6.4.2 Improved Facilities

The project is expected to improve access, use, and quality of health services in Guyana. The three hospitals benefiting from the project have a catchment population of around 315,000 persons, nearly 40% of the entire population³³. This population will have greater access to improved clinical and diagnostic services, and benefit from higher quality health care. The project will support interventions that will:

- increase the number of consultations and examinations provided at the primary level of care;

³³ Proposal for Operation Development (POD) for the Health Care Network Strengthening in Guyana Project (GY-L1080)

- increase referrals to district and regional hospitals for consultations, examinations and/or procedures that require a more specialized level of care;
- increase access to radiology and ophthalmology services; and
- ensure the continuous availability of key medicines, inputs, and supplies in health facilities.

In addition, the project will address gaps and deficits at the three hospitals. The GPHC is the main national referral hospital in the country (level 5),³⁴ as well as the premier medical teaching and research facility. It also functions as the Regional Hospital for Region 4 – Demerara - Mahaica and the District Hospital for Georgetown. Several improvements to the hospital infrastructure are necessary to overcome gaps relating to capacity, quality, and growing demand for specialist services. Inpatient bed supply is inadequate, with some wards consistently experiencing over 100% occupancy rates. The general Intensive Care Unit (ICU) has only seven beds, and specialized ICUs and high dependency units frequently have waiting lists. As a shift progresses to more sophisticated minimally invasive surgery techniques and noninvasive procedures, the lack of specific outpatient day recovery beds is becoming an important limitation. The main operating theater currently has just six suites, which is insufficient to attend to the growing quantity of elective surgeries requested by an expanded array of medical specialists. The accident and emergency department has a bed assignment that covers merely 50% of demand and no areas for pediatric and psychological examination and isolation. Additional physical deficiencies exist in laboratory, pharmacy, imaging, and support services (administration, warehousing, and staff environments). Over the years, in the absence of a master plan, the spontaneous addition of services through improvised infrastructure and settings on the GPHC campus has created a situation of improper patient flows, supply provision, and medical waste disposal, in which transfers occur in the open environment and sometimes across public thoroughfares. This generates risks of accidents and cross-contamination. In the most extreme cases, such as the maternity ward, wooden buildings from the 19th century at GPHC are still operational and represent fire hazards due to faulty electrical installations.

Similar situations exist at both the New Amsterdam Regional Hospital and the Linden Hospital Complex. The New Amsterdam Hospital is the second largest hospital after GPHC, and along with the Linden Hospital Complex, serve a significant catchment area, including receiving patients from other regions and the hinterland. Both hospitals possess limited capacity in their accident and emergency departments, intensive care units, high dependency units, surgical suites, and imaging departments. Moreover, New Amsterdam was constructed nearly twenty years ago and has undergone minimal renovation and expansion since then. It lacks sufficient installations for outpatient clinics, inpatient wards, and the pathology laboratory and has no buildings to house a central sterilization unit, administration, and medical and paramedical staff on call. The Linden Hospital Complex is unable to properly deliver the full contingent of obstetric, neonatal and child health services. It also does not have a burn unit to attend to accident patients. Strengthening these regional hospitals to provide the full contingent of level 4 services will also reduce the transfer of patients to the GPHC, thus reducing the patient load of that hospital.

The project is intended to address the issues outlined above at the three health facilities. It will improve the delivery of health care to the target population, and the country as a whole. It will also improve environmental, social, health and safety practices at these institutions. Other measures such as those relating to energy and water efficiency, climate change disaster risk reduction features and equipment that reduces GHG emissions can also be incorporated, thus improving from the current situation. These impacts are **positive, direct, long-term and localized, of major significance** and are **almost certain** to occur at all of the project sites. As a consequence, these impacts have **High Likelihood** of producing a beneficial impact.

³⁴ There are five levels of health facilities by level of service complexity: health posts (level 1), health centers (level 2), district hospitals (level 3), regional hospitals (level 4), and reference hospitals (level 5). In practice, facilities often provide services below their indicated level and may not have capacity to deliver the full array of services that they should.

6.4.3 Local Employment

Positive socio-economic impacts are expected to occur whenever there is construction activity. This brings more opportunities for employment and consequently, income, which can be used to improve welfare and quality of life. However, it should be ensured that persons are not discriminated based on age, race or gender, and all workers are remunerated fairly in accordance with Guyana's labour laws. In addition, the project will also contribute to the indirect employment of the local population through food vendors, transportation providers, etc. though there could be the likelihood of disruption and displacement of these service providers during construction at some facilities, especially from the transportation and storage of construction materials and equipment. This would need to be assessed as part of the environmental and social audits and site specific ESAs/ESMPs and measures to address any possible disruption should be included in the CESMPs. For the purposes of this ESA and ESMP framework, the impacts of direct and indirect employment on the local population are **positive, direct, long-term, and local, of minor significance, and certain** to occur. As such, project employment is considered to result in a **Medium Likelihood** of creating a **Beneficial Impact**.

6.4.4 Traffic

All three of the hospitals are located in townships/urban areas where there is a heavy flow of traffic. The sites are all located along or close to main roadways. For the construction works, construction materials, equipment and personnel will have to be transported to work sites resulting in increases in traffic. This can lead to minor traffic congestion, especially around the hospital sites, which are already congested. Construction activities could also affect parking access, ambulatory response and access and non-medical emergency response vehicles which may need to respond during an emergency e.g. fire onsite, or police presence required onsite during the course of construction works. If the facilities are expanded without adequate provisions for parking to cater for increased visitation and activities, this could lead to congestion during the operational phase. As such, potential impacts of traffic congestion during the construction and operation phases are **negative, direct, long-term, local, of moderate significance** and will **likely** occur. As such, this presents **Medium Risks**.

6.4.5 Archaeological Resources

Even though the hospital sites are not associated with any known archeological findings there is still the possibility of finds that may be of historical value to Guyana. Therefore, if present within the areas, artefacts can become damaged or lost as a result of certain activities, especially land clearing. As a consequence, historical and cultural information on Guyana's early period could be permanently lost. However, the impacts could be entirely mitigated if appropriate chance find measures are implemented during the construction phase of the project. Potential impacts of loss or damage to archaeological resources during the construction phase are **negative, direct, long-term, regional, of moderate significance** but may **rarely** occur given the small footprint of the project and that no other archaeological resources are known to have been found in the area even though it is disturbed. As such, this presents **Low Risks**.

6.4.6 Impacts to Gender and Vulnerable Groups

The IDB commissioned a Gender and Diversity Assessment of the Health Sector in Guyana in 2022 to identify opportunities to mainstream gender, indigenous peoples and people with disabilities' issues in all activities of the Health Care Network Strengthening in Guyana project. The Gender Analysis (GA) includes an analysis of the socioeconomic context, social determinants of health, the health situation, gender and diversity-related access barriers to services, as well as a comprehensive strategy to promote gender equality and inclusion of indigenous peoples and people with disabilities in the design and execution of the program through culturally adapted solutions.

The results of the assessment shows that generally women are affected more than men by health issues and the by lack of access to adequate health care. The GA also found that women from indigenous communities are even more affected.

There is the potential for renovation/construction activities to impact or inconvenience women (especially pregnant women) and persons with vulnerabilities (such as disabilities). This is especially as a result of expected inconveniences due to lack of access to critical health services during the renovation of three hospitals. The disruption of hospital services is already addressed in Section 6.4.1. Construction works may exacerbate direct and cumulative (existing) impacts from natural hazards such as flooding, along with increased exposure to hazardous materials and infections/diseases (workers, patients, visitors and communities) due to the sector and nature of works, risk of conflict with contractors/injury due to the presence of heavy machinery/over-sized vehicles, and risks from the potential influx of workers from a variety of areas both locally and outside the country via shared borders. If the hospitals are expanded or renovated without adequate provisions for women and vulnerable groups, including the services accessed by these groups, the construction works will have negative impacts on them. As such, this potential impact during the construction is **negative, direct, short-term, local, of Major significance** and will **likely** occur, thus presenting **High Risks**. However, it is expected that management and mitigation measures will be implemented, thus reducing this risk. Improved facilities during the operational phase will see beneficial impacts to both women and other vulnerable groups through improved facilities and services and better access to health care.

6.5 Health and Safety

6.5.1 Occupational Health and Safety

Health and safety is a key concern at any construction site. Workers are usually exposed to situations which can result in serious accidents, some of which can be fatal, if established guidelines and practices are not properly communicated or complied with. Risks can result from the improper use of construction machinery and equipment or accidents on the work sites. The health and safety of workers are therefore major concerns during the construction period.

The following are therefore possible health and safety risks which are likely to be encountered at the construction site:

- Illnesses from exposure to dust and noise.
- Serious Injuries or death caused by falling from working at heights.
- Injuries or death from vehicular accident or use of construction tools/equipment.
- Injuries from slips, trips and falls.
- Injuries or ill health caused by heat-related illnesses such as sunburn, heat stress, heat exhaustion or heat stroke as a result of working under extremely hot conditions.
- Exposure to vectors such as termites, mosquitoes etc.
- Risk of contracting illnesses from being within and exposed in a health facility such as COVID 19.

While training and monitoring should be conducted and can reduce the risk of any serious incidents, accidents can still occur. Risks may include accidents during site preparations, transporting and offloading of construction materials, improper use of equipment, improper use of harness and lanyard, slip or trip while traversing the work sites, etc. In such cases, these exposures can result in physical injuries such as cuts, bruises, loss of limbs or can even be fatal. However, given that the project sites are within existing health care institution, any injury or illness can be tended to in a timely manner. Potential impacts to workers health and safety are **negative, direct, short-term** and **localized**. These potential impacts are of **major significance** without mitigation but can be largely avoided if appropriate

mitigation measures are put in place and are therefore **unlikely** to occur. This presents **Medium Risks** from project activities.

6.5.2 Health, Safety and Security of Hospital Staff, Patients and Visitors

The works under the project will be done within the existing hospitals setting and, as such, there are potential impacts to the health, safety and security of staff, patients and visitors. These potential impacts include noise and dust nuisance, unsafe work conditions in material stockpile areas and construction zones, and sexual harassment by construction personnel. As previously discussed, to the extent possible, services which are within or close by to construction zone should be relocated prior to the commencement of construction in those areas. Other measures can also be implemented to reduce risks, such as fencing or cordoning off of the construction sites, installing dust screens and noise barriers, use of alternative access and parking, etc. It is also expected that the works will be monitored by the health and safety personnel at the hospitals to ensure that the contractors comply with the health and safety requirements. Potential impacts to the health, safety and security of staff, patients and visitors are **negative, direct, short-term** and **localized** and of moderate significance during construction. However, given the management measures in place by the MoH and regional health authorities and with appropriate mitigation measures these potential impacts can be of **minor significance** and are **likely** to occur. As such, these are **Medium Risks** from the project activities.

6.6 Disaster Risk Assessment

According to the IDB, the project's disaster risk (Type 1 and 2) is moderate due primarily to natural hazards, primarily flooding which can also be caused/exacerbated by climate change (e.g., increased precipitation events) which are likely to occur or already exist. These may moderately impact the project, and increase/or exacerbate risk during renovation/construction activities linked to existing issues with hospitals in operation such as poor drainage and proximity to the coast/rivers. Current hospital infrastructure and potential new construction (2-3 story buildings in locations of intermediate geology), and associated facilities, could further elevate risk (criticality/vulnerability) if appropriate measures are not incorporated/implemented in the project design.

Guyana is spared of the natural disasters which usually affect the Southern Caribbean and Western South America regions as the country is not exposed to hurricanes, volcanoes, or earthquakes. The main natural disaster in the country is flooding. This section examines Guyana's risks to disasters which may occur within the wider region.

6.6.1 Climate Change Related Risks

Guyana climate profile is presented in Section 4.1.2. The country is at risk from acute and chronic climate hazard. Changes in climate hazards (such as increasing temperatures and changing precipitation variability and intensity) are already being experienced³⁵. Climate change projections indicate that temperatures will continue to increase across Guyana. Furthermore, it is likely that average annual precipitation will decrease, however the proportion of precipitation that occurs in heavy rainfall events will increase. This in turn is expected to exacerbate adverse social, economic and environmental impacts and act as an additional stress factor on exposure which will exist even in the absence of climate change. Responding effectively to the challenges presented by climate change require an understanding of the impacts of climate change and implementing appropriate measures to address the risks and adapt to the impacts.

³⁵ Government of Guyana, 2012. Second National Communication to the United Nations Framework Convention to Climate Change.

Trends

Mean annual temperatures in Guyana have increased by 0.3°C since 1960, an average rate of 0.07°C per decade. This rate of warming is less rapid than the global average, however, it is in line with projections for equatorial regions. Further, the rate of increase is similar (~0.1°C per decade) in all seasons, except during the secondary dry season (the February-March-April period), when there is no apparent trend in temperature. Although the rate of increase in mean temperature is moderate relative to the increase in the global average, the frequency of particularly hot days and nights,³⁶ has shown a significantly increasing trend since 1960 in every season (where data is available). The average number of 'hot' days per year in Guyana has increased by 93 (an additional 25% of days) between 1960 and 2003. The rate of increase is seen most strongly in the primary dry season (the June-July-August period), when the average number of hot summer days has increased by 9 days per month, an additional 30% over this period. Further, the average number of 'hot' nights per year increased by 87 (an additional 24% of nights) between 1960 and 2003.

Since the 1960s, observed climate data shows increases in mean annual precipitation, with an average rate of increase across Guyana of 4.8mm per month, an increase of 2.7% per decade. However, this includes consideration of heavy precipitation events in 2005 and 2008. As a consequence, trends in seasonal precipitation are not statistically significant. Further, where data are available, there is also no evidence of any significant trends in heavy one-day or five-day precipitation events.

Predictions

Research undertaken by the Climatic Research Unit (CRU) of the University of East Anglia used the pattern-scaling technique to emulate climate change projections from an ensemble of Global Climate Models.

Figure29-1 shows changes in national average temperature (x-axis) and precipitation (y-axis) for fixed amounts of global warming (of 1, 2, 3, 4°C, etc.). The projections considered changes for 21 Coupled Model Inter-Comparison Project (CMIP) 3 models, 21 CMIP5 climate models and 18 (Quantifying Uncertainty in Model Predictions) QUMP climate models thereby giving a full range of available projections. However, the models are not intended to provide probabilistic projections of future climate change.

³⁶ A hot day or hot night is defined by the temperature exceeded on 10 percent of days and nights in the current climate of the specific region and season.

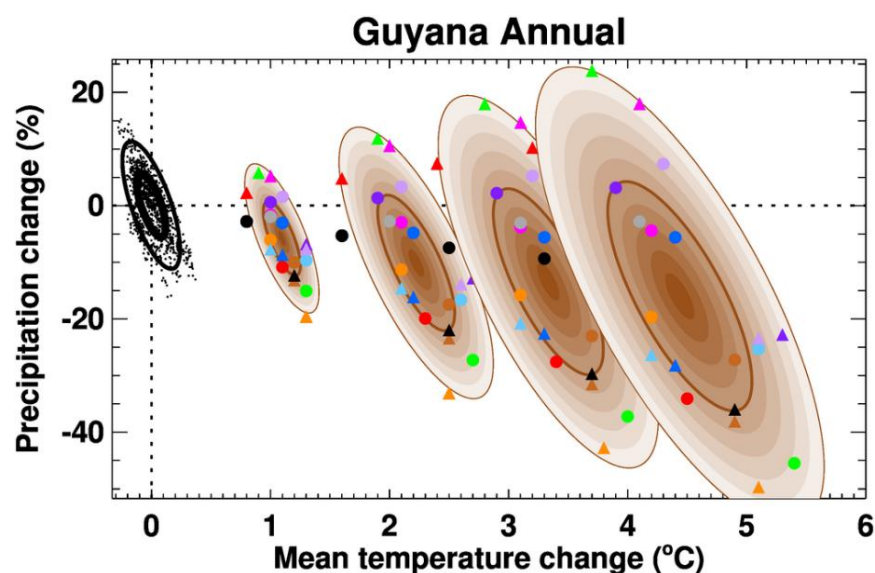


Figure 6-1: Annual Uncertainty in Climate Change Projections for Guyana³⁷

In addition to the CRU models, the national-level projections for climate change in Guyana were prepared in 2010 using the outputs from several General Circulation Models (GCMs) following the A2, A1B and B1 Special Report on Emissions Scenarios (SRES) scenarios. The findings of the projections are consistent with the findings of the CRU models. The projections shows that average annual precipitation is expected to decrease but there is not clear direction of the trend. There is uncertainty about the values as both positive and negative projections of precipitation change are generated when minimum and maximum values are considered in particular for change in annual precipitation³⁸. Projections vary between -34% to +20%, by the 2090s with ensemble median values of -18 to -4%. The largest decreases in total rainfall are projected for the primary wet season although some positive change is also projected (-68 to +21mm per month). Further, relative changes in rainfall projected show the strongest decreasing signal in the primary dry season and the secondary wet season (-82 to +68%).

In addition, the 2010 projections indicated that average annual temperatures will continue to increase. At the national level, the mean annual temperature is projected to increase by up to 2.0 °C by the 2030s, up to 3.3°C by the 2060s, and up to 6.0°C by the 2090s. The projected rate of warming is similar in all seasons, but more rapid in the southern, interior regions of the country than in the northern, coastal regions. Table 6-5 shows the range, direction and extent of change in average annual temperature and precipitation for the 2030s, 2040s-2060s and 2070s-2100 according to the 2010 projections.

Table 6-5: Projected Average Annual Temperature and Precipitation for Selected Periods

Climate Variable	2030s	2040s – 2060s	2070s – 2100
Average annual temperature (°C)	+ 0.4°C to 2.0°C	+ 0.9°C to 3.8°C	+ 1.4°C to 6.0°C
Average annual precipitation (% change)	-29% to +14%	-41% to +13%	-63% to +20%

Source: Adapted from the draft *Climate Resilience Strategy and Action Plan* (GoG, 2014) based on GCM projections by McSweeney et al. (2010)

³⁷ Osborne et al. 2016. Climate Information for Guyana

³⁸ McSweeney, C; New, M; Lizcano, G, 2010. UNDP Climate Change Country Profiles Guyana.

In addition, projections for changes in annual average temperature and precipitation for the South American region in the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report indicate that warming is projected to increase by 1.7°C to 6.7°C for Representative Concentration Pathway (RCP) 4.5 and 8.5 respectively. Changes in precipitation vary geographically but increases in average annual precipitation is expected primarily in south-eastern South America while decreases are projected to occur in the northern regions of South America³⁹.

In summary, based on the projections from the CRU models, Guyana's national scaled modelling in 2010, and IPCC regional models it is:

- ***almost certain*** that average annual temperatures will increase and,
- ***likely*** that average annual precipitation will decrease.

Projections for Temperature Extremes

All projections conducted in 2010 using the SRES scenarios indicate substantial increases in the frequency of hot days and nights. Hot days are projected to occur on 18-56% of days by the 2060s, and 19-79% of days by the 2090s with the greatest increases occurring during the dry seasons⁴⁰. Consecutively occurring hot days can result in a heatwave. According to the IPCC's Fifth Assessment Report, warm days and nights will increase as well as increased occurrences of temperature extremes in the South American Region⁴¹.

Days and nights considered cold in the current climate are projected to decrease and become exceedingly rare, occurring on maximum of 4% of days in the year, and potentially not at all, by the 2090s⁴².

Projections for Precipitation Extremes

According to the projections conducted in 2010 using the SRES Scenarios, the proportion of total precipitation that falls in heavy events does not show a consistent direction of change as both positive and negative projections of change are generated indicating a future that includes risks of both flooding and drought. However, the trend tends toward positive change, particularly in the southern parts of the country. Further, maximum one-day and five-day rainfall does not show significant consistent change but also tends towards positive changes in the secondary wet and dry seasons particularly in the southern parts of the country⁴³. In the IPCC Fifth Assessment Report, both extremes of precipitation intensity are expected and drought conditions are associated with El Niño years⁴⁴.

³⁹ Intergovernmental Panel on Climate Change. 2014. AR5 Climate Change 2014: Impacts, Adaptation and Vulnerability, Chapter 27.

⁴⁰ McSweeney,C; New, M; Lizcano, G, 2010.

⁴¹ Intergovernmental Panel on Climate Change. 2014.

⁴² McSweeney,C; New, M; Lizcano, G, 2010.

⁴³ McSweeney,C; New, M; Lizcano, G, 2010.

⁴⁴ Intergovernmental Panel on Climate Change. 2014

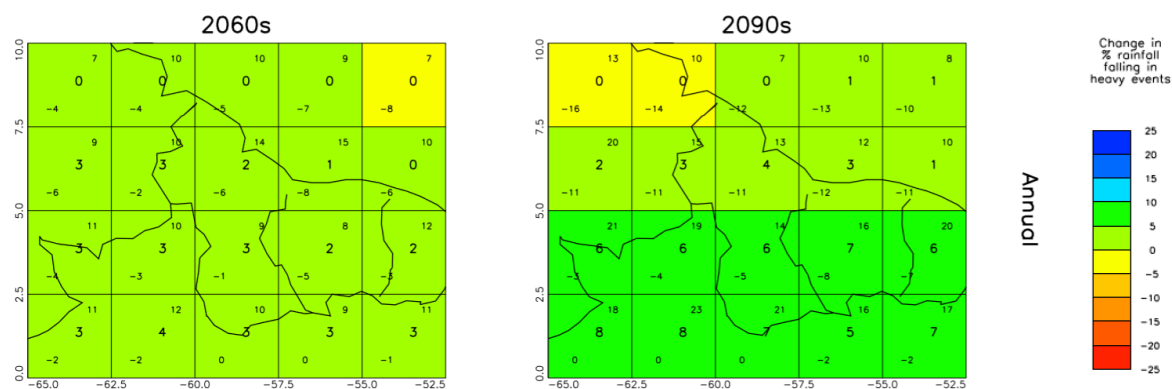


Figure 6-2: Projections for Changes in Average Annual Precipitation⁴⁵

More frequent and/or intense heavy precipitation events are expected to occur over most mid-latitude land masses and over wet tropical regions (IPCC, 2013). In addition, according to the IPCC's Special Report on Global Warming of 1.5°C, at a global scale, trends in intensity and frequency of some climate and weather extremes have been detected over the time spans during which about 0.5°C of global warming occurred. In particular, risks from heavy precipitation events are projected to be higher at 2°C than at 1.5°C of global warming⁴⁶. It should be noted that the Special Report did not include risks associated by global warming greater than 2°C.

According to Lenderink and Meijgaard (2008), the Clausius–Clapeyron relation is a good predictor for changes in daily precipitation extremes in General Circulation Model as higher temperatures are expected to increase the amount of water vapour stored in the air. The Clausius-Clapeyron relation gives an approximate 7% increase in daily precipitation extremes per 1°C of global warming. In their analysis of a 99-year record of hourly precipitation observations from De Bilt, the Netherlands, one-hour precipitation extremes increase twice as rapidly as expected from the Clausius-Clapeyron relation (that is by 14%) when daily mean temperatures are higher than 12°C. This enhanced effect of the Clausius-Clapeyron on precipitation extremes when temperatures exceeded 12°C was also found in four observation records from Western Europe (Lenderink and Meijgaard, 2010) and Hong Kong (Lenderink et al., 2011). In the Hong Kong study, there was no connection between variations on humidity and precipitation intensity for the wet season which lasts from May to September. Outside of this wet season, there are positive trends between changes in humidity and hourly precipitation extremes that approximates to twice the Clausius-Clapeyron relation. However, in the Hong Study, the enhanced Clausius-Clapeyron relation was not observed in dew-point temperatures that exceeded 23 °C.

Data is not available for Guyana on the relationship between increased temperatures and heavy precipitation events. However, based on the foregoing discussion, conservative estimates of increased heavy precipitation events may be considered to follow the Clausius-Clapeyron relation. There may be an enhanced Clausius-Clapeyron relation during the dry season, consistent with trends expected under the 2010 projections. Table24-6 below shows expected increases in precipitation intensity based on projected maximum temperatures by the 2030s, 2040s and 2060s following the Clausius-Clapeyron relation.

⁴⁵ McSweeney,C; New, M; Lizcano, G, 2010.

⁴⁶ Intergovernmental Panel on Climate Change, 2018. Summary for Policy Makers of the Special Report on 1.5°C of Global Warming.

Table 6-6: Projected Percent Increase in Precipitation Intensity

	2030s	2040s – 2060s	2070s – 2100
Projected Maximum Temperature Increases	2.0°C	3.8°C	6.0°C
Increase in Precipitation Intensity	14%	27%	42%

As a consequence, it is recommended that the designs consider a precautionary increase of 30 percent for intensity of heavy precipitation events when developing design return options up to mid-century. Further, it is recommended that end-century design options consider return periods of 40 to 45 percent. These recommendations provide a conservative approach, and it will be more representative to use values obtained from the latest CMIP5 model outputs specific to the project areas when carrying out design.

Sea Level Rise

Guyana is at risk from sea level rise and coastal flooding. Rates of sea level rise in Guyana exceed 10 mm per year, while the global average is 2 to 4 mm per year. Subsidence due to groundwater extraction, soil compaction, and the wetlands drainage exacerbates sea level rise. Sea level rise poses a threat not only to the built environment and urban centers located along the coast, but also to agriculture and the natural environment such as mangrove ecosystems. Rising sea levels also threaten freshwater resources; saltwater intrusion was already observed in the two main aquifers providing water to coastal residents⁴⁷.

Overall Climate Change Impacts

Observed and projected climate change in Guyana increases the vulnerability of Guyana's infrastructure including health facilities. Projections of future climate change include increasing annual average temperatures, increasing frequency of hot days and nights, decreasing average annual precipitation, and increasing precipitation extremes particularly heavy precipitation events. There are several uncertainties associated with these projections, but trends are consistent with the direction of climate change observed regionally. These hazards are expected to increase flood risk and exacerbate current flood vulnerabilities in the project sites, especially the two project sites located at Georgetown and New Amsterdam, which are on the coastal areas.

The adverse and potentially catastrophic impacts of climate change are already being experienced in Guyana. Since the 1960s, the country has observed marked increases in temperature, sea level, and the frequency and intensity of extreme rainfall events. The impacts on Guyanese people, the economy and the environment during flooding and droughts are examples of the devastation climate change may cause. The GoG has responded by developing a Climate Resilience and Adaptation Strategy to set out a comprehensive and overarching framework for adapting and building resilience to climate change impacts. Key areas targeted for intervention are outlined in the LCDS 2030 and include:

1. Sea defence enhancement and maintenance;
2. Strengthening of drainage and irrigation systems;
3. Building climate resilient agricultural systems; and
4. Public health adaptation to climate change.

As it relates to public health adaptation the LCDS 2030 will support:

- Improving public health adaptation infrastructure

⁴⁷ US AID. 2021. Guyana Resilience Profile

- Improving planning and response capability of the health sector to climate-related impacts
- Developing and implementing programmes to tackle climate-related illnesses

This is expected to deliver on the following outcomes:

- The disaster risk preparedness and management capacity of the health sector is improved.
- The health sector in Guyana is better equipped to recover from weather-related extreme events, particularly flooding.
- Communities have better access to clean water and sanitation facilities and improved food hygiene.
- The incidence of water and vector-borne diseases, such as malaria, dengue and chikungunya, is reduced.
- Critical health infrastructures are resilient to a variable and changing climate.
- Health practitioners in Guyana are trained and prepared to respond to extreme events and climate change.
- The general public is sensitised about the risks of climate-related health impacts, including at the community level.

6.6.2 Flooding

Flooding is the main disaster faced by Guyana and is a significant hazard along the coastal zone of Guyana, particularly since the majority of the population (around 90%), much of the country's infrastructure and major parts of its economy, such as agriculture, are located in this narrow coastal strip. Flood hazard along the coastal zone arises from a number of sources:

- High intensity rainfall combined with insufficient surface drainage capacity and restricted outfall capacity, which is often tide-locked, leading to pluvial flooding
- Low lying coastal land, often below high tide level and protected with sea defences liable to flooding from overtopping of seawalls and breaches in sea defences, and to a lesser extent from wave overtopping. Coastal flood hazard is increasing as a consequence of sea level rise
- Flooding from rivers and creeks in the hinterland behind the coastal strip is controlled by conservancies, such as the East Demerara Water Conservancy protecting Region 4 and Georgetown. These are large, shallow-depth flood storage reservoirs (which also have water supply and irrigation functions). However there remains the risk that the conservancy embankments are overtopped or breached in extreme events
- River flooding to communities along some of the major rivers (Pomeroon, Essequibo, Demerara, Mahaica, Berbice, etc.).

Flooding is also a hazard in the flat savannah areas of the interior around the Rupununi, where the lack of relief means that water only drains back into watercourses slowly and can remain on land for weeks.

Two of the project sites are located within the coastal zone, while the other site is located in the hilly sand and clay zone where the flood hazard is much less.

Heavy precipitation experienced throughout Guyana during the period May to July 2021 resulted in widespread and significant flooding throughout the country. This heavy rainfall event occurred via an increase in the number of consecutive wet days (days with more than 10 millimeters of rainfall) and 7-day extreme wet spells. According to Guyana's CDC, the total rainfall in May 2021 was the second highest rainfall total for May since 1981.⁴⁸ The flooding impacted large parts of the population. Over 74,000 acres (43,473 acres of cash crops and 30,684 acres of rice) of farmlands and over 20,000

⁴⁸ Trinidad and Tobago Weather Center. 2021. Guyana's Billion-Dollar National Disaster. The May-June 2021 Floods. Article on June 13.

farmers were affected. The 2021 flood is likely to be comparable to the 2005 flood which affected close to 37% of the population and caused economic damage equivalent to 60% of GDP. Some areas experienced 120-150 centimetres of standing water, which remained for several days. A socio-economic assessment of the damage and loss caused by the 2005 flood revealed major impacts to the agriculture sector, particularly in the regions of West Demerara/Essequibo Islands, Demerara/Mahaica and Mahaica/West Berbice. Region Four was most severely affected in the 2005 flood (though less affected in the 2021 flood), experiencing close to 55% of the total damage, followed by Regions Two (23%) and Five (19%).⁴⁹

According to the stakeholders engaged, none of the targeted hospital sites experienced significant flooding during these extreme rainfall events but conditions on-site were slushy and slippery and there was water accumulation within some sections of the GPHC compound for short periods due to blockage in the surrounding community drainage system. However, the risk of flooding in Guyana remains high due to current trends of extreme weather events and significant precipitation levels in short periods of time.

The control of water along the Coastal Plain, where two of the sites (NARH and GPHC) are located is critical for both agriculture and residential activities. Coastal lands need to be protected from flooding by the sea during high tides, as well as flooding caused by water streaming down from the inland areas during the heavy rainy seasons. At the same time a supply of freshwater is required for agricultural lands. In an effort to maintain these characteristics a system known as empoldering was introduced by the early Dutch Colonist, during the 17th Century as a means for utilizing the rich and fertile coastal soils for agriculture, particularly the sugar cane industry. This system of drainage comprises several constructed polders. These polders played a major role in the land reclamation process, settlement pattern and Guyana's agriculture patterns and practices. This system has since provided the foundation for the existing drainage and irrigation infrastructure and facilities along the project area and throughout Guyana's inhabited coastal areas. Drainage and irrigation along the project areas are therefore consistent and exhibit an integrated system of man-made structures and natural occurrences, through the development of polders, hence the empoldering process. Masonry walls called 'seawalls' are built facing the sea, so as to protect the land from flooding during high tides and raised water levels. At the rear end is a long facade dam called the 'backdam' which holds back freshwater coming down to the coast from inland areas during the rainy seasons.

A series of parallel drainage and irrigation canals are used to link the 'backdams' with either the seawalls to the north, or the Demerara River to the east. These canals are generally perpendicular to the conservancy dam. Sluice gates called 'kokers' are used to regulate the flow of floodwaters, from the polder out to the Atlantic Ocean or the Demerara River, as well as controlling the supply of fresh water from the conservancy behind the 'backdams' into the polder for irrigation purposes. During flood conditions when there is need to discharge water during the high tides, pumps are utilized. There is an elaborate drainage system which characterizes the Coastal Plain, a series of small, interconnected community drains can be found along the project sites. These drains are also significant since they are used mainly to drain household and rainfall waters from residential and commercial properties within the various communities to the main drainage canals.

A similar system exists in Region 6, where the NARH is located while for Georgetown, where GPHC is located, there is a grid system of connected canals which drain to the seawalls to the north, or the Demerara River to the west. Linden Hospital Complex is located within the Hilly Sand and Clay natural region and is not as susceptible to flooding. The soils are well drained, and the topography allows for natural drainage into the nearby river system.

⁴⁹ GoG. 2021. LCDS 2030 – Draft for Consultation

The Guyana Lands and Surveys Commission (GL&SC) has produced a national-scale vulnerability map (Figure 6-3), which shows that flood vulnerability is focused in the coastal area and the savannah areas in the interior near Lethem and the border with Brazil. The hospital locations at Linden, New Amsterdam and Georgetown are shown on the map (Figure 6-3) which indicates locations that are subject to occasional flash floods and periodic flooding during the wet season.

The IDB commissioned a Disaster Risk and Climate Change Vulnerability Assessment in 2019. The key findings of this assessment indicate that most stakeholders consider flooding as the highest priority hazards and the expected annual damage from flooding is around GYD 1.3 billion (USD 6 million) across the wider Georgetown area with a further GYD 0.625 billion (USD 3 million) of disruption and repair to critical infrastructure; this equates to approximately 1% of economic activity. The expected annual (average) number of people exposed to flooding exceeding 0.5m is around 10,200. Forty-six critical infrastructure sites (including hospitals, bus station, health clinics, fire stations, hospital, military barracks, police station, school and both airports) experience flooding during major storms (exceeding a 1in100 year return period). Assuming a business as usual adaptation approach, the expected annual damage from flooding is projected to reach between USD 10-12 million by 2040s in response to climate change and projected urban growth. The expected annual number of people exposed to flooding is also likely to increase significantly.

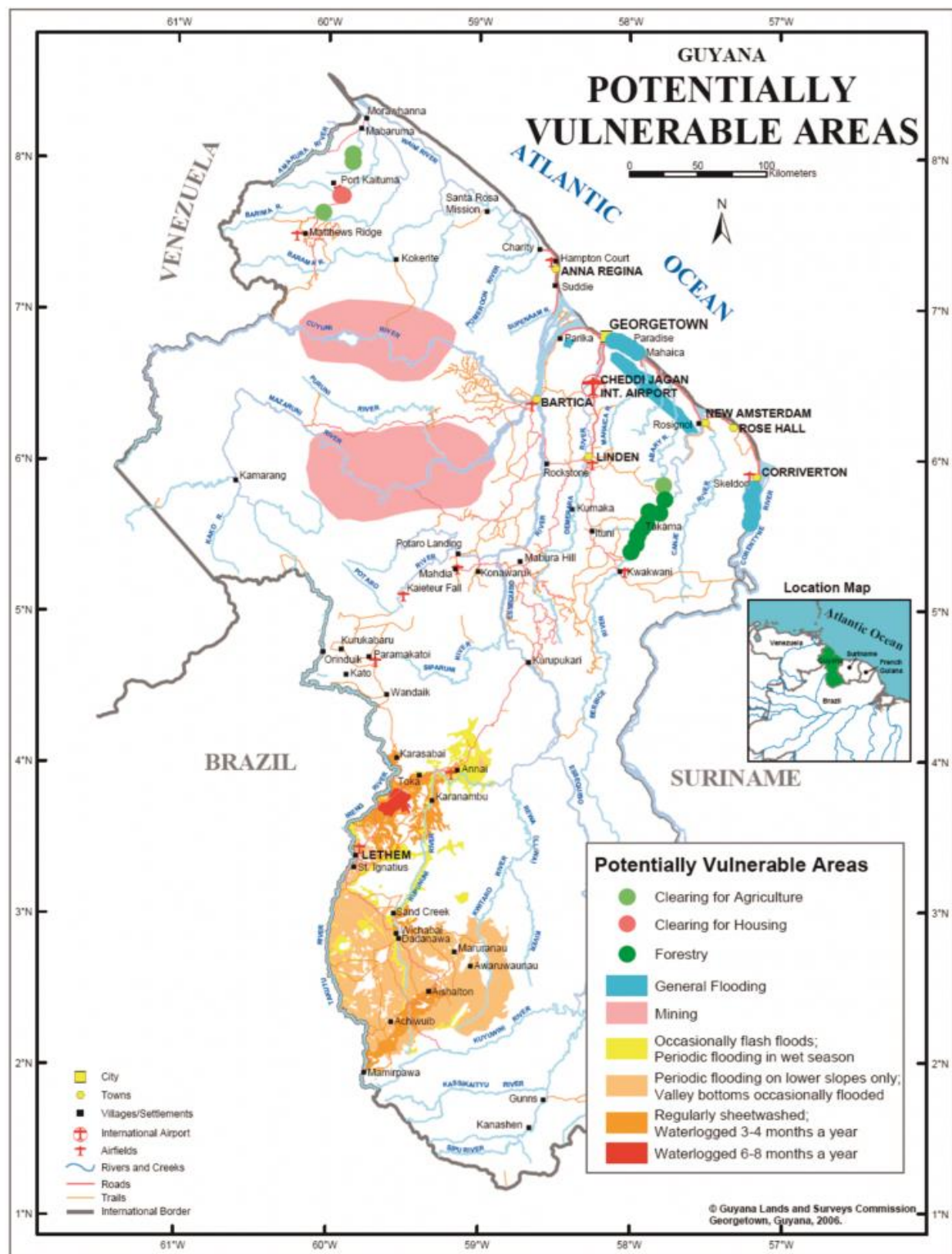
The assessment further indicates that clear and decisive action now could dramatically reduce economic damages from flooding and improve Georgetown's resilience. This will be most effective if it includes:

- spatial planning and building regulation that embrace flood risk management related issues
- realign the coast and maintain green space where possible to make space for a natural response to sea level rise and surface water by adopting a 'living with water' approach.
- selectively implement hard measures to hold the line by constructing and rehabilitation of hard sea and flood defences such as sea walls and embankments where necessary.
- promote a 'naturally resilient coastline' with soft measures (ecosystem-based adaptation) to restore and expand mangroves and sediment management.
- strategic management of land drainage, through improved channel management and
- rehabilitation/replacement of control structure and pumps.

Since the major floods of 2005, significant investment has been targeted towards improving sea and river defences as well as upgrading the extensive network of canals and drainage infrastructure; but a significant adaptation deficit persists.

With support from the IDB the GoG prepared a National Integrated Disaster Risk Management Plan and Implementation Strategy for Guyana. The GoG has realized that without further action, flood events will continue to undermine economic development and as sea levels rise and rainfall patterns change, risks are likely to increase. The measures set out for adapting and building resilience to climate change impacts will also contribute to the prevention and reducing of impacts to flooding.

In this regard, the risks of flooding to the project, and to the three hospitals, can be considered as medium/moderate, considering the country's weather and climate scenario, current trends and experiences, and localized circumstances which influence risks (such as location, elevation, proximity to large water bodies, existing infrastructure, drainage, water management systems etc.). This is consistent with the IDB's disaster risk rating of (Type 1 and 2).



Source: GL&SC 2013

Figure 6-3: Potentially Vulnerable Areas – National Scale

6.6.3 Drought

Guyana is also at risk from drought, which is heavily influenced by the El-Niño Southern Oscillation. Droughts are expected to see an increase in consecutive dry days due to climate change contributing to the increases in temperature and reduction in rainfall. Recent droughts in 1998, 2009 to 2010 and 2014 to 2015 resulted in water rationing and extensive crop and livestock losses. Climate change will threaten agriculture production through increased competition for water resources, loss of agricultural lands due to flooding, heat stress, and increased incidence of pests and disease

There are concerns that the country as a whole, and the agricultural sector in particular, will suffer. Following an extended period of dry weather in late 2014 and early 2015, the hinterland was facing drought conditions by April 2015. Region Nine (Upper Takutu-Upper Essequibo) and parts of Region One (Barima-Waini) were particularly affected, resulting in reduction in the agricultural output in the Regions, reduction in available water supply and increased dust pollution, among other issues. The lack of rainfall caused decreased water levels in the wells, lakes, ponds, rivers, creeks and other water sources. Frequent bush fires, destroyed several farms at Aranaputa. Local communities experienced limited access to potable water for domestic and agriculture use. Residents were forced to go to local rivers, including the Rupununi River, for untreated water for domestic use. There were reports of an increase in the number of people suffering from vomiting and diarrhoea. The drought conditions were also linked to a resurgence of pests, including acushi ants and caterpillars, which attacked the few remaining crops. Dasheen, cassava, eddo and other cash crops were particularly severely impacted by the drought. With increases in the number of dry spells, drought conditions and changing rainfall patterns, stress on Guyana's internal water resources, aquifers and rivers is increasing⁵⁰.

However, none of the three project sites are located in areas which were affected by droughts. As a result, drought is not anticipated to have an impact on the project.

6.6.4 Seismic Activities

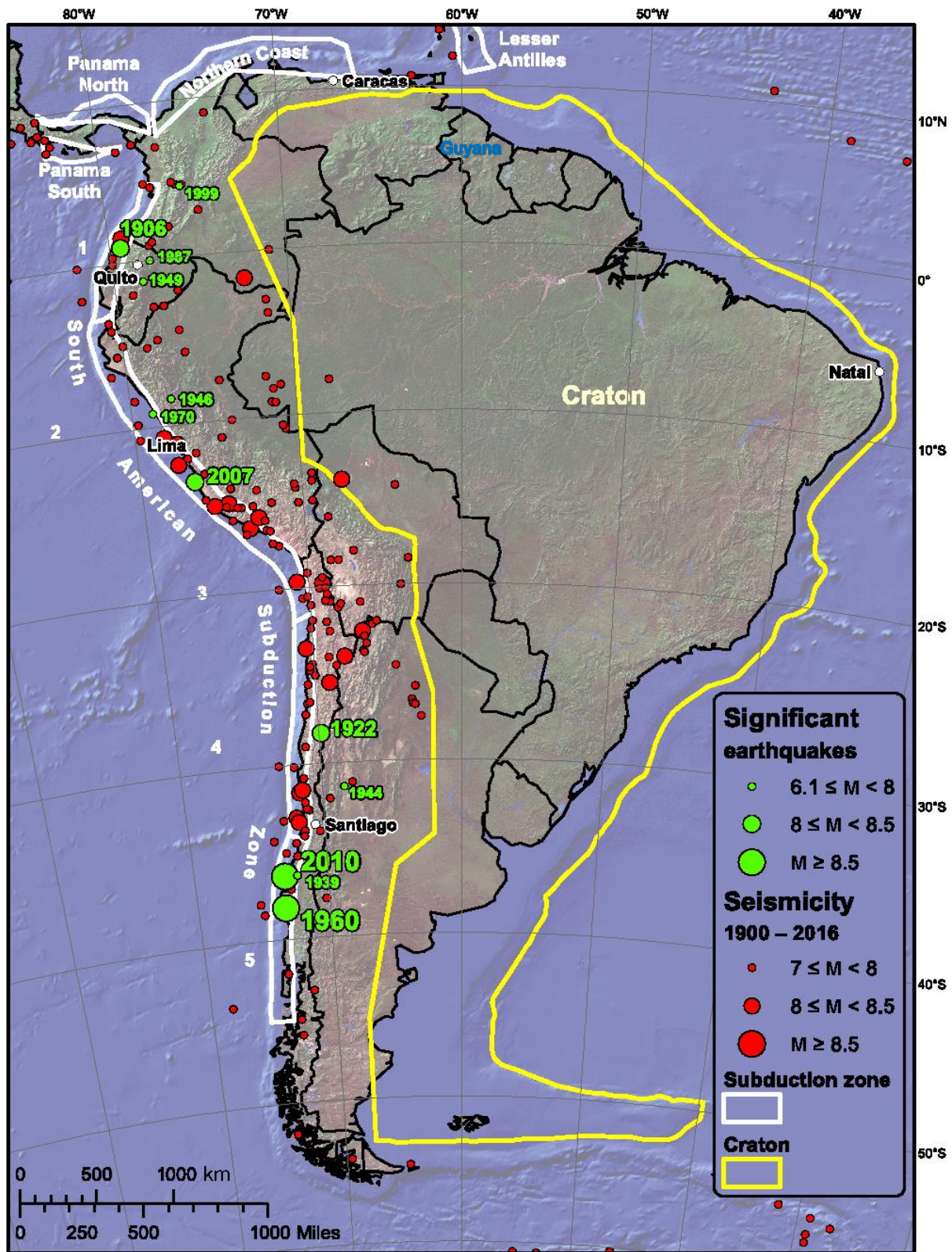
The entire Guyana is low in seismicity primarily because of the lack of active tectonism. There are no significant geological anomalies of note. Any volcanic activity which occurred in the Guyana Basin most certainly occurred during the rifting period only. No evidence of volcanism after the Jurassic is recorded.

Figure 6-4 summarizes the seismic history of South America and the extent of the hazard presented by these activities. The largest and highest concentration of seismic events is in the western margin of South America where the Nazca Plate plunges beneath the South American Plate. Because of the lack of an active tectonism, i.e. volcanism, subduction or hotspots, the entire eastern coastline of South America is very quiet seismically. There are no recorded events in or around Guyana with the closest events being shallow to medium deep magnitude 5-6 earthquakes on the northwestern edge of Venezuela. The risk from a seismic event in the near future either onshore or offshore is minimal. This is illustrated from the historical data by the United States Geological Survey (USGS) on seismicity. Tremors have been felt in Guyana but these originate in areas quite remote. Modelling by the USGS has shown that Guyana will not be affected by a moderate or greater damaging earthquake shaking in 100 years⁵¹.

Based on these considerations, the risk to Guyana from seismic activities and associated volcanoes is minimal. As such, the hospitals are not expected to be impacted from seismic activities.

⁵⁰ GoG. 2021. LCDS 2030 – Draft for Consultation

⁵¹ USGS. 2018. Report on Seismic Hazard, Risk and Design for South America

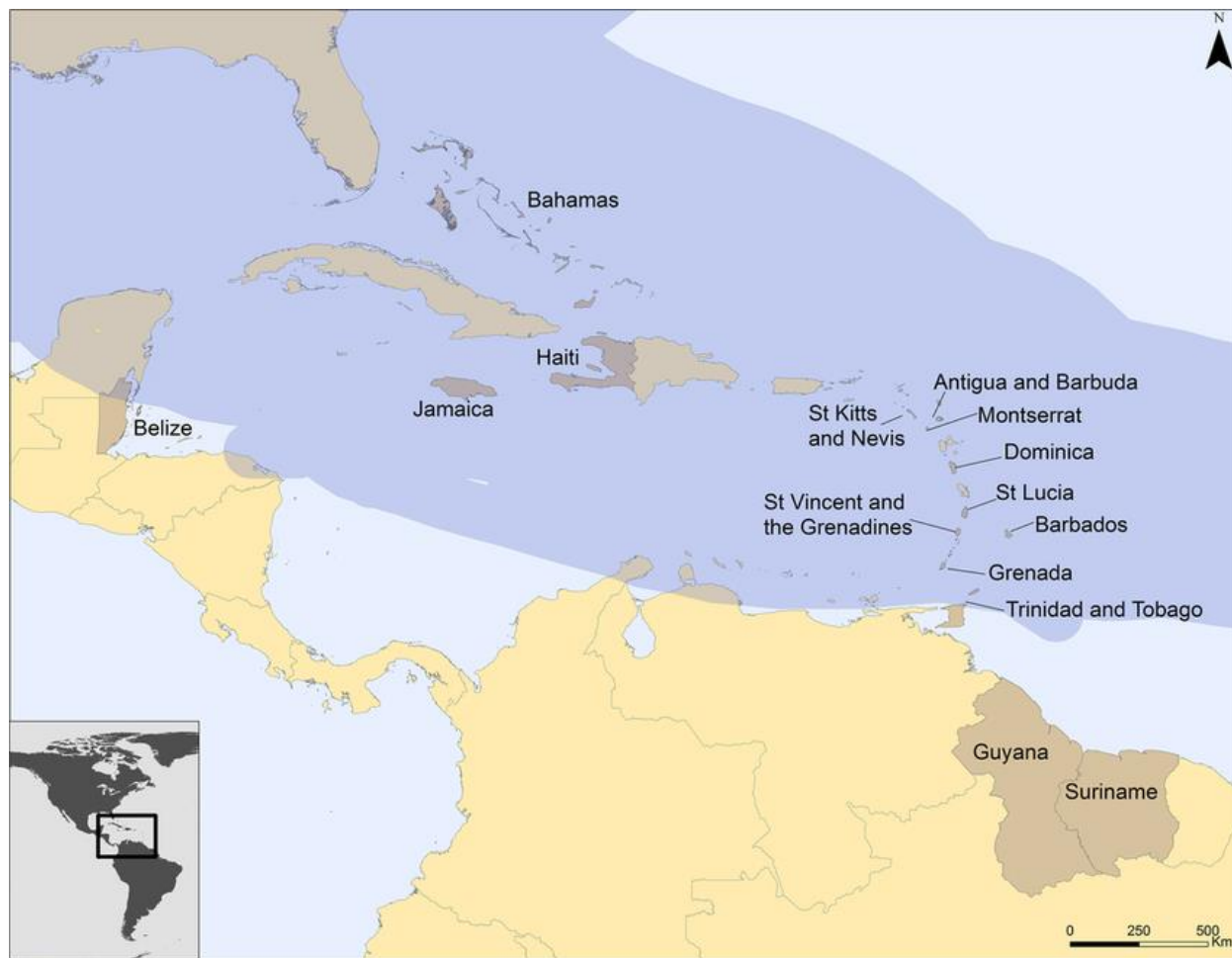


Source: USGUS 2018

Figure 6-4: Guyana's Location in relation to Seismic Active Areas within the Region

6.6.5 Hurricanes

Given the country's location on the South American continent Guyana sits outside of the Caribbean Hurricane Belt. As such, the country is not directly affected by the impacts of hurricanes as is experienced by the Caribbean islands. Guyana's location in relation to the hurricane belt is shown in Figure 6-5. Guyana lies south of the path of Caribbean hurricanes and none is known to have hit the country. Guyana's risk from hurricanes is very low. However, it is sometimes affected by tropical waves moving through the Atlantic Ocean and heavy rainfall during the hurricane season.



Source: Scientific Reports 2015⁵²

Figure 6-5: Caribbean Hurricane Belt

⁵² Sourced from Article Determinants of the lethality of climate-related disasters in the Caribbean Community (CARICOM): a cross-country analysis by Aisha N. Andrewin¹, Jose M. Rodriguez-Llanes² & Debarati Guha-Sapir contained in Scientific Reports

Table 6-7: Impact Summary Table

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Environmental Resources					
Soils					
Project construction activities	Soil disturbing activities and erosion	Negative, Direct, Short-Term, Localised	Negligible	Almost Certain	Low
Project construction activities	Soil contamination from improper disposal of general solid wastes and hazardous wastes	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low
Project construction activities	Minimal compaction from material stockpiles and heavy vehicles	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium
Water Resources					
Project construction activities	Sedimentation of surface bodies	Negative, Direct, Short-Term, Localised	Negligible	Unlikely	Low
Project construction	Contamination of surface and ground water bodies	Negative, Direct, Short- to Long-Term, Localised	Minor	Likely	Medium
Project operations	Contamination of surface and ground water bodies	Negative, Direct, Long-Term, Localised	Moderate	Rare	Low
Ambient Noise Level					
Project construction activities	Noise nuisance to sensitive receptors	Negative, Direct, Short-Term, Localised	Moderate	Likely	Medium
Ambient Air Quality					
Project construction activities	Adverse impacts to ambient air quality affecting sensitive receptors	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium
Greenhouse Gas Emissions					
Project construction activities and project operations	Gases emissions from clearing of sites and combustion of fuel by machinery	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Social Resources					
Employment					
Project construction activities	Temporary employment for persons from local communities	Positive, Direct, Short-Term, Localised	Minor	Almost Certain	N/A
Improved Facilities					
Project operations	Increases in wellbeing and quality of life for staff, patients and visitors	Positive, Direct, Long-Term, Localised	Major	Almost Certain	N/A
Traffic					
Project construction activities and project operation	Traffic congestion during drop off of construction materials; inadequate parking; increased traffic due to higher visitation	Negative, Direct, Long-Term, Local	Moderate	Likely	Medium
Land Take and Disruption					
Project construction activities	Disruption of existing activities and the delivery of health care services as well as disruption to nearby service providers such as vendors, taxis etc.	Negative, Direct, Short to Long-Term, Localised	Major	Likely	High
Archaeological Resources					
Project construction activities	Damage to archaeological resources	Negative, Direct, Long-Term, Regional	Moderate	Unlikely	Low
Women and Vulnerable Groups					
Project construction activities	Disruption of the delivery of health care services as well safety risks from construction.	Negative, Direct, Short -Term, Localised	Major	Likely	High
Health and Safety					
Occupational Health and Safety of Project Workforce					
Project construction activities	Exposure to noise and dust; Accidents at worksites result in injuries or fatalities; Exposure to vectors	Negative, Direct, Short- to Long-Term, Localised	Major	Likely	Medium
Public Health and Safety					

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Project construction activities	Risk of contracting illnesses including transmission of COVID-19 among receptors: project workforce, facilities personnel, patients, etc.	Negative, Direct, Long-Term, Regional	Moderate	Likely	Medium
Health, Safety and Security of Staff, Patients and Visitors					
Project construction activities	Noise and dust nuisance, unsafe conditions around material stockpiles and construction zones, sexual harassment of Staff, Patients and Visitors	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium
Flooding					
Construction and operation phases	Flooding to hospital compound/facilities due to heavy and increasing rainfall and from the Ocean or Demerara River	Negative, Direct, Short to Long-Term, Localised	Minor	Likely	Medium

7.0 ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

The activities to be conducted for the implementation of the project must be carried out in a manner which is in compliance with the legislation and guidelines outlined in Chapter 4, and in accordance with the requirements of the MoH and IDB. Further, measures should be implemented to mitigate the potential impacts of project activities discussed in Chapter 6 and outlined in Table 6-7.

In this regard, this chapter has been prepared to guide the project's activities by setting out measures and strategies to address the environmental and social issues related to the implementation of the project. It recommends activities to be undertaken in an effort to mitigate those impacts which are significant, likely and have medium to high risk. It recommends considerations that should be taken during the design phase, measures to be taken by the MoH prior to construction, and also mitigation measures that should be adopted by the contractors during the construction phase of the project. Measures to be applied after construction by the MoH and the management of the three hospitals are also included.

A framework to ensure that the management and mitigation measures are effectively implemented is outlined in Chapter 8, including the roles and responsibilities of the various parties, plans to be developed by the contractors, monitoring to ensure compliance, etc. It is recommended that the contractors be required to prepare a CESMP using the guidance provided in this ESMP to outline how they intend to manage the impacts identified and implement the mitigation measures recommended.

Based on the IDB's environmental and social screening of the project, and given that key project details were not yet determined, it was recommended that the ESA and ESMP framework be prepared at this stage, environmental and social audits be carried out prior to the start of any civil works for the facilities in operation and site-specific ESAs/ESMPs be prepared for each sub-project. However, during the course of the conduct of the ESA and preparation of the ESMP, key project details emerged, including the hospitals to be targeted under the project, and some of the likely interventions at each of these facilities based on their current priority needs. These were considered during the conduct of the ESA and the preparation of this ESMP, with management and mitigation measures outlined to address the likely potential impacts. In this regard, there may not be the need for the preparation of separate ESA and ESMP for each sub-project.

Mitigation measures identified to prevent, minimize and manage the potential adverse impacts discussed in Chapter 6 are outlined.

7.1 Design Phase Considerations

The following are recommendations which should be taken into consideration on the project design, including in the designs for the various interventions at the three hospitals. Recommendations provided by the stakeholders during the stakeholder engagement process are also included.

- The design of the hospitals should incorporate the recommendations outlined in the Guyana National Building Codes.
- The ground floor of the buildings to be constructed should be above ground level to minimize any risk of flooding and overall there should be improvement in drainage designs based on a drainage analysis to be conducted.
- Designing of the facilities should take into consideration the maintenance required as there should be regular maintenance of electrical systems, air-conditioning, oxygen supply system, vacuum system, sewage and wastewater system, plumbing, drainage, and potable water supply and water treatment systems as well as improvements to the management and

treatment of medical waste. An assessment of the capacity and effectiveness of the liquid waste management system, including sewage, should be done for each hospital to determine if additional measures should be implemented to support the additional waste to be generated from the expansion of the hospitals.

- Design of the facilities should take into consideration provisions for water harvesting, universal access, landscaping features which could offset flood risk, drainage improvements, and energy saving infrastructure features.
- To the extent feasible, natural ventilation should be considered. However, these should be well designed and installed, since it was indicated by the management of the GPHC that the natural ventilation system installed in one of the inpatient building with support from the IDB is not functional due to poor design, and has occupied valuable space within the building.
- The use of renewable energy source should be considered, especially solar energy. This will supplement the existing energy sources at the hospital and reduce the dependency on fossil fuel generated electricity. If this is to be supported under the project, the Bank's guidelines regarding sourcing of solar energy equipment would need to be adhered to.
- Consideration should be given to generally improved parking design to accommodate increased staff, patient and visitor loads.
- The designs of the specific interventions for each hospital should be shared with the management of the respective hospital for their review and input before finalization.
- To prevent or minimise disruption of services during the construction period careful planning is required involving the MoH, the hospital management and the contractors. The new buildings should be constructed first, then existing services be relocated to those buildings, and once this is done work could commence within the existing space.

7.2 Physical Environment

7.2.1 Erosion, Sedimentation, Compaction and Drainage

During project implementation there will be some activities which may affect the soil, as was discussed in Chapter 6. These activities can contribute to soil erosion, compaction and sedimentation and which can be prevented or minimized. The following measures should be implemented to reduce these impacts:

Erosion

- Soil disturbance should be limited to areas only where it is absolutely necessary;
- Adequate drainage should be provided at temporary work areas to prevent pooling of water and vector breeding;
- Areas of exposed soil should be monitored during periods of heavy rainfall and proper control of stormwater flow over exposed soil surfaces should be practiced;
- Weather patterns should be considered before initiating major earthworks. Earthworks should be avoided during periods of heavy rainfall;
- Material stockpiles and waste debris should be located at least 10 meters away from the drainage system;
- Material stockpiles should be kept to a minimum. Stockpiles may require berming to collect sediments from runoff during periods of heavy rainfall. Wooden or other material may be used to contain stockpiled material to prevent erosion;

- Excavated materials should be reused, where possible. In general, excavated materials should not remain onsite for more than two weeks and be disposed of at sites approved by the local authorities; and
- Natural revegetation of any cleared areas should be encouraged to the extent possible.

Compaction

- Traffic and movement of heavy-duty equipment over open areas should be restricted and controlled, and damage to these areas should be repaired as soon as possible;
- Soils that have been compacted by heavy-duty equipment during transport of materials and also during site works should be scarified;
- Appropriate heavy-duty equipment should be utilised for all works; and
- Designated routes for heavy-duty vehicles should be established and used to limit soil compaction.

Sedimentation

- Cleared soils, where possible, should be distributed around the premises or provided;
- Stockpiles may require berming to collect sediments from runoff during periods of heavy rainfall; and
- Weather patterns should be considered during construction as heavy rainfall would increase sedimentation rates in areas where vegetation has been cleared.

Drainage

- As part of drainage management and to minimize any risk of flooding during construction, an assessment of the drainage system is to be done and provisions made for construction to ensure that there is no additional pressure on the drainage system and to reduce risk of flooding.

7.2.2 Air Quality

During the implementation of the project, dust, and gaseous emissions can affect activities and the hospitals, surrounding land uses and project workers. The latter could also face risks from exposure to molds and hazardous materials such as asbestos. The following measures should be implemented to reduce the impacts of dust:

- Conduct an environmental and social audit for each facility to identify potential air quality and exposure issues and identify mitigation actions for inclusion in the CESMP.
- Inform the hospitals' management in advance of any construction activity that will result in significant dust generation and likely to affect the delivery of services;
- Erect dust screens around work areas if required;
- Use dust screens or nets on windows, doorways and ventilators of rooms where demolition or other dusty construction activities are occurring;
- Where dust generation cannot be avoided, services in the vicinity of the work areas, should be relocated and the area handed over to the contractors. This would require removal of patients, personnel, and equipment;
- Visual monitoring of dust generation/accumulation should be done;
- Workers should be equipped with the necessary personal protective equipment (PPE) to combat dust nuisance as well as exposure to molds etc. Personnel working within dusty and risky environments should be required to use dust masks and respirators. During dry periods it may be necessary to soak some areas of the construction zone and routes where vehicles and equipment traverse;

- Dry materials for construction such as sand should not be stockpiled in close proximity to receptors such as clinics, wards, offices and neighbouring properties;
- All vehicles transporting loose materials should be covered to minimize dust emissions;
- There should be no burning of construction waste; and
- All mechanical equipment should be adequately maintained to reduce gaseous emissions.

7.2.3 Noise

Noise can be a significant impact if works are within a hospital setting. The limit prescribed in the GNBS Standard for construction projects are 90dB during the day and 75dB during the night. Compliance with these limits is necessary to ensure the impacts on the environment and human health, particularly for workers, are reduced. However, these levels may still be high for the hospital environment. Therefore, the following measures should be implemented to reduce the impacts of noise:

- Inform the hospitals' management in advance of any construction activity that will result in significant noise and likely to affect the delivery of services;
- Workers should be equipped with the necessary PPE to mitigate noise pollution. Hearing protection for employees exposed to high noise levels: ear muffs and earplugs for employees who operate heavy-duty machines/equipment;
- Schedule construction activities to periods when impacts will be less
- Noisy activities should not occur in close proximity to proximate receptors during the night, on Sundays and on Holidays. It is not recommended to conduct any works after 18:00hrs and prior to 06:00hrs;
- Noise levels should be controlled at the source through installation of muffles on exhaust system;
- Noisy equipment such as generator should be sited away from receptors;
- The contractors should ensure that machinery and equipment are working efficiently; and
- Periodic monitoring of noise levels should be conducted.
- For the operational phase, consideration should be given to measures to attenuate noise from back-up generators, including procuring low decibel generating sets, siting generators away from receptors and housing same in an enclosure with noise attenuation installed (baffle walls and insulation).

7.2.4 Waste Management

Construction Phase

During the constructions phase waste likely to be generated from this project includes domestic garbage and construction waste. Liquid waste will also be generated including sewage waste and waste water from sanitary facilities and work camp if these are utilized. Hazardous waste which may be generated includes waste oil, filters, and oil and chemical containers. If not managed properly, waste can result in soil and water contamination, contribute to ill health, and affect environmental aesthetics. However, it is not anticipated that significant amount of hazardous waste will be generated during the construction phase. Nevertheless, there is the risk of construction workers coming into contact with biomedical waste generated at the hospitals.

The improper disposal of waste can result in mal-odours and attract vermin and other pests. Proper waste management is important especially since project activities are mainly within the hospital environment. For each category of waste, the handling, storage and disposal measures will vary. The disposal frequency of each waste type will also vary, depending on rates of generation. It is recommended that no significant amount of waste be allowed to accumulate onsite. Outlined below are various measures that should be implemented to properly collect and dispose of waste associated with the project. In addition to being addressed in the site specific ESAs/ESMPs, the contractors

should include a plan to manage waste in the CESMP and take into consideration the guidance provided below:

Liquid Waste

- Sewage will be generated from work sites associated with the construction phase of the project. It is recommended that portable toilets be utilized by the contractors.
- Construction workers should ensure the use of PPEs at all times to avoid coming into contact with raw sewage in the event of overflows, spills and leaks.

Solid Waste

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the construction zone and work areas. The bins should be emptied on a regular basis, or once filled. Garbage should not be allowed to accumulate onsite and should be collected and disposed of at an approved disposal site;
- Construction waste should not be placed in the hospital waste collection receptacles;
- All construction waste should be consolidated and reused as much as possible. If it cannot be reused then it should be properly disposed of.
- Waste should not be left in the open to litter the work areas and should be disposed of within one week;
- All workers should be made aware of the proper waste handling and disposal requirements and practices. This ensures that all are aware of how to dispose of the different types of wastes generated, therefore minimizing the impacts that may occur from improper disposal;
- No burning of any type of waste should occur.

Hazardous Waste

- Waste oil from servicing of machinery and vehicles should be collected and reused/disposed in a safe and acceptable manner. Waste oil drained from machinery should be collected by pans and transferred to storage containers;
- Empty hazardous material containers should be disposed of as is recommended by the manufacturer; and
- Hazardous wastes should not be stored at the construction site for extended periods. As such, timely removal is recommended.
- During construction, and with the possibility of disruptions to the operations of the hospitals, there is need for heightened attention by the hospitals administration to the systems for stringent management of bio-medical waste and to ensure such locations are off limits to construction personnel and other unauthorized persons. It should also be ensured that all biomedical waste be removed from areas to be handed over to the contractors prior to the commencement of work.

Operation Phase

During the operation phase solid waste likely to be generated will be limited to domestic garbage. Liquid waste will also be generated including sewage waste and waste water from sanitary facilities. Waste associated with the provision of solar energy such as used lithium-ion batteries, hazardous inverter components, as well as solar PV panels that have been damaged or broken may also be generated. Hospitals should develop and implement ESMPs within which should include a Waste Management Plan. Outlined below are various measures that should be implemented to properly collect and dispose of waste associated with the operational aspect of the hospitals:

Liquid Waste

- Sewage systems, including septic tanks should be well maintained and emptied regularly. Discharge from septic tanks should be channeled to a soak-away system, if not treated by the tanks;
- Grey water from kitchens and showers should be channeled through a grease trap and then a soak-away;
- All biomedical liquid waste should be treated before discharged into the drains or sewage systems.
- Consideration should be given to recycling e.g for landscape irrigation.

Solid Waste

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the compound. The bins should be emptied on a regular basis, or once filled. Garbage should not be allowed to accumulate onsite and should be collected and disposed of at an area and in a manner approved by the local authorities;
- Where there are options available for recycling of waste these should be pursued; and
- No burning of any type of waste should occur.

Biomedical Solid Waste

- Seek to achieve compliance with existing requirements for health facilities management of medical waste as set out in legislation, regulations and guidelines; and
- Ensure health facilities have adequate receptacles (bags, boxes, containers) for storing biomedical waste and sharps.
- Sourcing and installation of appropriately sized hydroclaves for health facilities or establish a coordinated and scheduled arrangement for the uplifting of medical waste from these facilities and transport to a central location for treatment and disposal such as GPHC hydroclave;
- Improve the facilities for the storage of medical waste at health facilities to ensure it is in keeping with the existing laws and guidelines;
- Ensure health facility personnel handling medical waste undergo training and undergo regular orientation; and
- Ensure PPE are readily available and utilized.

Solar Energy Related Waste

- Special provisions should be put in place to facilitate the disposal of used lithium-ion batteries, hazardous inverter components, as well as solar PV panels that have been damaged or broken;
- Any hazardous components stored temporarily on-site should be kept in an enclosed and covered area on an impermeable surface pending off-site disposal;
- The MoH should include considerations in the bidding documents for a supplier who has a proven track record of supporting and facilitating disposal or recycling of these components; and
- The MoH should explore opportunities for contracting a company operating in Guyana to support disposal or recycling of these panels.

7.2.5 Fuel, Lubricants and other Hazardous Materials

During the construction and operational phases of the project, special consideration for the transportation, handling and storage of fuel, lubricants and chemicals must be given as these are classified as hazardous substances. To reduce the risks on the environment and human health, and

to avoid contamination of the environment, preventative actions should be taken and/or mitigation measures implemented. It is necessary to implement the following measures to prevent and or reduce the impacts on the environment, in particular, contamination of soil and water from leaks and spills:

- Fuel storage onsite should be avoided. However, if fuel is kept onsite it should be placed at a safe distance from the drainage system, waterways, work areas, and hospital services and facilities;
- Fuel should be transported to the work areas as needed or in small quantities. Small quantities of fuel onsite will minimize the possibility of spillages to occur and also minimize the impacts if spillages do occur, especially since the construction activities would be temporary and it would not be feasible to construct a facility for the long-term storage of fuel. Any fuel storage at these areas should be placed higher than ground level to easily detect any leaks;
- Fuel storage containers should be covered to protect from the elements;
- Fuel storage containers should be regularly monitored for leaks;
- When handling fuel, care should be taken to prevent spillage and leaks, especially during off-loading and refueling;
- Regular maintenance should be conducted to ensure the proper functioning of machines, equipment and vehicles to avoid unnecessary leaks; and
- Spill kits should be made available in the event of spillages. The kits should be placed in strategic locations that are accessible to key personnel who should be trained in the proper use of these kits through the executions of drills. Spill kits should contain sorbents with high absorbing capacity. The absorbent material should be in the form of booms, pillows and pads and the kits should include a pair of PVC gloves, a disposal bag and operating instructions.

7.3 Socioeconomic Environment

7.3.1 Conflict Prevention

To prevent any conflicts during construction the following should be implemented:

- All potential affected parties should be informed of the details of the project and be engaged in discussions on possible measures to reduce the negative impacts;
- Key stakeholders should be engaged prior to the commencement of construction and periodically during the construction phase.
- The relevant authorities should be notified of any emerging problems and the MoH and hospital administration should work with the local authorities to address any issues; and
- Contractors should avoid use of the hospital resources, utilities and facilities. Contractors should have alternative means of such service and not be utilising the facility's utilities e.g contractors having own generator and water tanks

7.3.2 Disruption of Hospital Services

Disruption of hospital services can occur during construction and may severely impact on the hospitals' ability to provide adequate services. The following measures should be implemented to mitigate the disruption of services:

- Plan pre-construction activities early to identify suitable rooms or adjoining buildings into which to relocate patients or service areas with minimal inconvenience, especially to patients under intensive care;
- The new buildings should be constructed first, then existing services be relocated to those buildings, and once this is done work could commence within the existing space;
- Contractors shall advise facilities management well in advance concerning access closures, rerouting of pedestrian traffic and interruptions in water, electricity and sewerage services; and

- Construction at each hospital should be done in phases so that the entire facility is not disrupted at once.
- The day care facility at the Linden Hospital Complex should be relocated prior to the demolition of the building.

7.3.3 Code of Conduct for Workers

A Code of Conduct for workers should be prepared by the contractors to guide the behaviour of workers onsite during project construction. The Code of Conduct should make the following provisions:

- Compliance with applicable laws, rules, and regulations.
- Compliance with applicable health and safety requirements (including wearing prescribed personal protective equipment, preventing avoidable accidents and a duty to report conditions or practices that pose a safety hazard or threaten the environment).
- The prohibition of the use of illegal substances.
- Sexual harassment (for example to prohibit use of language or behavior, in particular towards women or children, that is inappropriate, harassing, abusive, sexually provocative, demeaning or culturally inappropriate).
- Violence or exploitation (for example the prohibition of the exchange of money, employment, goods, or services for sex, including sexual favors or other forms of humiliating, degrading or exploitative behavior).
- Protection of children (including prohibitions against abuse, defilement, or otherwise unacceptable behavior with children, limiting interactions with children, and ensuring their safety in the project area).
- Sanitation requirements (for example, to ensure workers use specified sanitary facilities provided by the contractor and not open areas).
- Avoidance of conflicts of interest (such that benefits, contracts, or employment, or any sort of preferential treatment or favours, are not provided to any person with whom there is a financial, family, or personal connection).
- Respecting reasonable work instructions (including regarding environmental and social norms).
- Protection and proper use of property (for example, to prohibit theft, carelessness or waste).
- Duty to report violations of the Code.
- Non retaliation against workers who report violations of the Code.
- Respecting the rules, norms, customs and practices of the nearby indigenous community.

7.3.4 Grievances and Stakeholder Engagement

Stakeholder engagement is essential to ensure all stakeholders are aware of the project and to provide feedback and recommendations. As such, measures to ensure stakeholder engagement are outlined in Section 8.6 and should be implemented.

Persons affected by project activities should also be provided with a forum to be heard and have their grievance addressed. A grievance mechanism should be implemented for the project outlining a clear set of opportunities for affected people or any other interested stakeholder to post a claim, request information and have a formal mechanism to communicate. As such, measures to address grievances are outlined in Section 8.7, which would allow for a process for receiving, evaluating, and addressing project-related grievances.

In addition, a separate grievance mechanism should be established to address workers grievances. This should form part of the contractors' ESMP and is addressed in Section 8.3, which addresses contractors' requirements.

7.3.5 Employment and Community Development

Although the project is anticipated to contribute positively to employment and community development, some measures can be implemented to enhance the positive effect of all phases of the project. These measures include:

- The contractors should prioritise employment opportunities for persons residing in project communities;
- The possibilities of employing women should also be explored so as to ensure that there are opportunities for both genders;
- The contractors should support local content through local procurement. This may include purchasing of agricultural products, poultry, other meats, and fish from the surrounding communities. This may also include rentals of required equipment and machinery, if in good working condition and available locally.
- Wages offered to local staff should be in keeping with Guyana's labour laws or higher set standards which should be competitive in all categories of workers; and
- Local workers should work for standard working hours (an eight-hour work day) and be fairly remunerated.

7.3.6 Labour Management Procedures

Guyana is in the process of conducting national labour assessments. Considering the upsurge in construction and based on historical trends, labour for construction is expected to be predominantly unskilled, semi-skilled and skilled personnel, and likely to come from contractors crew who may be from outside of the immediate communities or regions in which the hospitals are located and also could possibly include migrants. As part of the project, the contractors would be encouraged to hire labour from the local communities in the vicinity of the hospitals.

The contractors are required to comply with the national law and best practices in employing the workforce to work on the project related interventions. The following should be complied with:

- The selection and employment of project workers should be conducted in a fair and transparent manner, and according to the requirements of the project. This process should be free of any personal preference and biases, inclusive of persona characteristics, gender, location, or ethnicity. The employment program should instead be based on the principle of equal opportunity and fair treatment, with no discrimination with respect to any aspects of the employment relationship, such as recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, job assignment, promotion, termination of employment or retirement, or disciplinary practices.
- Recruitment procedures should be transparent, public and non-discriminatory, and open with respect to ethnicity, religion, sexuality, disability or gender.
- Applications for employment should only be considered if submitted via the official application procedures established.
- Clear job descriptions should be provided in advance of recruitment and should explain the expertise required for each post.
- Women and other vulnerable groups should be encouraged to apply for jobs.
- All workers should have written contracts describing terms and conditions of work.
- In accordance with the Employment of Young Persons and Children Act 1938 (Amended 1999), no child under the age of fifteen should be employed, and no young person under the age of sixteen should be employed at night.
- According to the Leave with Pay Act, the project and contractors are required to grant and regulate annual leave with pay for all categories of workers. Granting and method of computing holiday with pay, periods of holiday with pay, remuneration for holiday with pay, and payment

of holiday with pay upon termination of employment should be computed in accordance with the formula outlined in the Act.

- Every person employed by the project is expected to contribute to the National Insurance Scheme. As such, salary and wages computation is expected to take this into consideration.
- Each project worker should be responsible to paying their individual income tax in accordance with the laws. As such, salary and wages computation is expected to take this into consideration. The contractors can also deduct the tax due and remit to the Guyana Revenue Authority. Remittances are to be made within fourteen days of the end of every month.
- Termination of services are required to be in compliance with the Termination of Employment and Severance Pay Act of 1997 which stipulates that guidelines governing the governing termination of employment and grant of redundancy or severance payment to employees in conjunction with the offence or cause for the termination.
- Workers health and safety should be protected. Measures outlined in Section 7.4.1 should be implemented.

In addition, in sourcing solar panels and other equipment, the contractor should ensure that these are sourced from suppliers who are compliant with labour procedures. It should be ensured that suppliers have not been reported on cases of forced labour. As such, the bidding documents for the purchase/installation of solar panels should require the contractors to include in the CESMP a labour risk analysis and respective mitigation measures that will be adopted. This should also apply to the procurement of medical and other equipment under the project.

7.3.7 Traffic

The following measures should be implemented to manage the risks associated with project traffic particularly during the construction phase:

- Traffic Management Plans are to be prepared as part of the site specific ESAs/ESMPs and contractors ESMPs and are to be implemented to address potential parking disruptions for visitors, staff, workers as part of construction team etc., which may exacerbate traffic conditions in the surroundings areas.
- Arrangements for ambulance and emergency response access must be put in place prior to the commencement of construction.
- All drivers and operators from the contractors must be licensed in accordance with the Laws of Guyana and have the requisite experience and training.
- Drivers should be instructed to observe and respect all traffic and warning signs along the various roadways and to maintain all required speed limits.
- Appropriate safety signage should be posted leading up to the entrance of the construction sites.
- All light and heavy-duty equipment and vehicles should be properly maintained and in good working condition so as to comply with the national road fitness/safety requirements and manufacturer's safety recommendation.
- Passengers should not be permitted on mobile equipment unless they are being trained to operate the machine or are required to ride on it as an unavoidable part of their duties, provided it is safe to do so.
- Construction materials should not be placed or discharged on the roadways.
- Trucks and other construction related vehicles and machinery should not be parked along the roadway for extended periods.
- Drivers delivering construction materials to the hospitals should respect speed limits and avoid parking and blocking accesses.
- Safe traffic control measures should be implemented, including temporary traffic signs and flag persons to warn road users especially when moving equipment in and out of the facility compound.

7.3.8 Archaeological Finds

The following procedure should be followed during project construction in the event that archaeological materials or site is discovered within the construction sites:

- All activities in the immediate vicinity of the remains should cease immediately.
- The find location should be recorded, and all remains left in place.
- The contractor should inform the MoH who should then inform the National Trust of Guyana of the find.
- The National Trust of Guyana should coordinate with the relevant personnel to determine the significance of the findings and assess appropriate mitigative options.
- If the significance of the remains is judged to be sufficient enough to warrant further actions which cannot be avoided, MoH, in collaboration with the National Trust of Guyana, should determine the appropriate course of such action.
- Relocation of the artefacts for preservation and security reasons may be determined as an appropriate action.
- In the case of human remains, the appropriate authority should be contacted. In addition, a coroner and/or physical anthropologist may be involved if the remains are classified as an artefact. Options for removal and burial should be considered if the location must be disturbed.
- The National Trust of Guyana should inform the MoH of when work may recommence in the specific area.

In addition, to effectively safeguard potential archaeological finds, it should also be ensured that the contractor provides training to employees on identifying and protecting finds by causing limited disruption and damage to archaeological materials, if found.

7.3.9 Women and Vulnerable Groups

Although the project is anticipated to contribute positively to women and vulnerable groups once the project is implemented, the construction phase however can impact negatively on these groups. Below are some measures which should be implemented to prevent or reduce the project impacts on women and vulnerable groups and enhance the positive impacts:

- Plan pre-construction activities early to identify suitable rooms or adjoining buildings into which to relocate patients or services accessed by women or other vulnerable groups;
- The new buildings should be constructed first, then existing services be relocated to those buildings, and once this is done work could commence within the existing space;
- Contractors shall advise facilities management well in advance concerning access closures and rerouting of pedestrian traffic;
- Construction at each hospital should be done in phases so that the entire facility is not disrupted at once;
- The day care facility at the Linden Hospital Complex should be relocated prior to the demolition of the building;
- Clear visuals/signage be used to provide information to the differently abled, especially during the construction phase of the hospitals. Other systems such as lights can be used in cases of emergencies.;
- Provision should be made for the deaf community in registering grievances. Hospitals can have interpreters available during construction to receive and record grievances;
- Employment opportunities for women and vulnerable groups should be prioritized;
- Create welcoming, comfortable spaces and family-friendly environments for in rooms to be utilized for services accessed by women and vulnerable groups. Design rooms and waiting space environments that meet needs in areas such as mother and infant rooms and children's play areas.

- Design accessible spaces (waiting rooms, office, restrooms) and information for people with all types of disabilities (mobility, blind or have low visibility; people who are deaf, hard of hearing, or have a hearing loss; people with speech or language disorders, people with cognitive, developmental, or intellectual disabilities) considering their intersecting identities related to sex/gender, ethnicity, age, location, immigration status, others. Use of materials for floors to reduce the risk of falls for people who use mobility devices or have limited mobility; and
- Integrate components according to standards of inclusiveness and accessibility in line with Article 25 of the UN Convention on the Rights of Persons with Disabilities (CRPD), and gender and diversity global commitments.

7.4 Health and Safety

7.4.1 Workers Health and Safety

The health and safety of workers involved in activities during the construction phase can be compromised. As such, it is necessary to implement measures to prevent these situations from occurring. The contractors should, as part of the CESMP, outline measures to ensure that the health and safety of workers is preserved. The following measures should be implemented to reduce the risk to workers:

- The requirements of the Occupation Safety and Health Act should be complied with;
- The contractors should designate someone with the responsibility of ensuring occupational safety and health;
- The Contractor should perform a Job Hazard Analysis (JHA) and should develop Standard Operating Procedures (SOP) or method statement for the activities that present most risks, such working on heights, preparing cement, electrical works, working in confined spaces, etc.
- Workers should be properly oriented to the safety and health rules and guidelines including having daily tool box briefings prior to the commencement of work;
- Adequate training should be provided to workers in the execution of their tasks;
- Machinery/equipment should be operated by competent, licensed and authorized personnel only, and in a manner that does not endanger other employees or the contractors' equipment;
- An Emergency Preparedness and Response Plan should be prepared and made available to all relevant personnel and the necessary training and resources required should be provided;
- Well-equipped first aid kits should be provided at all work sites;
- At least one personnel trained in first aid should be present at the construction site;
- Arrangements should be in place to medivac personnel if required when works are being conducted in remote areas;
- Special emphasis should be placed on the prevention of exposure to hazardous materials, including molds, biomedical waste, asbestos, etc. This should be addressed as part of workers orientation, and the required PPEs should be provided;
- All hazardous areas at the hospitals should be secured to prevent access to construction workers;
- Potable water for employees should be provided;
- Protective gear should be provided to employees and should be worn at all times during operation. Gear to be provided should include safety vests, hard hats, dust mask, ear plugs, gloves and safety boots where necessary. Rain coats should also be provided;
- Employees should be required to wear safety equipment provided by the contractors in all working areas. Monitoring should be done to ensure workers utilise the gears provided;
- Safety rules and guidelines should be posted at strategic locations;
- Adequate signage with the use of appropriate language should be erected, especially in hazardous areas; and

- Precautions against vectors as well as measures for COVID 19 should be implemented and followed so as to avoid an outbreak among workers, which can eventually spread to nearby communities. Guidelines prepared specially for construction sites such as those by PAHO should be utilized for guidance.

7.4.2 Public Safety

It is anticipated that during construction works the staff, patients and visitors of the hospitals and the public can be exposed to certain activities which can present a risk to their safety. The contractor should, as part of the CESMP, outline measures to ensure that their safety is not compromised. However, the management and staff of the hospitals should evaluate the works to be conducted and develop comprehensive approaches to ensure the safety of patients, visitors and hospital staff. Specific areas that should be considered and incorporated in the Plan and implemented include:

- All hazardous areas should be secured to prevent access to unauthorized personnel.
- All hazardous areas should be demarcated and the construction area cordoned off. Construction of physical barriers should be considered.
- Warning signs should be installed in areas which present a risk for incidents to occur.
- The hospitals administration and staff should be engaged prior to the commencement of works and made aware of the risks presented by the works and the precautionary measures that they should abide with.
- Construction materials and construction waste should be kept in an organized and orderly manner in identified and secured laydown areas that are clearly marked and cordoned off and with restricted access. Such materials should be stored in a manner where it is protected from the weather and if this is not possible, measures should be put in place to prevent pooling so as to avoid creating an environment for mosquitoes to breed.
- If possible, a separate access from what is being used by the public should be used by the contractors.
- The hospitals' management should be informed prior of any high risk activities.
- Contractors should consult with the management of each hospital in developing and implementing the appropriate health and safety measures.
- Before construction begins, the hospitals OSH team/personnel should brief the contractors on the relevant rules, policies, and protocols and reiterate the importance of compliance to reduce injuries and create a safer work environment.
- Monitoring of the contractor should be done by the Supervisory Consultants during the construction period to ensure the health and safety risks are managed. However, hospital management is also encouraged to be vigilant and to also conduct their own monitoring of activities.

7.4.3 Hospitals Health and Safety

Each hospital is required to have a health and safety management system in place. While there are efforts in this regard, with the implementation of several health and safety measures, further improvements are required. The following should be implemented:

- All hospitals should have personnel dedicated to OHS.
- The OHS team should be based on the number of health facility staff.
- Provide opportunity for training and capacity development of OHS personnel.
- A Health and Safety Plan should be prepared, adequately addressing the safety risks associated with the hospitals.
- Establish a Health and Safety Committee, as is required by law.
- Ensure regular monitoring, enforcement and reporting is done by OH&S personnel.
- Ensure appropriate PPE is always available and utilised.

- Ensure there is systematic awareness raising, training and orientation of health facility staff on OHS.

7.5 Emergency Preparedness and Response

This Emergency Preparedness and Response framework is intended to serve as guide and covers both the construction and operation phases of the project. Consistent with the ESRS, this framework will guide the preparation of the emergency preparedness and response plans as part of site specific ESAs/ESMPs and the contractors ESMPs which are expected to address potential emergency scenarios at the local, site level. These emergency preparedness and response plans are expected to address the four phases of emergency management with detailed measures to prevent, mitigate, respond and recover from emergencies.

In addition, the ESMS will also consider emergency preparedness and response measures in relation to the project and the role of the PEU, contractors and suppliers etc.

Construction Phase

The contractors should prepare an Emergency Preparedness and Response Plan (EPRP) as part of the CESMP. The EPRP should outline protocols for responding to environmental emergencies that may occur as a result of unforeseeable circumstances such as a spill of hazardous materials, accidents or medical emergencies. The EPRP should describe the general types of emergency and actions to be followed should an emergency occur during the mobilization and operational phases of the project and should include:

- Emergency Contact Details;
- Emergency Procedures;
- Authority of Control;
- Emergency Prevention Measures;
- Emergency Mitigation Measures;
- Emergency Response Measures and Equipment;
- Scenario Description and Response;
- Incident Reporting; and
- Recovery.

All personnel should be aware of potential risks and take steps to cope with hazards in their work area. In addition, all personnel are expected to alert the correct personnel if they discover an accident, medical emergency, fire or spill. As such, the ERP should also outline the role of the various personnel in emergency response. The types of emergencies to be covered by the ERP should include fuel and other hazardous material spills, accidents to workers or members of the public, fire, etc.

Operation Phase

Each hospital is required to implement a system to respond to emergencies which may occur at the facility. This should be incorporated in operational ESMPs to be prepared for the hospitals. The following should be implemented in this regard:

- An EPRP should be prepared, addressing the risks posed by the operation of the hospital.
- Emergency preparedness and response equipment should be provided to cater for the various types of emergencies.
- Equipment should be placed at strategic locations around the facilities, and clearly identifiable and with clear instruction for usage.
- Equipment should be well maintained.

- Training should be provided to key staff in the response to emergencies. Periodic drills should also be conducted.
- Emergency contact information should be posted in strategic areas around the facilities.
- Muster points should be designated and clearly identified.
- Disaster preparedness, response and management arrangements should be instituted based on risk levels and in particular for flooding.

8.0 ESMP IMPLEMENTATION FRAMEWORK

To ensure environmental, social and safety compliance with the national requirements and those of the IDB's ESPF this implementation framework is recommended as an output of the ESA and ESMP framework. This implementation framework is also consistent with the Environmental and Social Management System (ESMS) which was required to be prepared by the MoH to guide the implementation of the project. The ESMS will be overarching document to guide the PEU throughout life time of project and to ensure that the different dimensions of environmental and social management are interrelated and consistent with each other and in compliance with the ESPF and the Bank's ten ESPS.

This ESA and ESMP framework has identified potential environmental, social, health and safety impacts and risks associated with the implementation of the project, and developing recommendations to mitigate and manage these. Once the details of the project have been finalized environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation and site-specific ESAs/ESMPs will be developed along with contractors' environmental and social management plans (CESMPs) along with scope of works for supervision, monitoring and reporting etc. This chapter provided guidance in this regard.

8.1 Environmental Management Organisational Framework

The environmental and social management framework will have roles and responsibilities at the level of the HSDU, Supervisory Consultants and the Contractors. The management of the hospitals is also expected to contribute to the management of ESHS risks including approving the contractors CESMP and monitoring the works for compliance with the ESHS requirements.

HSDU

The MoH will serve as the implementing agency for this project. The Ministry has in place a Health Sector Development Unit (HSDU). The HSDU reports directly to the Advisor to the Minister of Health, and the Minister of Health. The HSDU is the managing body for projects in collaboration with its donor partners and will be considered as the Project Implementation Unit (PIU) for the project. It is expected that within the HSDU a project unit will be constituted comprising of the various expertise require for project implementation. As it relates to ESHS matters, the HSDU will work in collaboration with the Environmental Health Unit (EHU) of the Ministry. The EHU is mandated to ensure that all risk factors, which adversely affect human health and the environment are mitigated. However, it is recommended that the project unit within the HSDU be assigned with an Environmental and Social Management Specialist to oversee and assist with the implementation of the ESHS requirements. Overall, the Ministry will have the responsibility of ensuring environmental, social, health and safety compliance, including compliance with the IDB's ESPS.

The HSDU Environmental and Social Specialist should oversee the environmental, social and health and safety aspects of the project. The Environmental and Social Specialist should ensure that the IDB's ESPF, including the ESPS are adhered to where applicable, that the contractors comply with the requirements of the Environmental Authorisations to be issued by the EPA if required, and that the contractors prepare and implement the Contractors Environmental and Social Management Plans. The Environmental and Social Specialist should report to the coordinator of the project.

Supervisory Consultants

It is expected that Supervisory Consultants will be engaged to oversee the implementation of the project. The Supervisory Consultants should have as a member of their team an ESHS personnel who will have the responsibility of ensuring compliance with the environmental, social, health and safety

requirements relating to the project. This person should be responsible to provide direction as may be required to the contractors (and HSDU as may be required) to ensure the project meets its ESHS objectives and complies with the project ESMP. The Supervisory Consultants will be required to monitor the contractors' ESHS performance against the IDB requirements, national requirements and that of the MoH, as well as the contractors CESMP. They will also be required to ensure that the Contractor's ESHS performance, including those of sub-contractors, is in accordance with the requirements of the Occupational Safety and Health Act and meets the requirements of all state agencies tasked with the monitoring, regulation and promotion of safety at work.

The ESHS related services to be provided by the Supervisory Consultants should include but not limited to:

- Providing guidance and support to the MOH in securing the necessary environmental and other permits and licences for the project's activities prior to the commencement of construction and to develop a process framework for this including steps and procedures, requirements and timelines.
- Review and approval of the contractors' CESMP, including all updates and revisions (not less than once every 6 months);
- Review and approve the contractors' method statements, implementation plans, prevention and response action plan, drawings, proposals, schedules and all relevant documents;
- Review and consider the ESHS risks and impacts of any design and/or methodology change proposals and advise if there are implications for compliance with the project environmental requirements, consent/permits and other related project matters;
- Undertake audits and inspections of contractors' accident logs, community liaison records, monitoring findings and other ESHS related documentation, as necessary, to confirm the contractors' compliance with the ESHS requirements;
- Agree on remedial action/s and their timeframe for implementation in the event of a non-compliance with the contractors ESHS obligations;
- Ensure appropriate representation at relevant meetings including site meetings, and progress meetings to discuss and agree on appropriate actions to ensure compliance with ESHS obligations;
- Check that the contractors actual reporting (content and timeliness) is in accordance with the contractors contractual obligations;
- Review, critique and consult in a timely manner with the contractors on their ESHS documentation (including regular reports and incident reports) regarding the accuracy and efficacy of the documentation;
- Undertake liaison, from time to time and as necessary, with project stakeholders to identify and discuss any actual or potential ESHS issues;
- Establish, communicate and maintain a grievance redress mechanism including types of grievances to be recorded and how to protect confidentiality;
- Provide appropriate training to contractor's workers when necessary or required by the HSDU; and
- Undertake field inspections of the construction sites to verify the contractors' and sub-contractors compliance with the CESMP and promptly communicate to the HSDU any serious deviations.

Contractors and Sub-Contractors

The contractors and sub-contractors should also be required to employ a suitable qualified and experienced personnel as an Environmental, Social, Health and Safety Officer, with the responsibility of ensuring compliance with the environmental, social, health and safety requirements including permits issued for the works. The responsibilities of this individual should include but not limited to the following:

- Prepare the Contractors Environmental and Social Management Plan which will also apply to any sub-contractor engaged by the contractors;
- Conduct training of workers in health, safety and environmental requirements, including health and safety induction prior to commencement of work onsite and regular tool box sessions;
- Ensure compliance with the EPA's Environmental Authorisation, if applicable;
- Liaise with the HSDU Environmental and Social Specialist and Supervisory Consultants' ESHS Personnel on compliance;
- Implement the Contractors' Environmental and Social Management Plan;
- Conduct site inspections, audits and permanent supervision at the construction site to ensure adequate and timely implementation of, and compliance with, the C-ESMP;
- Oversee the implementation of any corrective action required;
- Address any grievances of stakeholders and workers;
- Report on environmental, social, health and safety compliance; and
- Oversee the clean-up and decommissioning of the sites upon completion of works.

8.2 Roles and Responsibilities

To ensure the environmental, social, health and safety management measures are implemented several players will have major roles to play. The recommended roles and responsibilities are outlined in Table 8-1 below.

Table 8-1: Summary of Environmental and Social Related Responsibilities

Pre-Construction Phase	
MoH	Constitute project unit within HSDU and assign an Environmental and Social Specialist
	Hire Supervisory Consultants
	Completion of pending Manuals and Plans
	Developing a budget for the ESHS implementation
	Engage the EPA on obtaining environmental authorisation for the construction works
Supervisory Consultants	Assign ESHS Personnel as part of the Supervision Team
	Prepare construction bidding documents to include environmental, social, health and safety requirements for review by the IDB prior to execution
	Ensure that the contractor's CESMP is prepared and approved.
Contractors and Sub-Contractors	Assign responsibilities for environmental, social, health and safety compliance to a competent team member or hire an ESHS personnel
	Prepare the CESMP and update as necessary
	Conduct workers orientation and training on health and safety practices to be followed at the construction site
Construction Phase	
MoH	General oversight of the project's environmental, social, health and safety compliance
Supervisory Consultants	Guidance and support to the MoH in securing the necessary environmental and other permits and licences for the project's activities prior to the commencement of construction and to develop a process framework for this including steps and procedures, requirements and timelines.
	General oversight of the contractors and sub-contractors environmental, social, health and safety performance

	Monitor project activities to ensure health, safety, environmental and social compliance
	Identify non-conformances and recommend corrective actions
	Participate in stakeholder engagements and take the lead in addressing/responding to stakeholder grievances
	Convene meetings and discuss status of contractors' compliance with ESHS requirements, including relevant permits.
Contractor and Sub-Contractors	Implement the CESMP, and environmental, social, health and safety mitigation and management measures and corrective actions to ensure compliance with permits and licences
	Participate in the project's progress meetings to discuss environmental, social, health and safety compliance
	Monitor for non-compliances and effectiveness of mitigation measures
	Engaging with stakeholders and addressing any grievances which might arise
	Conducting regular refresher training for workers on environmental, social and health and safety requirements and compliance with relevant permits.
Operation Phase	
MoH and Hospital Management	Prepare and implement an Operational ESMP which shall include a waste management plan, a health and safety plan, an emergency preparedness and response plan and a disaster risk management plan.
	Prepare and implement a maintenance plan for the facilities and equipment.
	Monitor operations to ensure compliance with the ESHS measures

8.3 Contractors and Sub-Contractors Requirements and Permit Compliance

The contractors should prepare and implement a CESMP to address environmental, social, health and safety issues pertinent to the construction phase of the project and which will also apply to any sub-contractors engaged. This CESMP is to be submitted to the Supervisory Consultants for approval, as well as the HSDU (through the Supervisory Consultants) prior to the commencement of works. The CESMP should be reviewed and updated at the targeted hospitals, including by their health and safety personnel to ensure any concern of the hospital management team are adequately addressed. Once approved, the CESMP is expected to be fully implemented during the construction period. Preparation of the CESMP should be guided by this ESA and ESMP framework, outcomes of the environmental and social audits, site-specific ESAs/ESMPs and relevant national standards and guidelines including those of the MoH and IDB. The following should be addressed/included in the CESMP:

- **HSSE Policy** – The contractors' Health Safety, Social and Environmental Policy should be included in the Plan. The policy should also address alcohol and drug use, and interactions with local communities and stakeholders.
- **Management Structure** – The CESMP should describe the contractors' staffing structure for the project, clearly highlighting the responsibilities for health, safety, and the environment.
- **Work Programme** – An overview of the contractors' proposed Work Programme, including information on the duration of works, number of workers to be onsite, potential areas for material stockpiles, living arrangements for workers if applicable, the type and quantity of heavy vehicles that will visit the site. This information will be essential in the review process of the CESMP.

- **Solid Waste Management** – Measures to manage solid waste generated during construction should be described. It should be noted that the contractors are expected to implement a system to ensure solid waste is managed properly. Solid waste expected to be generated include cleared vegetation, garbage such as plastic bottles and food boxes, and construction waste such as packaging materials, wood, formwork, etc. Adequate collection receptacles are to be provided onsite and waste should be taken to an approved disposal site. Waste should not be allowed to accumulate in significant quantity onsite for extended period (not more than 30 days) and should be consolidated in a designated area. Reusable construction waste should be separated for reuse. No burning of any type of the wastes generated will be allowed onsite. Workers are to be made aware of the waste management procedures.
- **Liquid Waste/Wastewater Management** - The contractors are expected to provide adequate toilet facilities onsite based on the number of workers. The contractors are also expected to provide toilets facilities for the Supervisory Consultants. The number and type of toilets to be provided, whether portable or toilets equipped with septic tanks should be indicated. Provision of water for the toilets and maintenance of the toilets should also be described, since toilets are expected to be well maintained. Treatment system for wastewater from these facilities should be described such as draining into a soak away system or whether the tanks are self-treating. If portable toilets are to be utilized these will have to be maintained and emptied on a regular basis.
- **Hazardous Waste Management** - The construction works are not expected to generate significant hazardous waste. Hazardous waste generation may be limited to the servicing of heavy equipment onsite and should include waste oil, oil filters and oily rags. If hazardous waste is generated onsite, the waste should be carefully collected and removed from site and disposed of in an approved manner. A register of hazardous waste generated should be kept onsite by the contractors.
- **Hazardous Materials Management** – The Plan should state if hazardous materials will be kept onsite or taken to the site as required. This would include fuel and lubricants. If hazardous materials are to be kept onsite then the CESMP should describe how this will be done. Significant quantity of fuel should be stored within a contained impervious area with all the safety systems in place and workers should be made aware of the handling practices to avoid spills. However, given the works to be conducted, it is recommended that these materials be transported to the site as needed.
- **Erosion and Sedimentation Control** – The CESMP should describe measures to be implemented by the contractors to prevent erosion onsite, and sedimentation of nearby drains. Stockpiles of construction materials should be placed away from the drainage systems. Nearby drains should also be regularly checked for accumulation of construction materials and if found to be present the materials should be immediately removed.
- **Dust Control** - There is the potential for dust nuisance to occur which can affect workers and nearby receptors, including hospital staff, patients and visitors. Dust can be generated from material transport and stockpiles, as well as construction works such as concrete mixing, cutting of tiles and concrete, etc. As such, the contractors must include in the CESMP measures to prevent dust nuisance from occurring. Measures such as minimizing the height of sand stockpiles, covering of stockpiles, covering of trucks transporting materials to the sites, installing dust screens and providing dust mask to workers should be considered.
- **Noise Prevention** – Construction activities can generate noise at levels which can affect workers and nearby receptors including students and teachers, and in this regard, measures should be outlined to keep noise levels within the prescribed limit. Noise levels should not

exceed 90 dB during the day and 75 dB at nights. Night works should be avoided and should be approved in advance by the Supervisory Consultants. The contractor shall ensure that equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning. Where noise is likely to pose an impact to the teachers and students and nearby residents they should be informed. Workers operating in areas where decibel levels reaches more than 85 decibels should use hearing protection.

- **Workers Health and Safety** – Construction activities pose several risks to workers health and safety. It is therefore essential that the contractors develop and implement a system to ensure workers health and safety are not compromised. This should be detailed in the C-ESMP. It should describe management commitment to safety and employees involvement. An analysis of the worksite in terms of safety, and the potential hazards/risks should be included. Prevention and control measures should be included. Measures to be considered by the contractors should include the provision and enforcing the use of safety gears by workers, training of workers, identify hazardous areas, use of scaffoldings, etc. Standard Operating Procedures (SOPs) for construction activities such as working on heights, erecting and using scaffolds, using ladders and others identified through the Job Hazard Analysis (JHA) should be prepared. Workers should be trained on SOPs prepared. All safety activities must be documented and all illness/injury and exposure should be documented on an Incident Form. Near misses should also be documented. All incidents /accidents should be reported and investigated and Root Cause Analysis (RCA) done. Precautionary measures to address COVID 19 and any other transmissible diseases onsite should also be included as appropriate.
- **Community Safety including Traffic Management** –Measures should be implemented to ensure that the safety of the nearby community is not compromised. These measures should also be documented in the C-ESMP. A Traffic Management Plan should be developed for each hospital and to address access to the hospitals in general during construction works, parking and movement of heavy equipment throughout the nearby communities especially those with schools and playgrounds. The Plan should also outline measures such as restricting access to the construction zone by securing/barricading area, installing the necessary warning signs, ensuring the free flow of traffic around the work site, and at no time should there be trucks or other construction equipment left standing on the road way or shoulders.
- **Hospital Safety** – Measures should be implemented to ensure that the safety of persons present at the hospital, including staff, patients and visitors, are not compromised. Measures should also be included to ensure minimal disruption of hospital services, or disturbance of patients.
- **Emergency Preparedness and Response Plan** – An Emergency Preparedness and Response Plan must be included in the C-ESMP to address emergencies relevant to the construction phase of the project. The possible emergencies are:
 - Accidents – can occur which can result in injuries to workers.
 - Fires - Fire extinguishers and/or other response measures must be placed at the working sites and training should be provided on usage.
 - Fuel/Chemical Spills - If there is a large spill or release of solvents, fuels, or other kind of hazardous material, then the EPA should be notified and other measures taken. A spill response kit should be provided and kept onsite and workers should be trained to respond to spills through mock spills exercises.

The Emergency Preparedness and Response Plan should also address training of employees, assembly point in case of emergency, emergency contacts, communications, responsible personnel, response procedures and incident reporting.

- **Chance Find Procedure** – While the possibility of a discovery of an artifact during construction is extremely low, a Chance Find Procedure should still be in effect and should be implemented if there is a discovery. This should be included to cater for if during excavations archaeological pieces are found. The procedures to be followed should be outlined. The works must be stopped and the National Trust of Guyana should be informed.
- **Training** - Prior to the commencement of works the contractors should conduct an Induction Training for all workers. The training should be conducted by the contractors' ESHS Personnel and covers the environmental and social requirements of the project, including the role of workers in pollution control, health and safety and emergency response. Thereafter, all new workers should be adequately briefed on the requirements prior to commencing work onsite. If necessary, refresher training may be conducted, and supplemented by regular Tool Box sessions. Training should also be provided in any SOPs prepared. Training to be conducted should be described in the C-ESMP.
- **Site Closure, Decommissioning and Restoration** - At the conclusion of works the sites should be cleaned up and all waste removed and all temporary structures belonging to the contractors dismantled and also removed. The measures to be employed by the contractors during this process should be described in the CESMP.
- **Grievances** – A Grievance Mechanism is included in the ESMP (Section 8.6). However, since the Contractor will be responsible for addressing grievances, including implementation of corrective actions, measures to be employed by the Contractor in dealing with grievances should be outlined in the C-ESMP. A separate mechanism to address grievances of construction workers should also be included in the C-ESMP.
- **Monitoring and Reporting** – The C-ESMP should outlined how monitoring will be done by the contractors' ESHS Personnel, including frequency, areas to be monitored, etc.
- **Budget** – A budget for ensuring environmental, social, health and safety compliance, including the implementation of management and mitigation measures, should be presented in the C-ESMP.

8.4 Environmental and Social Monitoring

Monitoring of project activities should be conducted to ensure that the recommended mitigation measures and management practices identified in this ESMP are implemented and effective. This should take place for both the construction and operation phases of the project. The MoH, through the HSDU Environmental and Social Specialist, and with support from the EHU, should conduct periodic monitoring during the construction phase of the project. This will require frequent visits to the project sites to conduct monitoring to determine compliance with the environmental, social, health and safety requirements. The contractors should also conduct monitoring onsite to ensure their compliance and provide monthly reports. Table 8-2 identifies the recommended criteria to be monitored during the construction phase, as well as the frequency and location of monitoring activities.

Table 8-2: Environmental and Social Monitoring During Project Construction

Environmental and Social Criteria	Frequency	Locations
Air Quality <ul style="list-style-type: none"> ▪ Evidence of dust accumulation and suspended particles 	Continuous	<ul style="list-style-type: none"> ▪ Around active construction zones ▪ Hospital buildings or facilities most proximate to active construction zones

Environmental and Social Criteria	Frequency	Locations
<ul style="list-style-type: none"> through visible observation ▪ Period checks with receptors 		<ul style="list-style-type: none"> ▪ Hospital boundaries to immediately adjacent land uses
Noise <ul style="list-style-type: none"> ▪ Decibel levels 	Periodically	<ul style="list-style-type: none"> ▪ Around active construction zones ▪ Hospital buildings or facilities most proximate to active construction zones ▪ Hospital boundaries to immediately adjacent land uses
Water Quality <ul style="list-style-type: none"> ▪ Visual observation for sedimentation and oil and grease 	As needed	Perimeter drains within the hospital compounds and drains near material stockpile areas.
Waste Management <ul style="list-style-type: none"> ▪ Compliance with CESMP and waste management practices ▪ Littering and waste accumulation 	Weekly	Waste receptacles, disposal sites and active construction sites.
Health and Safety <ul style="list-style-type: none"> ▪ Use of protective gear by workers ▪ Adequate and appropriate signage ▪ Location of Emergency Procedures ▪ Availability of emergency response equipment ▪ Health conditions of staff. ▪ Demarcation of construction site ▪ Vector control and COVID-19 preventative measures 	Weekly	Active construction work areas
Community Wellbeing/Concerns <ul style="list-style-type: none"> ▪ Employment ▪ Grievances which may arise ▪ Any emerging issue 	Weekly	Within and around the hospitals including staff, construction workers, patients, visitors and neighbours.
Drainage maintenance and management <ul style="list-style-type: none"> ▪ Drains are clear and free of debris ▪ No localised flooding 	Weekly	Within and around the hospitals
Traffic Management <ul style="list-style-type: none"> ▪ Traffic congestion 	Weekly	Within and around the hospitals and in nearby communities

Environmental and Social Criteria	Frequency	Locations
<ul style="list-style-type: none"> Material and equipment on road shoulder causing encumbrances Traffic control in place Compliance with traffic rules 		
Code of Conduct <ul style="list-style-type: none"> Awareness by workers Compliance by workers 	Weekly	Within and around the hospitals
Supply Chain and Labour Management	Weekly	Within and around the hospitals and in nearby communities

Monitoring activities are expected to continue during the operation phase, mainly by the MoH and the management of the hospitals. Table 8-3 below identifies the parameters recommended to be monitored as well as the frequency and location of monitoring activities.

Table 8-3: Environmental and Social Monitoring During Project Operations

Impact	Parameter	Frequency	Responsibility
Management of waste	<ul style="list-style-type: none"> Compliance with and regulations and guidelines for health facilities Adequate collection and storage receptacles Mechanism for the collection, storage and disposal of medical and other waste Appropriate trained personnel Compliance with waste management practices by staff Appropriate PPE being utilized in handling of waste 	Monthly	<ul style="list-style-type: none"> OH&S Personnel Management Team at each hospital
Maintenance of health facilities	<ul style="list-style-type: none"> Electrical, plumbing, air-conditioning, sanitation, wastewater and sewage systems are fully functional Maintenance programme in place and active 	Monthly	OH&S Personnel
Air pollution from onsite incinerators	<ul style="list-style-type: none"> Open burning is prohibited Waste collection and management system functional 	Monthly	OH&S Personnel
Occupational Health and Safety Systems	<ul style="list-style-type: none"> OH&S personnel on staff Reports from OH&S personnel on training, awareness, etc. PPEs available and are utilized 	Monthly	OH&S Personnel
Emergency Response System including Fire Safety and Prevention	<ul style="list-style-type: none"> Emergency Response System in place Emergency detection and response equipment provided including fire fighting equipment Record of maintenance of equipment 	Monthly	OH&S Personnel

Impact	Parameter	Frequency	Responsibility
	<ul style="list-style-type: none"> Record of orientation and training conducted Record of drills conducted 		
Noise from electricity back-up systems	<ul style="list-style-type: none"> Decibel levels from generators and compressors 	Monthly	OH&S Personnel
Security Risk at Health Facilities	<ul style="list-style-type: none"> Number of security personnel Installation of security cameras 	Monthly	OH&S Personnel
Disaster Management Arrangements and Drainage Maintenance	<ul style="list-style-type: none"> Disaster Risk Assessments conducted Interventions being made to reduce risk Disaster Response Mechanism developed and implemented 	Monthly	OH&S Personnel
Grievance Mechanism	<ul style="list-style-type: none"> Contact arrangements such as notices, phone numbers, social media links etc. are active and accessible. There is ongoing collection, acknowledgement, assessment and responses to grievance Documentation of grievances and responses Timelines for responses 	Monthly	OH&S Personnel

8.5 Reporting

To ensure that the level of ESHS compliance is documented a reporting mechanism should be implemented. Monthly progress meetings are expected to be held at which ESHS matters will be reported on and discussed. In addition, reporting should be done by the HSDU, Supervisory Consultants and the contractors.

HSDU

An Environmental and Social Compliance Report should be prepared by the Environmental and Social Specialist, documenting the status of compliance, areas of non-compliance, corrective actions recommended and other improvements required. This report should be submitted to the IDB. This report should be prepared at least quarterly, if not monthly.

Supervisor Consultants

The Supervisory Consultants should prepare a monthly report detailing the ESHS performance by the contractors.

Contractor

The contractors should report on environmental compliance at the Monthly Progress Meetings and in the Monthly Progress Reports. The contractors should also report on any environmental or health and safety incidents which might occur. Further, the contractors should be responsible to prepare and submit any report requested by the EPA in the Environmental Authorisation. The contractors are expected to submit a report to the Supervisory Consultants on environmental, social, health and safety performance at least on a monthly basis. The report should include but not limited to the following:

- Environmental incidents or non-compliances observed and corrective actions taken with regards to contract requirements, including waste management, contamination, noise and dust control, traffic management, etc.;
- Health and safety incidents, accidents, injuries and all fatalities that require treatment and actions taken to improve conditions. Information on number of workers, work hours, PPE provided and usage, and worker violations and follow-up actions taken (if any);
- CESMP implementation progress, including implementation of the management and mitigation measures outlined in the plan, effectiveness of the measures being implemented, any emerging ESHS issue and any adjustments required (if any); and
- Grievances by workers and community, including grievances received, how resolved, those unresolved and plan for resolving these.

In addition to the monthly report, the contractors should also provide immediate notification to the Supervisory Consultants of incidents in the following categories:

- confirmed or likely violation of any Environmental Authorisation conditions or any relevant legislation;
- any fatality or serious (lost time) injury;
- significant adverse effects or damage to private property, e.g. vehicle accident;
- damage to public utilities; or
- any allegation of sexual harassment or sexual misbehavior, child abuse, defilement, or other violations involving children.

Full details of such incidents shall be provided to the Supervisory Consultants' Project Manager within the timeframe agreed with the Project Manager.

8.6 Stakeholder Engagement Plan

Stakeholder engagements will familiarize local stakeholders with the project's activities, the measures being undertaken to protect the environment, provide a platform for concerns to be raised and to lay the foundation for a positive relationship between the project and the community.

8.6.1 Overview and Scope

Stakeholder engagement is an important process in the planning and implementation stages of the project. It provides stakeholders, interested parties, and the public with information on the project, as well as expected impacts, mitigation measures, and expected outcomes. This encourages a positive relationship between the project and the stakeholders of the project, and fosters a transparent process that allows for information disclosure, feedback, and grievance redress.

ESPS 10, which addresses Stakeholder Engagement and Information Disclosure, was deemed relevant to the project by the IDB and as such, a Stakeholder Engagement Plan (SEP) is required to be prepared. In this regard, this SEP has been prepared and will provide guidance to the MoH on the communication and engagement with stakeholders during the implementation of the project. The SEP seeks to:

- Provide guidance for stakeholder engagement in line with IDB standards;
- Identify key stakeholders;
- Identify and outline effective dissemination of information, communication methods, timings, processes and structures for stakeholder consultations and feedback;
- Establish a formal grievance mechanism;
- Identify roles and responsibilities for the implementation of the SEP; and
- Identify monitoring measures to ensure the effectiveness of the SEP.

8.6.2 Stakeholder Engagement Process

Stakeholder engagement will involve the following steps:

1. Stakeholder identification and analysis;
2. Planning how the engagement with stakeholders will take place;
3. Disclosure of information;
4. Consultation with stakeholders;
5. Addressing and responding to grievances; and
6. Reporting to stakeholders.

8.6.2.1 Stakeholder Identification and Analysis

For the purpose of this project, the stakeholders have been divided into four categories. The categories are defined based on the relationship of the stakeholder to the project so that there can be an effective information disclosure and feedback process. These stakeholder categories are outlined below:

- a) Project Affected Parties (PAP) including beneficiaries are stakeholders that will be affected directly or indirectly by the project. These stakeholders are to be closely engaged in identifying impacts and their significance, and mitigation and management measures
- b) Interested Parties are stakeholders whose interest may be affected by the project and who have the potential to influence the project outcomes in any way, but who may not experience the direct impacts of the project
- c) Key Project Representatives/Counterparts are members of the decision-making and administrative body of the project.

- d) Disadvantage/Vulnerable Individuals or Groups are any person(s) such as persons with disabilities who may be disproportionately impacted or further disadvantaged by the project as compared with any other group. This group may require special engagement measures that will ensure equal representation in the stakeholder engagement process.

The stakeholder analysis is aimed at identifying stakeholder in the four categories above and the expected outcome from engagement with them. Cooperation with stakeholders throughout the project development will likely involve the identification of persons who are legitimate representatives of stakeholder groups. An analysis of the stakeholders identified as relevant to the project is presented in Table 8-4.

Table 8-4: Analysis of the Identified Stakeholders

Category	Stakeholder Identification	Characteristics	Expected/Potential Project Impact/Interest
Key Project Representatives/Counterparts	Ministry of Health Regional Health Officers Regional Executive Officers Management of the GPHC, NARH and LHC.	The policy and decision making bodies of the targeted hospitals	The hospitals may experience day to day service interruptions and their administrative arms will be responsible for removing and relocating services and resources. Will benefit from the improved services delivery Can provide input on the formulation and content of the project's key components, including their priorities, the design of the facilities, and recommendations on the implementation of the project.
Project Affected Parties (PAP) including beneficiaries	Residence in close proximity to the three targeted hospitals Institutions such as the New Amsterdam Technical Institute and Berbice High School Hospital Staff Patients Hospital Visitors Linden Hospital Day Care Centre	These are stakeholders that are most likely be affected by and benefit from the project	Can be affected by noise and dust emission Suffer from disruption of medical services and other activities May be exposed to safety risks May lose parking areas Will benefit from enhancement of medical environment. May be affected by an increase in traffic Can provide input on the formulation and content of the project's key

Category	Stakeholder Identification	Characteristics	Expected/Potential Project Impact/Interest
			components, including the design of the facilities, and recommendations on the implementation of the project.
Interested Parties	Guyana Medical Council Guyana Nurses Association Georgetown Mayor and City Council New Amsterdam Mayor and Town Council Linden Mayor and Town Council PAHO/WHO Guyana Responsible Parenthood Association	Partners in the health sector of Guyana	Can provide input on the formulation and content of the project's key components, including the design of the facilities, and recommendations on the implementation of the project.
Disadvantage/Vulnerable Individuals or Groups are any person(s) such as persons with disabilities	Ministry of Human Services and Social Security Deaf Association of Guyana Guyana Society for the Blind National Commission on Disability	Vulnerable Stakeholders and Policy Representatives	Can be impacted by the design of the hospitals if measures to cater for differently abled are not included. Interventions for consideration in project design include appropriate signage, wheelchair ramps, readable signs and other interventions for the visually and hearing impaired, support bars in restrooms and at check in counter/other areas throughout facilities, automatic doors etc.

8.6.2.2 Information Disclosure

To ensure transparency and visibility of the project and its activities, the project should adopt an approach to information disclosure between the project and its identified stakeholders and other interested parties through an engagement method that is based on freedom of expression, prior and informed notification through the sharing of relevant information. The information disclosure methods should be targeted to the stakeholder based on their specific needs. For example, attention must be paid to engagement method that will be used to disclose information to the vulnerable groups, and people living with disabilities. In this case, it is recommended that a meeting be held with the organization representing them to determine the best practices and methods of presenting information to the vulnerable groups and people living with disabilities. Once this information is obtained, adjustments can be made to the engagement method to reflect the same.

Information regarding the project has been made public by the IDB and also by the MoH through their websites and social media platform. In addition, the ESA and ESMP framework was disclosed on the MoH website and social media platform. Further, a stakeholder consultation session was held via the ZOOM platform on August 26, 2022 at 10:00hrs where the project was presented along with the ESA and ESMP framework findings and recommendations. The report from the stakeholder consultation session is included as Appendix D. The MoH has indicated a commitment to keeping stakeholders informed and involved during project execution and to adopt various methods for disclosure as part of this approach including the use of print, electronic and social media.

Table 8-5 below outlines the information to be disclose, the disclosure method, and the expected outcome of the disclosure process.

Table 8-5: Information Disclosure Strategy

Project Stage	Information to be Disclosed	Engagement Method	Expected Outcome
Project Design	Potential project scope and interventions	Virtual/in person consultations with project beneficiaries/affected parties	Feedback on project scope and design, including identification of priorities of each institution and recommendations regarding project execution
	Proposed project intervention at each hospital	Virtual/in person consultations with project beneficiaries/affected parties	Feedback on project scope and design, including recommendations
	Draft design/plans	Virtual/in person consultations with project beneficiaries/affected parties	Feedback on plan/design
	Safeguards instruments including ESA and ESMP and the SEP inclusive of the GRM	Virtual/ consultations with project beneficiaries/affected parties and posting on MoH's website	Awareness of safeguards instruments and feedback and recommendation

Project Stage	Information to be Disclosed	Engagement Method	Expected Outcome
Project Inception	<p>Construction plans including project scope, timeline, affected services, and mitigation measures</p> <p>Information of works to contractors, including advertisement of bids for construction</p> <p>Information on contractors, their approach and implementation plan, and their key personnel</p> <p>Information on Supervisory Consultants, their role and key personnel</p> <p>Introduction of the HSDU as the project's implementation unit</p> <p>Information on available GRM</p>	<p>Virtual/in person consultations and meetings with affected persons</p> <p>Project presentation to hospital administration, MoH and other key stakeholders</p> <p>Summarized project information to be distributed to doctors, nurses, auxiliary staff and hospital's administration</p>	<p>Awareness of the project execution plan, and expected impacts</p> <p>Awareness of contractors work programme</p> <p>Informed feedback and recommendations</p>
Review of Initial Engagement	<p>Analysis and findings from stakeholders' feedback and recommendations</p> <p>Updated work program and approach based on stakeholders' feedback</p> <p>Identify and analyze challenges to the implementation of the project</p>	<p>Virtual/in person consultations and meetings with affected persons</p>	<p>Information sharing and awareness of stakeholders</p>
Project Implementation	<p>Regular updates on project activities and work program</p> <p>Guidance on health and safety practices for targeted</p> <p>ESHS management system</p>	<p>Virtual/in person consultations and meetings with affected persons</p> <p>Printed material on Health, Safety and Environment for hospitals, including mounting signs within the hospitals' facilities for public knowledge</p> <p>Advertisement in newspaper, internet, and other social media platforms</p>	<p>Awareness of the project and its expected impacts</p> <p>Equal opportunity and open sourcing of construction and other services and material relevant to the project</p> <p>Ensure and maintain the health and safety of staff and patients</p>

Project Stage	Information to be Disclosed	Engagement Method	Expected Outcome
		Hotline numbers, direct GRM email address, and suggestion box at the HSDU/PIU Staff representative attending construction projects progress meetings	
Close of Project	Closing report of the project	Virtual/in person consultations and meetings with affected persons Hotline numbers, direct GRM email address, and suggestion box at the PIU.	Project benefits realisation

8.6.2.3 Stakeholder Engagement Programme

The stakeholder engagement programme is aimed at providing adequate and timely access to information and feedback process. This engagement programme will provide stakeholders with the tools needed to understand the project and provide feedback on the project design and implementation. A stakeholder consultation session was held via the ZOOM platform on August 26, 2022 at 10:00hrs where the project was presented along with the ESA and ESMP framework findings and recommendations. The MoH has indicated a commitment to keeping stakeholders informed and involved during project execution and this section details consideration to be included by the MoH as part of the stakeholder engagement programme.

Engagement Methods and Tools

The stakeholder's engagement methods and tools should be inclusive and provide for the best practices when engaging with stakeholders. This includes providing equal access to vulnerable population, stakeholders that are disadvantaged, those that does not have access to technology and telecommunication.

Consultations should be conducted in an adequate and timely manner and should meet the general requirements on accessibility. The application of various techniques and methods for the engagement of stakeholders, and for the purpose of disseminating of project information will be helpful in reaching or widening the scope of stakeholders that receive the information. For the process to be impactful, engagement methods and techniques should be tailored to the specific needs of targeted groups.

Approach to Engagement

It is recommended that the consultations/engagements employ an approach to the engagement method that is based on freedom of expression, and prior and informed notification through the sharing

of relevant information. This will provide an unconstrained and unreserved process that is supported by a timely provision of relevant and understandable information and which targets a wide cross section of stakeholders with inclusion of participation based on gender and vulnerable groups.

Other parameters that the engagement methods should consider includes:

- Advance notification of engagement for the affected parties/target group should be done via primary means such as direct emails, calls, and letters. This is notification is inclusive of any project information, agendas, clearly defined scope of issues, and project proposal that might be relevant at the time. Responses such as regrets, and confirmation should be kept on file for accountability purposes. Other notification measures that maybe utilized for interested parties/target groups can include advertisement in public places and domain, such as newspaper advertisement and television sponsored advertisement. The HSDU is expected to provide information readily to any member of the public who wish to seek clarification on the status of the project. A list of participants of target group should be compiled in advance and agreed to ahead of the engagements.
- Selection of the correct communication method for specific target groups is a critical aspect of the stakeholder engagement process, and therefore careful consideration should be made in determining the appropriate approach for each, including consideration related to gender and vulnerability. The information that will be present to target groups should highlight the main concerns of the group.
- An agenda should be drafted for each consultation/meeting as an opportunity to provide a guided meeting structure as a measure of keeping the meeting in line with the objective the stakeholder engagement plan. The agenda should include meetings' structure, sequence, project personnel and designation, issues/topics to be discussed, and the format for discussion. Following the formal presentation of the information, an adequate amount of time should be allocated for a question-and-answer segment with a free speaking format facilitated by the moderator/chairperson to encourage the exchange of ideas and feedback. A record of all comments made during the engagement should be kept by the HSDU to be analyzed and used to action necessary and relevant recommendations and feedback. The recorded comments and outcomes should be used in regular reporting of the project.
- An attendance list should be made available at the commencement of the consultations as a record keeping measure. The attendance list should provide information on the participants, their contact information, and affiliation. However, confidentiality should be maintained when representing feedback so there is no attribution to the individual by name or reference.
- The introductory comments and project description should be delivered in a clear and concise manner, free from excessive technical terms and jargons. It is recommended that the presentation be conducted using visual aid, such as powerpoint presentation and handout material such as pamphlets and posters where relevant. Whenever technical specifics of the project's particular activities or solutions are required to be delivered in appropriate language of the audience and the description of complex technicalities is adapted to their understanding, thereby enabling productive feedback and effective discussion.
- To accurately capture the output of the stakeholder engagement sessions, proper record keeping should be ensured using the following methods:
 - Taking minutes of meeting by an assigned person from the PIU;
 - Recording of meeting held virtually; and
 - Photographs.

Table 8-6: Consultation Methods and Techniques

Method/Tool	Description and Use	Contents	Dissemination Method	Target Group
Focus Group Discussions	Used to facilitate discussion on the project's specific issues that merit collective examination with various groups of stakeholders such as project scope.	Project's specific activities and plans, design solutions and impact mitigation/management measures that require detailed discussion with affected stakeholders.	Announcements of the forthcoming meetings to be widely circulated to participants in advance. Targeted invitations are sent out to stakeholders.	Affected Parties Key Stakeholders Disadvantaged/ Vulnerable Groups
One on One Engagements	Used for engagement with the management of existing hospitals. Can also be used for engagement with local authorities such as the Town Councils and neighbouring land users.	Project's specific activities and plans, design solutions and impact mitigation/management measures that require detailed discussion with affected stakeholders. Any emerging issue or concern during construction can also be discussed.	Inform in advance of meeting	Affected Parties Key Stakeholders
Community Meetings	Used for sharing of project information and specific details such as construction plans	Design of hospital interventions, construction plans and schedules, impact mitigation/management measures etc.	Targeted invitations distributed to community members, posting of flyers, and local announcement.	Affected Parties Key Stakeholders Interested Parties Disadvantage/ Vulnerable groups
Feedback & Suggestion Box	A suggestion box/designated email address can be used to encourage affected parties such as staff and patients to leave written feedback	Any questions, queries or concerns, especially for stakeholders that may have a difficulty expressing their views and issues during public meetings	Appropriate location for a suggestion box should be selected in a safe public space to make it readily accessible for the hospital users and surrounding community. Information about the availability of the	Affected Parties Other Interested Parties

Method/Tool	Description and Use	Contents	Dissemination Method	Target Group
	<p>and comments about the project.</p> <p>This feedback mechanism can be used anonymously if the stakeholder wishes to remain unnamed.</p>		suggestion box should be communicated as part of project's regular interaction with local stakeholders.	Disadvantage/Vulnerable Groups
Internet/ Digital Media/Social Media	<p>Project digital space to promote various information and updates on the overall project, impact assessment and impact management process, procurement, employment opportunities, as well as on project's engagement activities with the public.</p> <p>Project's digital space should have a built-in feature that allows visitors to leave comments or ask questions.</p>	Information on project, updates, health and safety, community relations, community updates, employment and procurement, environmental and social aspects	Limitation: Not all parties/stakeholders have access to the internet.	<p>Affected Parties</p> <p>Other Interested Parties</p> <p>Disadvantage/Vulnerable Groups</p>

8.6.3 Project Resources and Implementation Responsibility

The SEP should be administered and implemented by the MoH. Implementation should be led by the Environmental and Social Specialist.

The cost associated with the implementation of the SEP should be covered by the MoH. An estimated budget should be prepared once all the project details are finalized. The following should be covered under the budget:

- Coordination and logistics;
- Preparation of materials;
- Communication;
- Implementation;
- Supervision, monitoring, and reporting;
- Travel of project personnel to consultation meetings;
- Provisions for disadvantage/vulnerable groups to attend consultations; and
- Unforeseen future expenses.

8.6.4 Monitoring and Reporting

The SEP is aimed at open and effective communication and dialogue with the project related stakeholders and seeks to ensure that the project is executed in a transparent and open manner. The SEP caters for an informed approach to the delivery of health care in Guyana, and thus provide adequate outlet for feedback and recommendations. The stakeholders are key factors in the successful completion of this project, and should therefore be recognized as an invaluable resource in the project's SEP. Implementation of the SEP should commence as soon as the plan is finalised, and should continue throughout the duration of the project.

The SEP should be periodically revised and updated as necessary during the course of the project implementation in order to ensure that it remains relevant, and that the identified methods of engagement remain appropriate and effective in relation to the project context and specific phases of the development. Any major changes to the project related activities and to its schedule should be duly reflected in the SEP.

Monthly summaries, consultation reports and internal reports on public grievances, enquiries and related incidents; consultation reports, together with the status of implementation of associated corrective/preventative actions should be collated by HSDU's Environmental and Social Specialist. The monthly summaries should provide a mechanism for assessing both the number and the nature of complaints and requests for information, along with the project's ability to address those in a timely and effective manner. It should also include any engagement activity conducted during the month.

A number of Key Performance Indicators (KPIs) should also be monitored by the project on a regular basis, including the following parameters:

- Number of consultation meetings and other public discussions/forums conducted within a reporting period (e.g. monthly, quarterly, or annually) including a breakdown of gender participation and also vulnerable groups engaged;
- Frequency of public engagement activities;
- Geographical coverage of public engagement activities;
- Number of locations and communities covered by the consultation process, including the communities in hinterland areas and indigenous communities as appropriate;
- Number of grievances received within a reporting period (e.g. monthly, quarterly, or annually) and number of those resolved within the prescribed timeline

- Type of grievances received; and
- Number of press materials published/broadcasted in the local and national media.

8.7 Project Level Grievance Redress Mechanism

All stakeholders who believe aspects of the project are likely to have a detrimental impact on their organisation, community, day to day activities, the environment, or on their quality of life should be able to communicate their grievances. These grievances should be documented, analysed and responded to efficiently. Stakeholders should also be able to submit comments and suggestions that they feel will increase the benefits of the project and reduce or mitigate any adverse impacts.

It is envisaged that any potential grievances arising from the construction activities will be localized. As such, to ensure that the process is effective, a site level mechanism to address such grievances should be put in place. Each of the targeted hospital has an internal grievance mechanism established to deal with complaints that may arise from the everyday functioning of the hospital. However, the project requires an additional mechanism to address complaints and grievances that are specific to the project. This uniform and centralized grievance mechanism will allow the affected stakeholders to express their grievance and receive a response in a timely manner. It will also allow for the HSDU to consolidate grievances from the various project sites to identify trends, compare strengths and weaknesses, and coordinate redress approach. It will also allow the equal access to the GRM across the project so that one set of stakeholders may not be marginalized or excluded due to the hospital's current grievance mechanism.

Stakeholders should be informed of the grievance mechanism in place, as well as the measures put in place to protect them against any reprisal for its use. This should be done during interactions with stakeholders.

Receiving Grievances

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

Face to Face/In Person - Grievance and complaints can be lodged, collected, and recorded in person at stakeholder engagements, during site visits, and by visitors to the HSDU office. These grievances should be noted and entered into the formal process thereafter. The name and contact information should also be recorded so that there can be feedback on the issue. Should the stakeholder prefer to remain anonymous, the grievance should be given an identification number and date when it is being logged. The stakeholder that prefers to remain anonymous should encourage to follow-up on the complaints via telephone or email to get updates on redress actions. Questions and comments made during the stakeholder engagement that directs to grievance should be treated as an official grievance and should be entered into the records as such.

Telephone/E-mail Address - At the inception of the project, the HSDU should set up and include as part of the information disclosure a dedicated telephone number and an email address that will be used to receive grievance, complaints, and general feedback. This method can be used to receive grievance from the affected parties anonymously and discreetly. The telephone numbers and email should be published on all correspondence and public awareness advertisement from the project.

Suggestion Box - Suggestion boxes should be placed at all the project sites including the hospital and at the HSDU office. Suggestion box at the sites will allow for equal opportunity for people to have access to the grievance mechanism, and be allowed to express those grievances in a manner that is best suited for their needs.

Registering Grievances and Complaints

All grievances and complaints should be recorded in a register maintained by the HSDU. The register should also record other information on the grievance received, such as name, affiliation, and contact information if available. Grievances received at public consultations should be reflected in the minutes and as well as in the register. Grievances received via the HSDU telephone line, designated GRM email address, and written correspondence should be acknowledged by written reply to complainant where contact information is provided.

Identifying and Outlining of Grievance

The HSDU should be responsible for identifying and outlining the grievance or complaint within the scope of the project. This exercise will ensure that the grievance is properly understood and presented for assessment and redress. Establishing the validity of grievances (i.e. is it a project-related grievance) is a necessary step in the GRM process, so that valuable project resources are not wasted or misappropriated. Once that validity of the grievance is established, it should be moved to the next step of the GRM. However, if the HSDU finds that the registered grievance has no relevance to the project, it should be filed away for future reference (with justification and supporting evidence) as a grievance that is not related to the project and no further follow up will be required. This should be done within the first day of receiving the grievance.

Analysis and Assign Responsibility of the Grievance/Complaints - Once the grievance has been identified and outlined within the scope of the project, it should then be analyzed to address the concerns of the grievance. Once the main issue has been identified, and analyzed, there should be a general consensus on how to move forward with the project, and the possible method of implementation of the recommendations. This step should be completed within 2 days of receiving the complaint.

Proposed Response - The Environmental and Social Specialist should review the grievance, discuss with the complainant, and a proposed possible response to the grievance should be put forward. This should be done within the scope of the project, while maintaining the aims and objectives of the project components identified. The proposed response should also be done within a reasonable time to ensure that any changes are made efficiently. This step should be completed with 5 days of receiving the complaints.

Agreement on Response - The aim is for there to be a general consensus with the complainant on the response and actions to be taken. If an agreement is reached, the agreement should be implemented. If no agreement is reached, then the case should be reviewed. Construction related grievances should be forwarded to the Supervisory Consultants for it to be addressed with the contractor. The following steps should be taken in this regard:

- The Supervisory Consultants Project Manager, along with the Contractor's Project Manager/ESHS Personnel, should investigate the reported grievances to determine the validity of a complaint and cause for the grievance;
- It should then be determined whether grievance can be resolved by the Project Team or whether outside authorities with regulatory or other responsibilities and relevant skills are to be consulted;
- Or it should be determined if corrective action are to be taken by the Contractor and what those actions are;
- The Supervisory Consultants Project Manager should prepare a grievance report, including supporting materials such as photographs. If necessary, a clear list of tasks and outcomes expected shall be developed;

- If grievance is the fault of the Contractor, then the Contractor is to implement corrective action immediately.
- The Supervisory Consultant Project Manager, along with the Contractor's Project Manager/HSSE Personnel should conduct follow-up inspection to monitor the situation and determine whether problem is likely to recur and put measures in place to prevent recurrence.
- The Supervisor Consultant should inform HSDU on the outcome of the grievance redress process.

Update on the grievances/complaint resolution – The redress of a grievance should be effectively communicated to the complainant in timely manner. Monthly case/ grievance reports should be generated by HSDU Environmental and Social Specialist and reported to the Project Coordinator to inform management decisions as part of the reporting system. Periodic reports should also be generated within a reasonable time frame for stakeholders upon request irrespective of the period.

A recommended procedure for resolving a grievance is further detailed in Table 8-7. This can be adopted by the MoH and adjusted once project implementation commences.

Table 8-7: Grievance Redress Procedures

GRIEVANCE PROCEDURES	TIMELINE
Receiving and registering the complaint.	1 day
Determine merit of the complaint and acknowledgement of complaint	2 days
Investigation of complaint	5 days
Determination (and approval) of appropriate solution/response	1 day
Communication on the resolution to the complainant	1 day
Receive and acknowledgement of appeals by aggrieved party (where solutions are not satisfactory)	2 days
Activate arbitration mechanisms where necessary	1 week
Resolution of Issue	1 week
Updating of Grievance Log	1 day

Grievance relating to Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment

In addition to the project level and worker GRM, a safe and ethical process for reporting, investigating, and addressing allegations of Gender Based Violence, Sexual Exploitation and Abuse and Sexual Harassment (GBV/SEA/SH) should be established. The HSDU Environmental and Social Specialist should be responsible for dealing with any GBV/SEA/SH. GBV/SEA/SH cases should be logged by the HSDU Environmental and Social Specialist and survivor's/victims information should be protected by using codes to maintain confidentiality. Specifically, the GRM should only record the following information related to the GBV/SEA/SH complaint:

- The nature of the complaint (what the complainant says in her/his own words without direct questioning).
- If, to the best of their knowledge, the perpetrator was associated with the project; and, if possible, the age and sex of the survivor.
- Any cases of GBV/SEA/SH brought through the GRM should be documented but remain closed/sealed to maintain the confidentiality of the survivor. Here, the GRM should primarily serve to:
 - Refer complainants to the GBV/SEA/SH services provider; and
 - Record the resolution of the complaint
- The HSDU should also immediately notify both the MoH and the IDB of any GBV/SEA/SH

complaints with the consent of the survivor/victim. If there is an anonymous complaint, the PEU should share information on the case with the IDB providing a code number to the case and avoiding disclosing any information that could help to identify the survivor. Notifications should be made to the Bank in line with the confidentiality approach.

- Assistance should be provided to GBV/SEA/SH survivors/victims by referring them to GBV/SEA/SH services provider for support immediately after receiving a complaint directly from a survivor/victim, prior to the survivor consent, and in case they are interested in them.

The GRM should ensure there is specify protection of privacy and a mechanism free from coercion or risk of reprisal. Information on the IDB's GRM and related guidance should be made available during the construction phase.

CONCLUSION

The Health Care Network Strengthening Project aims to improve the health of the Guyanese population through increased access, quality, and efficiency of health services by improving health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals; by extending coverage of diagnostic, medical consultation, and patient management services, inclusive of the country's hinterlands, through digital health; and by increasing the efficiency of the public health system, by strengthening key logistic, management, and support processes and inputs. The project will target infrastructure improvement and expansion in three priority hospitals, namely the Georgetown Public Hospital Corporation, the New Amsterdam Hospital and the Linden Hospital Complex. Although the priorities for these hospitals were determined the final determinations on the exact project interventions are still to be made. These are three of the largest hospitals in Guyana, which are all located in townships.

The Project, according to the IDB's classification, is Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction, rehabilitation and operation of the healthcare facilities and associated infrastructure. The project is likely to cause mostly local and short-term negative environmental and associated social impacts for which effective mitigation measures are readily available. As such, it was determined that an ESA and ESMP framework be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation.

Category A projects have been excluded and environmental and social audits will be carried out prior to the start of any civil works for the facilities in operation. Site-specific ESAs/ESMPs will be developed as necessary for renovations of a substantial nature or for any new construction.

During the conduct of the ESA and preparation of the ESMP, key project details emerged, including the hospitals to be targeted under the project, and some of the likely interventions at each of these facilities, based on their current priority needs. These were taken on board in the conduct of the ESA to provide a better analysis and understanding of the potential impacts of the project.

This ESA and ESMP framework assessed the potential impacts of project activities across the various components of the project. Most of the impacts will occur during the construction phase and are short term, localized, and are low to medium risks. Most of the direct impacts will occur within the hospital environment itself. Impacts relating to the wider community are mainly related to the disruption of services at the hospitals during the construction period. Only one High Risk was identified and this relates to the disruption of services. Importantly, no Critical Risks were identified to be associated with pre-mitigation impacts of the project.

Although the project scope is not yet finalized, a comprehensive ESMP was prepared which outlines measures to be implemented during the planning, construction and operational phases of the project to mitigate and manage the ESHS risks. In addition, measures to maximise the positive impacts of the project were also identified. An implementation framework to guide the implementation of the ESMP was also prepared, inclusive of a Stakeholder Engagement Plan and a Grievance Mechanism. Further, provisions have been made and guidance provided for detailed management measures to be determined and implemented during the pre-construction and construction phases and as part of the CESMP.

Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential project impacts are prevented or reduced. Importantly, the contractors should prepare the CESMPs and the implementation of this plan should be stringently monitored by the MoH. In addition, the management and staff of the hospitals

should evaluate the works to be conducted and develop a comprehensive approach to ensure the safety of patients, visitors and hospital staff. The relevant stakeholders should be kept informed of the project and allowed the opportunity to provide feedback and recommendations. This is especially important within the hospitals setting. The mechanism to address project level and worker grievances should also be implemented.

Once the recommended measures are implemented during the project execution it is envisaged that any potential adverse impacts will be prevented or reduced, thereby enabling the project to positively benefit the environment and the community. Implementation of the project will contribute positively to the improvement of health care delivery in Guyana, especially in the regions within which the hospitals are located. As such, the project has been welcomed by all stakeholders engaged during the ESA and ESMP preparation process.

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APPENDICES

Appendix A – Terms of Reference for the Consultancy



Terms of Reference Annex A

Consultancy to prepare ESMS and Regional ESA/ESMP Framework

Background of this search:

The Social Protection and Health Division (SCL/SPH) of the IDB is seeking a consultant to support the preparation of an Environmental and Social Management System (ESMS), and Regional Environment and Social Assessment (ESA) and related Environmental and Social Management Plan (ESMP) using a framework approach for health facilities to be selected in Guyana, in the context of operation "Health Care Network Strengthening in Guyana" (GY-L1080).

The team's mission:

The Social Sector (SCL) is a multidisciplinary team convinced that investing in people is the way to improve lives and overcome the development challenges in Latin America and the Caribbean. Jointly with the countries in the region, the Social Sector formulates public policy solutions to reduce poverty and improve the delivery of education, work, social protection, and health services to citizens. The objective is to advance a more productive region, with equal opportunities for men and women, and greater inclusion of the most vulnerable groups. The Social Protection and Health Division (SPH) is tasked with the preparation and supervision of IDB operations in borrowing member countries in the areas of: (i) social protection (safety nets and transfers and services for social inclusion, which include early childhood development, youth programs, and care services, among others); (ii) health (health capital investment strategies, health networks strengthening, health system financing, and organization and performance, etc.); and (iii) nutrition.

What you'll do:

General and Specific Objectives

In accordance with the IDB's impact categorization process for Category B projects, an ESA must be carried out along with a corresponding Environmental and Social Management Plan (ESMP) that includes the most relevant actions, for all phases of the project. The IDB's new Environmental and Social Policy Framework (ESPF) and associated Environmental and Social Standards (ESPS) requires that all Borrowers develop and implement an Environmental and Social Management System (ESMS) to be established and maintained as appropriate *to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts*.

As such, the objective of this consultancy is to prepare, with support from the Executing Agency (EA), the ESMS and appropriate instruments of social and environmental management for compliance with the requirements set forth in the Bank's ESPF that includes ESPS 1 through 10.

The ESMS will be accompanied by the preparation of a Regional ESA and its ESMP for the project.

In keeping with ESPS 1 regarding the Assessment and Management of Environmental and Social Risks and Impacts the specific objectives are:

- i) To prepare the project's specific ESMS whose scope adheres to the management requirements set forth in ESPS 2, 3, 4, 5, 6, 7, 8, 9 and 10.
- ii) To prepare the Regional ESA and ESMP according to the scope set out in ESPS 1 and the identification, evaluation and mitigation hierarchy requirements set forth in ESPS 2, 3, 4, 5, 6, 7, 8 and 9 for the planned operation and the long-term operation of potential project sites.

- iii) To support the preparation and completion of a meaningful, gender sensitive and culturally adequate public consultation process with stakeholders on the project in general, in accordance with the provisions of ESPS 1 and 10.

The activities that the selected candidate will perform include, but are not limited to, the following:

1. Conduct data analysis and initial diagnosis as outlined under ESPS 1

- a. The consultant in close collaboration with the EA and the IDB will develop a working methodology detailing roles, responsibilities, and capacity of the EA. There will be coordination among all parties involved to determine appropriate times for visits and meetings as appropriate.
- b. Review relevant documentation, including documents from previous operations, applicable laws and regulations from Guyana, and the new IDB ESPF and ESPS.
- c. Complete initial scoping of the main impacts and risks relating to the possible substantial renovation and construction activities of Guyana's healthcare facilities using a framework approach (e.g., land clearing, site preparation, demolition, impacts on biodiversity, water demand, effects on surface and ground water, medical/hazardous and non-medical waste (including liquid and solid), labour management, gender, immigration, indigenous communities (Hinterland), and health and safety – including Covid-19 factors as applicable).
- d. Develop a methodology to provide an overview of the locations of potential sites under the project including a general physical description of these sites (e.g., health facilities in the various regions categorized as urban, peri-urban and Hinterland), and potential adjacent properties and local or associated facilities. The project description should include analysis of maps and historical land use and a description of the surrounding environments common in these areas. The description should also include the project objectives, rationale, background, timing, duration, layout, and the outline of potential renovation and construction plans including new associated facilities.
- e. Based on the methodology above, collection, analysis and interpretation of all data identified from reviewing existing documentation and initial scoping should be gathered to describe the existing environmental and social conditions, including for the biophysical, socio-economic and cultural context. This data should consider as relevant: soil, geology, landscape, land use, values (land, crop, etc.), hydrology, air quality, ground and surface water quality, quantity and availability, flora and fauna, socioeconomic and cultural information, natural hazards (earthquakes, hurricanes, floods, droughts), discharge characteristics, noise levels, existing contamination sources, and solid waste management. Particular attention should also be given to the existence of natural habitats and adjacent communities commonly or likely to be found in these areas.
- f. Describe policy, legislative, and regulatory requirements including those relating to international agreements, national requirements, and the IDB ESPF and applicable ESPSs.

2. Develop and finalize the ESMS

IDB's ESPF is oriented toward the systematic management of the project's environmental and social performance throughout its complete lifecycle. In ESPS 1 the Borrower is required to carry out this management, which is accomplished through an ESMS specific to the project, based on the cycle of planning, execution, verification and action. The consultant will be required to:

- a. Develop in continuous coordination with the EA, an ESMS that incorporates the following elements: (i) an environmental and social framework specific to the project, (ii) identification of risks and impacts, (iii) management programs, (iv) organizational training and competency, (v) preparation for and responses to emergency situations, (vi) participation of the stakeholders and (vii) monitoring and evaluation. The structure proposed for the ESMS, as well as its content and scope, is detailed in Annex 1. This will be first developed as a draft with an executive summary and outline of the 7 elements (pillars) followed by a final detailed ESMS for the Banks review and non-objection.
- b. Assure transfer of the basic knowledge required for the planning, implementation, EA verification and improvement of the ESMS specific to the project. For this purpose, the EA must be staffed with competent personnel and the authority and responsibility to collaborate in the planning of the ESMS and subsequent transfer.

3. Develop the regional ESA and prepare the associated ESMP

- a. Review of existing environmental and social assessments and study the current baseline situation on applicable environmental and social aspects including but not limited to pollution control, natural environment, land use, involuntary land acquisition, resettlement, and disaster and climate change risk. This should also include a characterization of the populations in the general areas (direct and indirect areas of influence) and identification of the presence of any vulnerable groups (e.g., IPs). Primary data collection should be conducted when secondary data is not available.
 - b. Preparation or completion of analysis of alternatives (including an alternative without project option which will be compared and evaluated against the selected option from technical, financial, and social and environmental impacts points of view) in a manner that guarantees compliance with the Bank's ESPF, and applicable legislation, thus guaranteeing the project's environmental and social sustainability.
 - c. Using a framework approach, capture, identify, assess and consolidate the potential impacts and risks and examine and identify the major potential environmental, social, labour, public health, and occupational safety issues of concern for renovation and construction activities (including Covid-19 factors as appropriate) along with any associated or auxiliary facilities. This should include as relevant, changes in water quantity, quality and availability, landscape impacts, noise generation, changes in species and natural features, habitat loss, changes in land use, contamination of water, air pollution, socio-economic and cultural change, displacement of people, loss of livelihoods, impacts on traffic, risks from natural hazards (flooding), dust generation, solid waste management (particularly medical/hazardous waste), and effluent and sewage treatment. Special attention must be paid to distinguishing negative and positive impacts along with indirect and cumulative impacts throughout renovation, construction, and operation of health facilities.
 - d. A simple qualitative Disaster Risk Assessment (DRA) should be included as part of the regional ESA framework to review potential disaster risks (Disaster Risk 1 and 2)
 - Type 1: When the project is likely to be exposed to natural hazards due to its geographic location.
 - Type 2: When the project has a potential to exacerbate hazard risk to human life, property, the environment, and the project itself.

The analysis should also consider meteorological data, disaster records, and climate change impacts.
 - e. Identify potential environmental impacts associated with the direct and indirect emissions of greenhouse gases (GHGs) and calculate gross GHG emissions for the project with the support of the Bank. Recommendations should be provided to encourage resource efficiency in the project design and for facilities in operation.
 - f. Analyze gender-differentiated impacts and the relevance of the gender perspective adopted by the project, including complementing or development of pertinent measures as part of a gender analysis. The assessment should also include measures to consider the incorporation of the principles of universal design and access in the project (i.e., health infrastructure that can be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design) which will take into account vulnerable groups such as people with disabilities.
 - g. Conduct a review and gap analysis of national standards and relevant laws/regulations in Guyana in comparison with the IDB's environmental and social criteria and procedures set forth in the ESPF (screening, environmental impact assessment, public participation, information disclosure, monitoring and others), and identify how any gaps will be addressed. The list of relevant local/regional permits and/or licenses required for the project should also be outlined with clear roles and responsibilities for this process and ensuring compliance.
 - h. Identification of stakeholders, participation plans and consultation processes which are necessary for compliance with national legislation and the IDB's ESPF, including the preparation of materials and reports that are adequate for these processes in coordination with the EA.
-
- i. Prepare a regional ESMP, which should include the mitigation measures proposed to manage the identified impacts, risks and remaining environmental liabilities using the mitigation hierarchy – these should be presented as plans, procedures, and guidelines consistent with the ESPSs that will result in

avoiding and minimizing impacts, or where impacts are unavoidable, the restoration and compensation for those impacts. The ESMP should incorporate plans to address occupational and community health and safety, traffic, noise, air (including GHG reduction), hazardous materials (particularly medical waste), water and wastewater, security, emergency preparedness and response, disaster risk, stakeholder engagement, and monitoring, and should cover all phases of the project. There should be section outline on the formulation of a resettlement or livelihood restoration plan and conducting the required specific consultation process in case these types of impacts should materialize during project preparation.

- j. Separate sections in the EMSP will be required – one for renovation/construction and one for operation.
- k. Assess the capacity of the EA and key stakeholders to take responsibility for implementation of the environmental and social management plan. It is essential for the consultants to coordinate closely with the EA and stakeholders involved in establishing the technical parameters and procedures that will be applied in the project.
- l. Define monitoring and evaluation strategies, a budget for these activities, and capacity building and training activities.
- m. Propose a set of indicators to measure the implementation of key elements of the ESMP framework.

The regional ESA and ESMP will include the requirements necessary to evaluate the potential impacts and risks resulting from the renovation, construction and operation phases of any individual projects and activities, after the project's approval and following the completion of an environmental audit for these facilities.

Specific to note, the framework should contain and outline the following elements with requirements for the renovation and construction of individual health facilities: (i) environmental/social selection and screening criteria, including exclusions to ensure that project works that the Bank would classify as category A in environmental impact are excluded; (ii) a site specific social and environmental assessment; (iii) consultation and stakeholder engagement specific to the site and scope of works; (iv) implementation, supervision and reporting arrangements for the resulting environmental and social requirements for each project;

The Bank will require the full development of the ESMS following the completion of the regional ESA and ESMP.

4. Consultation process:

The consultant will be required to carry out stakeholder engagement/consultation proportional to the project's risks and impacts. The EA in close collaboration with the consultant should therefore facilitate a consultation process consistent with ESPS 1 and 10. The draft regional ESA/ESMP framework should be made available as part of this process in a timely manner prior to consultation and finalization of this document. The consultation process should include, at a minimum:

- a. Stakeholder mapping and analysis to identify the directly affected project people, other stakeholders, and relevant organizations for consultation (municipal authorities, social organizations and, where appropriate, NGOs active in the project area).
- b. A Stakeholder Engagement Plan (SEP) and grievance redress mechanism based on the stakeholder analysis which must be prepared as part of the ESMS and captured in the regional ESA in accordance with ESPS 1 and ESPS 10. This should be disclosed in the relevant local languages in an accessible and culturally appropriate manner. As required under ESPS 10, the SEP should be completed as early as possible and prior to any consultations
- c. The results and processes for consultation, including a record of people consulted (list of attendees, contact addresses), date and location of consultation event (e.g., meetings, workshops), key comments received and summary minutes, should be included as part of the regional ESA in the form of a detailed consultation report. It should also be documented in this report, if and how comments received during the consultations were incorporated into the project design via the ESMS and regional ESA/ESMP to demonstrate that meaningful consultation has taken place. The consultation should take place with potentially affected persons and interested stakeholders identified from the stakeholder mapping/analysis and be widely announced/well-advertised with appropriate notice to encourage the participation/involvement of a diverse audience. Materials should be presented in public consultations in a manner that is accessible for local communities and will cover: (i) proposed project design and layout; (ii) summary of impacts and mitigation measures; (iii) overview of the applicable IDB ESPS; (iv) the scope

of the regional ESA; and (v) discussion of the grievance management mechanism. As relevant, consultations should take the risk of Covid-19 into account, and while following country requirements, virtual consultations or other suitable engagement mechanisms should be considered.

Deliverables and payment schedule:

- **Product 1:** The workplan for the consultancy, including proposed dates, mobilization strategy, stakeholder mapping, and timeline (expected one week after the beginning of the consultancy).
- **Product 2:** A draft of the ESMS with executive summary and section outline for the 7 pillars to meet Bank timelines for fit-for-disclosure versions of the ESA/ESMP framework. To be delivered within 20 calendar days of the signing of the contract.
- **Product 3:** Stakeholder analysis (including gender analysis), the SEP and grievance management mechanism for the implementation of the project as outlined under ESPS 1 and 10 (initial submission can be made five weeks after the beginning of the consultancy for review or submitted wholly as part of Product 4).
- **Product 4:** A Fit-for-disclosure version of the regional ESA/ESMP framework for potential renovation, construction and operation activities of the project, including identified impacts and proposed mitigation measures, disaster risk and mitigation, institutional capacity, and recommendation for implementation of the ESMP. Should there be a need for environmental clearances by Guyanese authorities for any of the proposed packages to be financed, the consultant will assist in the preparation of the information needed (expected 7 weeks after the beginning of the consultancy).
- **Product 5:** Final regional ESA/ESMP framework with consultation report (90 calendar days after contract initiation).
- **Product 6:** Final ESMS to be submitted within 180 calendar days following submission of the final ESA/ESMP framework or to meet project's timeline prior to first disbursement.

Deliverable	Payment (%)
Product 1 Workplan	10
Product 2 Draft ESMS	15
Product 3 Stakeholder analysis and Engagement Plan including project level grievance mechanism	15
Product 4 Fit-for-disclosure version of the regional ESA/ESMP framework (incorporating product 3)	25
Product 5 Final regional ESA/ESMP framework with Consultation report	15
Product 6 Final ESMS (incorporating product 3)	20

What you'll need:

- **Citizenship:** You are either a citizen of Guyana or a citizen of one of our 48-member countries.
- **Consanguinity:** You have no family members (up to fourth degree of consanguinity and second degree of affinity, including spouse) working at the IDB Group.
- **Education:** Master or equivalent in environmental management or similar area.

- **Experience:** At least 5 years; (i) experience in the preparation and implementation of ESA and ESMP, particularly in the health sector; (ii) familiarity with IDB or other MDB Safeguards Policies; and (iii) field experience in Guyana.
- **Language:** The consultant must be proficient in English.

Core and Technical Competencies:

- Good writing and presentation abilities. Experience facilitating meetings and coordinating groups. Good teamwork abilities.

Opportunity Summary:

- **Type and mode of contract:** Products and External Services Contractual (PEC), Lump Sum.
- **Term of contract:** 5 months.
- **Location:** Place of residency of the consultant.
- **Person responsible :** Ian Mac Arthur (SCL/SPH) and Jodi Johnson (ESG/CJA).
- **Requirements:** You must be a citizen of one of the 48 IADB member countries and have no family members currently working at the IADB Group.

Our culture:

Our people are committed and passionate about improving lives in Latin-America and the Caribbean, and they get to do what they love in a diverse, collaborative and stimulating work environment. We are the first Latin American and Caribbean development institution to be awarded the EDGE certification, recognizing our strong commitment to gender equality. As an employee you can be part of internal resource groups that connect our diverse community around common interests.

Because we are committed to providing equal opportunities in employment, we embrace all diversity and encourage women, the LGBTQ+ community, persons with disabilities, afro-descendants, and indigenous people to apply.

About us:

At the IDB, we're committed to improving lives. Since 1959, we've been a leading source of long-term financing for economic, social, and institutional development in Latin America and the Caribbean. We do more than lending though. We partner with our 48-member countries to provide Latin America and the Caribbean with cutting-edge research about relevant development issues, policy advice to inform their decisions, and technical assistance to improve the planning and execution of projects. For this, we need people who not only have the right skills but also are passionate about improving lives.

Our team in Human Resources carefully reviews all applications.

ANNEX 1: Environmental and Social Management System (ESMS)

The ESPF and the guidelines for each of the ESPS can be found at: <https://www.iadb.org/en/mpas/guidelines>.

This Annex provides indicative content of the deliverable that shall be adjusted proportional to E&S risks of the project and its scope.

ESPS 1 provides that an effective Environmental and Social Management System (ESMS) is a dynamic and continuous process, which sets in motion and supports the Borrower's project-related activities, and involves collaboration between the borrower, its workers, people affected by the project and, where appropriate, other stakeholders.

The ESMS will incorporate the following elements:

(i) Environmental and Social Framework Specific to the Project

In coordination with the Borrower, the consultant will prepare an environmental and social framework that is specific to the project, which will consist of a document that:

- sets forth the values, objectives, principles and goals that will guide the preparation and execution of the project, as well as its environmental and social performance.
- describes the general structure, processes and functions (roles and responsibilities) required for the environmental and social management of the project.
- presents in a concise manner the aspects of the country's normative, institutional and policy framework, including its executing national, sub-national or sectoral level institutions, and the applicable laws, regulations, rules and procedures that are pertinent to the project's environmental and social risks and impacts.
- is concordant with the ESPF's Environmental and Social Performance Standards.
- describes the Grievance Redress Mechanism for complaints and claims related to the project.
- Demonstrates the top management's commitment to the project's achieving of good environmental and social performance.
- can be disseminated and communicated at all relevant levels of its organization.

The minimum content of the Project's Specific Environmental and Social Framework (SESF) is listed as follows:

- Introduction
- Project description
- Objectives and Principles
- Legal and institutional framework
- Institutional training and competency
- Evaluation processes and socio-environmental management
- Participation of stakeholders and mechanism for addressing claims and complaints
- Preparing for and responding to emergencies
- Follow-up and monitoring

The Environmental and Social Framework must be a concise and effective document that provides a roadmap to guide the Project's different environmental and social processes and procedures. It should be written from a viewpoint of high level.

(ii) Identification of Risks and Impacts

Based on the Environmental and Social Assessment of the proposed project, the consultant will formulate a process to identify the Project's environmental and social risks and impacts. This process will be documented through a procedure that will integrate:

- Appropriate tools for the identification and assessment of the project's potential risks and impacts (analysis of alternatives, screening, scoping, environmental and social assessment, research, audits, interviews, specialized studies, consultation with experts).
- The identification of direct, indirect and cumulative¹ environmental and social risks and impacts, including the items identified in ESPS 2 through 10. ○ Project risks affecting Human Rights. ○ Risks and hazards of existing installations. ○ Risks and impacts of related installations.²
- Risks and impacts in the project's zone of influence that derive from the actions of third parties, to the extent of the control and influence that it exercises over them.
- Risks and impacts linked to principal suppliers.

(iii) Management Programs

The consultant will formulate management programs that describe the mitigation and performance improvement measures and actions aimed at addressing the environmental and social risks and impacts identified in the ESA. The consultant will establish environmental and social plans for each program, which define the results and actions that are sought to address the issues raised in the process of identifying risks and impacts.

The programs can consist of a documented combination of operating procedures, practices, plans, and supporting documents that are managed in a systematic manner.

The programs must conform to the mitigation hierarchy³ for addressing the identified risks and impacts: where residual impacts persist and to the extent that it is technically and financially feasible, the prevention of impacts will prevail over measures to minimize them, which, in turn, will prevail over compensation or compensatory measures.

In accordance with the provisions of ESPS 2, 3 and 4, the programs will incorporate the World Bank Group's recognized guidelines on the environment, health and safety.

The consultant will integrate guidelines for the environmental and social management of contractors in a manner that assures that this is initiated early in the project and that the process documents for the acquisition of goods and services describe the environmental and social performance that is expected in the carrying out of project activities and that they be a reference framework for the incorporation of environmental and social management costs into contractor proposals.

(iv) Organizational Skills and Competency

The consultant will support the Borrower in the process of defining functions, responsibilities, and capacities for the application of the ESMS.

The consultant will identify the knowledge, aptitudes, and experience, including updated knowledge of applicable regulatory requirements and applicable standards from ESPS 1 through 10, that are needed for the responsible parties to implement the ESMS in the carrying out of their work

¹ The project's incremental impact is obtained by combining the impacts of relevant past, ongoing, and reasonably foreseeable future developments, as well as unplanned but foreseeable project-driven activities that may be carried out later at another site.

² New or additional works or infrastructure, regardless of the source of financing, that are essential to the functioning of a Bank-financed project, such as the following: access roads, railway lines, power lines or pipelines, etc.

³ The mitigation hierarchy represents a structured and systematic approach that takes into account the project's social and environmental risks and impacts and includes the following steps: (a) anticipate and avoid risks and impacts, (b) minimize risks and impacts that cannot be avoided, (c) remedy or mitigate residual impacts to an acceptable level, (d) compensate for, or offset, those residual risks that cannot be remedied or mitigated at an acceptable level.

(v) Preparing for and responding to Emergency Situations

The consultant will develop a system for preparing for and responding to emergency situations so that the borrower is able to respond in an adequate manner to accident and emergency situations related to the project, in order to prevent and mitigate any damage to people or the environment.

The system must be aligned with the requirements set forth in ESPS 2 and 4.

(vi) Monitoring and Evaluation

The consultant will develop procedures to allow the Borrower:

- To monitor the management program and measure its effectiveness, as well as its compliance with all legal or contractual and related regulatory requirements.

- To record information for the purpose of monitoring performance and establishing relevant operational controls.
- To plan periodic assessments of the effectiveness of the ESMS, based on a systematic collection and analysis of relevant information.

(vii) Participation of Stakeholders

The participation of the stakeholders is fundamental to the establishment of solid, constructive and receptive relationships, which are essential for the effective management of the project's social and environmental impacts.

The consultant will develop procedures to allow the Borrower to plan and implement a continuous process of participation involving the stakeholders that may include the following elements: analysis of the stakeholders and related planning, disclosure and dissemination of information, inquiries and participation, grievance redress mechanisms and the constant supply of information to persons affected by the project and other stakeholders.

The process must accord with the requirements set forth in ESPS 2 through 10.

ANNEX 2: Environmental and Social Assessment / Environmental and Social Management Plan (ESA / ESMP)



This Annex provides indicative content of the deliverable that shall be adjusted proportional to E&S risk of the project and its scope.

Development of the ESA

The **ESA** shall include, at a minimum:

1. Executive summary

The ESA's contents shall be presented in an executive summary that is easy to interpret and representative of the information that is most important to the development of the document. In a general manner, it will present, among other issues and without limitation:

- (i) general and specific objectives, including a brief description of the principal environmental and social impacts, both positive or negative, that have been identified during the construction, operations, closing and postclosing phases;
- (ii) the most relevant necessary actions of mitigation, control and prevention for all phases of the project and their relation to the IDB's ESPF and ESPS
- (iii) recommendations for the improvement of the environmental and social management of the Project's works during all of their phases; and
- (iv) general conclusions and recommendations for the study; among other items of information that are determined to be important.

The executive summary shall not exceed 10 pages.

2. Introduction and Background

This Section shall contain the background and scope of the operation, also including a description of the necessity of the Project in the context of local and national situations and strategies, as well as the effect that it will generate in terms of environmental and social development. Additionally, it is important that this portion of the document includes a brief general description of the different sections and/or chapters contained in the ESA.

3. Project Description

This section details the activities, processes and milestones for each of the construction, operation, closing and post-closing phases for each of the works that are included in the Project.

Based on already-existing designs and profiles, this section will describe alternatives that have been considered prior to the selection of the definitive proposal. Multiple alternatives, including an alternative without project, will be qualitatively and quantitatively (where applicable) examined from an environmental and social costs and benefits point of view. This analysis must be conducted in close harmony with the economic, financial, institutional, social, and technical aspects of projects. It will include the applicable analysis of alternatives for the works. The EA will provide all the information necessary for the documentation of the analysis of alternatives.

4. Regulatory Framework

This section will be a summary and reference to the Regulatory Framework section portion of the document that relates to the ESA.

of the

This will include a description of national laws, international conventions, as well as the regulations applicable to the Project. It will identify the institutions, from their respective levels of government, that are responsible for the project's execution and environmental and social management, as well as the roles and functions of each of these institutions, including an analysis of the institutional capacity of the EA, and, where necessary, will detail the needs for institutional improvement, in order to comply with the ESPF.

It should also include a description of the requirements for an environmental permit and other authorizations that are necessary for each phase of the Project.

5. Socioenvironmental assessment and characterization of the area of influence and beneficiaries

In general, this section should contain a description of the current socio-environmental conditions of the project area, defining the boundaries of the Area of Direct Influence (ADI) as well as those of the Area of Indirect Influence (AII).

The characterization shall be based on quantitative and qualitative data derived from primary and secondary information (including field visits and analytical campaigns) addressing issues such as: (i) geology, geomorphology, edaphology and soil quality; (ii) climatology; (iii) air, noise, vibration and odor; (v) water quality (surface water and groundwater); (v) natural biodiversity and/or modified or critical habitats (following the provisions of IDB's ESPS 6) and threatened species (flora and fauna), protected areas and natural parks (protected natural areas, sensitive ecosystems and important areas of international importance (e.g. IBAs, RAMSAR wetlands, KBAs, AZEs, etc.), and visual and aesthetic / landscape resources; (vi) protected natural areas and cultural sites; (viii) natural hazards presented in the ADI and the AII. This shall include maps and figures at an appropriate scale.

The social characterization will include demographic, economic, and cultural data, taking into consideration: (i) demographic conditions such as age and gender in the beneficiary population; (ii) socio-cultural conditions such as ethnic distribution (including indigenous and Afro-descendant communities), (iii) the presence of vulnerable or minority groups including sexual and gender minorities, (iv) spoken languages, nationalities or other relevant key cultural aspects; (v) the characterization of socio-economic conditions such as economic sectors, formal and informal employment, and land tenure; (vi) land use; (vii) information on archaeological resources (discoveries) and historical resources, places of cultural and spiritual interest (tangible and intangible), practices and vulnerabilities; (viii) an analysis of the use of natural resources and ecosystem services by different groups and communities; (ix) a mapping of key institutional and social actors present in the area of influence and other Project stakeholders, including social and environmental organizations at the local and national level; and (x) an analysis of existing consultation and community participation mechanisms. This shall include maps and figures at an appropriate scale.

6. Assessment of impacts and risks

In general, this section of the report will focus on the identification and characterization of the potential environmental, social and occupational health and safety impacts and risks of the project (distinguishing between direct, indirect and cumulative), both negative and positive, as well as the influence of climate change and disaster risks for the construction, operation, closure, and post-closure stages, using methodologies such as overlapping thematic maps, matrix evaluation and work by interdisciplinary groups, and will be in accordance with good international practices in the corresponding sector. The description of the environmental impacts must consider, as a minimum:

(i) Requirements of ESPS 1: Assessment and Management of Environmental and Social Risks and Impacts

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- The scope and level of effort dedicated to the process of identifying risks and impacts will be in accordance with the type, size and location of the Project. The scope of this process will be determined through the application of the mitigation hierarchy.
- The risk and impact identification process will be based on recent baseline data derived from environmental and social factors, with an appropriate level of detail.

This section will identify the project's risks or negative impacts that fall disproportionately on individuals and groups that, due to their particular circumstances, are in a vulnerable position.
- Identification of impacts due to the existence of prejudice or discrimination against people who are vulnerable or disadvantaged in terms of access to the Project's benefits.
- Identification of impacts related to the health, safety and well-being of the workers and communities affected by the project, including risks related to pandemics, epidemics and communicable diseases.
- Greenhouse gas emissions.
- Identification of natural hazards and risks and climate change factors related to or exacerbated by the Project, taking into account the expected frequency, duration and intensity of the phenomena in the project's geographical area and the infrastructure's level of criticality.
- Possible transboundary impacts. ○ Impacts on community safety (safety of the project infrastructure, threats to human safety due to risks of escalation of personal or community conflicts and violence that the project could provoke or aggravate). ○ Impacts related to the possession and use of land and natural resources, land acquisition, physical resettlement and/or economic displacement (including classification of the type and degree of impact).
- Risks or threats to the protection, conservation, maintenance and restoration of natural habitats and biodiversity (flora and fauna). ○ Risks or effects on ecosystem services, including those related to watershed management.
- Impacts on Indigenous Peoples. ○ Risks to cultural heritage. ○ Risks of gender exclusion and violence, sexual exploitation, human trafficking and the spread of sexually transmitted diseases.

(ii) Requirements of ESPS 2: Labor and Working Conditions

- Identify any risk of child or forced labor in the project area of influence and develop measures in accordance with the ESPS.
- Identify and assess inherent risks related to the project and specific classes of hazards, including physical, chemical, biological, and radiological hazards, and specific threats to women, people of diverse sexual orientations and gender identities, persons with disabilities, children (of working age), and migrant workers in accordance with this and any other applicable ESPS.
- Identification of potential hazards to workers, particularly those that may be life-threatening in a manner consistent with good international industry practice, as reflected in various internationally recognized sources including the World Bank Group Environmental, Health and Safety Guidelines.

(iii) Requirements of ESPS 3: Resource Efficiency and Pollution

- Identify hazards, impacts and risks associated with the nature of the project in relationship with: (i) consumption of energy, water and other resources and material inputs, (ii) GHG emissions, (iii) release of pollutants to air, water and land due to routine, non-routine and accidental circumstances, (iv) generation of hazardous and non-hazardous waste materials, (v) use of hazardous materials, (vi) use of chemical pesticides

(iv) Requirements of ESPS 4: Community Health and Safety

- This subsection shall identify specific risks that could pose adverse effects on the health, safety, and wellbeing of people with sensitivities related to age, gender, disability, or short-term or long-term health conditions; if necessary, a more detailed risk assessment shall be carried out.
- Perform a simplified qualitative risk assessment to assess the project's level of exposure to natural hazards, its vulnerability and criticality to determine the potential impacts of disaster and climate change risks to the

project and to third parties. To perform this assessment please follow the Step 3 Disaster and Climate Change Risk Assessment Methodology for IDB Projects⁴.



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⁴ Available here: <https://publications.iadb.org/en/disaster-and-climate-change-risk-assessment-methodology-idb-projects-technicalreference-document>

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The project's potential direct, indirect and cumulative risks on priority ecosystem services, which may be exacerbated by natural hazards and climate change and may generate risks and adverse impacts for the health and safety of people, will also be identified (See ESPS 6).

- With respect to employees or contractors being hired to provide security to personnel or property, the risks that their security arrangements may imply for those inside or outside the project site will be evaluated.

(v) Requirements of ESPS 5: Land Acquisition and Involuntary Resettlement

- Identify, when necessary, feasible alternative project designs to avoid or minimize physical and/or economic displacement, while balancing environmental, social, and financial costs and benefits, paying particular attention to impacts on the poor and vulnerable.
- Identify any possible impacts or risks of (i) project-related land acquisition, (ii) resettlement of project-affected people, (iii) physical or economical displacement
- Where involuntary resettlement is anticipated as unavoidable, either as a result of a negotiated settlement or expropriation, a census needs to be carried out to collect appropriate socioeconomic baseline data to identify people who will be displaced by the project, determine who will be eligible for compensation and assistance.

(vi) Requirements of ESPS 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

- The Project's direct, indirect and cumulative impacts on biodiversity and ecosystem services should be taken into account, and any significant residual impacts identified.
- The identification and assessment process will take into account relevant threats to biodiversity and ecosystem services, with a special emphasis on habitat destruction, degradation and fragmentation, invasive alien species, overexploitation, hydrological changes, nutrient loading and pollution.
- It will also take into account the different values attributed to biodiversity and ecosystem services by people who may be potentially affected by the Project and, where appropriate, other stakeholders.
- If an adverse impact on ecosystem services is identified, a systematic review will be carried out to identify priority ecosystem services.
- Identify any project components that could be undertaken inside protected areas that are specifically designated by laws or ordinances for the conservation of nature and determine if: (i) feasible alternatives have been considered, (ii) the development is legally acceptable and in compliance with local regulations, (iii) a consensus needs to be made with stakeholders including organizations responsible for managing the protected area and (iv) additional programs need to be performed to ensure that the protected areas are effectively managed for its conservation

(vii) Requirements of ESPS 7: Indigenous Peoples

- With regard to each of the communities of Indigenous Peoples that may be located in the Project's area of influence and who may be affected by it, a process of assessing social and environmental risks and impacts, as well as the nature and magnitude of the direct, indirect and cumulative economic, social, cultural (including cultural heritage) and environmental impacts anticipated for these peoples, shall be completed and carried out in a culturally appropriate manner.

(viii) Requirements of ESPS 8: Cultural Heritage

- Identify risks and impacts related to tangible and intangible cultural heritage
- Identify the areas that have cultural and archeological value within the area of the project (formally protected or not).
- This identification should include secondary data and as well primary, which is of particular importance when there is cultural heritage not formally recognized.

(ix) Requirements of ESPS 9: Gender Equality

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- For the gender analysis under ESPS 9, whose objective is to identify, prevent, mitigate and/or compensate for the risks and adverse impacts that may disproportionately affect women and sexual minorities (LGBTQI+ people), it will be necessary to apply a differentiated gender outlook. Depending on the risks identified, the gender analysis may require a stand-alone document.
- The requirements related to ESPS 5 (Land Acquisition and Involuntary Resettlement) should also be considered in all cases involving the possibility of involuntary physical resettlement or economic displacement. This may include the following: (i) internal analyses of households to identify gender differences in sources of livelihood, including informal sources; (ii) an analysis of women's rights in relation to land and its use, including co-ownership and use rights related to communal lands and other assets; and (iii) an analysis of the impact of resettlement on women's ability to work.

(x) Requirements of ESPS 10: Participation of Stakeholders Information Disclosure

- Stakeholders, including both people affected by the project and other parties who, due to their circumstances, may have disadvantages or vulnerabilities related to the project, should be identified and documented.
- Documented records of stakeholder engagement should include a description of the stakeholders consulted, a summary of the feedback received, and a brief explanation of how the feedback was taken into account.

7. Conclusions and Recommendations

The ESA shall present a conclusion on the environmental and social viability of the project, identifying the main impacts and risks and highlighting the most important issues to be incorporated into the corresponding Environmental and Social Management Plans (ESMP) as well as opportunities for the Project's improvement, with a view to reducing the impacts that have been identified and that can be discussed in the course of developing its components.

Development of the ESMP

For the works in the Project an Environmental and Social Management Plan (ESMP) must be prepared, which contains the specific environmental management measures that are necessary in light of the completed ESA and that may contribute to the potentiation of positive impacts and avoid, reduce, mitigate and/or offset negative impacts in accordance with the mitigation hierarchy. A clear relationship must be established between works in the Project potential risks and impacts, the proposed mitigation measures and applicable ESPS from the IDB.

This Plan will also contain all the necessary guidelines to direct the environmental, labor, social management and occupational health and safety of the Project, including, but not limited to: (i) the different environmental and social plans or programs that will comply with the environmental, social, labor and health and safety requirements that are necessary to carry out the activities of the project's works in compliance with the policies and regulations of both the IDB, and the national government, (ii) obligations and institutional responsibilities for the preparation and implementation of the required measures, (iii) a description of the environmental and social monitoring plan for the project's construction, operation, closure and post-closure stages, identifying the expected results, the parameters to be measured, the places of measurement, the methods and tools used (including monitoring templates) and the periods / frequency in which the measurements will be made, costs, and responsible institutions, (iv) an implementation schedule for each of the proposed measures, a definition of responsibilities and the preparation of a reference budget.

Specifically, the ESMP shall consider, at a minimum:

- (i) Requirements of ESPS 1: Assessment and Management of Environmental and Social Risks and Impacts
 - The mitigation and performance improvement measures, as well as actions aimed at addressing the environmental and social risks and impacts that have been identified in the project, shall be described.

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- There shall be a definition of Plans or Programs that may consist of a documented combination of operating procedures, practices, plans and related supporting documents (including legal agreements) that are managed in a systematic way.
- For the execution of the Project, the breadth of these Programs will encompass the Borrower's entire organizational structure, including the main contractors and suppliers, or specific places, facilities or activities, over which the organization has control or influence.
 - The Programs will take into account the results of the process of interaction with the people affected by the Project and other relevant stakeholders.
 - The mitigation hierarchy shall be taken into account in addressing identified risks and impacts, so that, where residual impacts persist and where technically and financially feasible, the prevention of impacts will prevail over measures to minimize them, which, in turn, will prevail over compensation or compensatory measures.
 - The mitigation and performance measures and relevant actions must be designed to ensure that the Project operates in accordance with applicable laws and regulations and meets the requirements of ESPS 1 through 10.
 - Environmental and social action plans (general or thematic) will be established, which will define results and actions that are sought to address the issues raised in the risk and impact identification process.
 - In view of the dynamic nature of the project, the Management Program must be able to react to changes in circumstances, unforeseen events and the results of monitoring and evaluation activities.
 - Procedures must be established to monitor the Management Program and measure its effectiveness, as well as its compliance with all legal or contractual obligations and related regulatory requirements.
 - Prepare and execute a stakeholder participation plan, in accordance with the Project's risks and impacts, that is adapted to the characteristics and interests of the people affected by the Project and other relevant stakeholders.
 - Shall be included a meaningful consultation and participation process commensurate with the project's risks and adverse impacts and the concerns of people affected by it as well as other stakeholders.
 - A grievance redress mechanism adapted to the Project's risks and adverse impacts will be designed, to receive concerns and complaints related to its environmental and social performance and to facilitate their resolution.

(ii) Requirements of ESPS 2: Work and Working Conditions

- Measures shall be included (e.g., an Occupational Health and Safety Plan) to prevent accidents, injuries and illnesses that may arise from, be associated with, or occur during work, reducing to a minimum, as far as reasonably practicable, the causes of factors that contribute to danger in the workplace. In the case of pandemics or epidemics, health and safety measures and protocols at work must be developed and applied to protect Project workers from the risk of exposure.
- The measures will include the elimination, substitution or modification of dangerous conditions or substances; the training of workers and the keeping of related training records; the documentation and reporting of occupational accidents, injuries, illnesses, and incidents; arrangements for emergency prevention, preparedness, and response; processes to report unsafe or unhealthy work situations, as well as mechanisms to evaluate performance in terms of occupational health and safety.

(iii) Requirements of ESPS 3: Efficiency in the Use of Resources and the Prevention of Contamination

- Technically and financially feasible measures (e.g., plan for the management of solid and liquid waste, emissions of pollutant including noise, vibration and odor, and other relevant environmental aspects) will be considered within the Project's activities, to optimize the consumption of energy, water and other resources and inputs and to avoid or minimize greenhouse gas emissions.
- Consideration of measures to avoid or reduce the emission of pollutants into the air, surface or ground water or soil, as well as responses to related accidental situations.
- Consideration of measures to reduce, recover and reuse waste in a manner that is safe for health and the environment.

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- Consideration of measures for treating, destroying or disposing of waste (hazardous and non-hazardous) in an environmentally friendly manner.
Consideration of measures for the handling of hazardous materials (including pesticides), including the use of substitutes or less dangerous practices.
- Regular monitoring of measures and actual measurement monitoring for pollutant are required.

(iv) Requirements of ESPS 4: Community Health and Safety

- Prevention and control measures will be established in accordance with good international practices, to prevent risks and impacts relating to the health and safety of the community.
- Measures to prevent the community from being exposed to hazardous materials and substances that the Project may generate.
- Measures to avoid or minimize community exposure to diseases transmitted by water, vectors and contagious diseases that may be due to the arrival of temporary or permanent workers.
- Measures shall be included that address preparations for and responses to emergencies, which considering the people affected, local government agencies and other relevant parties, for their protection as well as for their participation and collaboration.
- Determination of adequate measures to reduce vulnerability and foster adaptation to natural hazards and climate change, whose scope will include hard and soft measures to be implemented in the design, construction, and operation stages of the project. These measures will be part of the Disaster and Climate Change Management Plan, following the IDB's Methodology⁵.

(v) Requirements of ESPS 5: Land Acquisition and Involuntary Resettlement

- Consideration of viable alternative designs for the Project that would avoid or minimize physical or economic displacement, weighing the environmental, social and financial costs and benefits, with special attention to the impacts on poor and vulnerable groups.
- In the event that displacement cannot be avoided, and for all persons affected by the project, indemnification measures or rules shall be considered in a uniform manner in compliance with ESPF.
- Development of a Resettlement or Livelihood Restoration Plan, in accordance with the requirements of this ESPS.
- Regular monitoring of Resettlement and/or Livelihood Restoration Plan is required.

(vi) Requirements of ESPS 6: Conservation of Biodiversity and Sustainable Management of Living Natural Resources

- When impacts on biodiversity and ecosystem services cannot be avoided, measures should be defined to minimize them and to restore biodiversity and ecosystem services in the long term by adopting adaptive management practices that respond to changes and the results of monitoring.
- For the protection and conservation of biodiversity, the mitigation hierarchy should include equivalent biodiversity compensation measures, which can only be considered once adequate prevention, minimization and restoration measures have been applied. These equivalent biodiversity offset measures must be designed and implemented in such a way as to achieve quantifiable conservation results that do not generate any net loss and preferably result in a net increase in biodiversity. These measures will not be acceptable for habitats defined as critical under this ESPS.
- For critical habitats (where the Project has met the requirements of this Standard), mitigation strategies will be considered through a Biodiversity Action Plan aimed at achieving net increases in biodiversity measures.
- For non-critical habitats, consideration will be given for measures such as: (i) the prevention of impacts on biodiversity through the identification and protection of reserve areas; (ii) minimization of habitat

⁵ See Section 5.2.3 Analyzing the results of the assessment and developing a disaster management plan and Appendix G for Risk mitigation options. Available here: <https://publications.iadb.org/en/disaster-and-climate-change-risk-assessment-methodology-idbprojects-technical-reference-document>

- fragmentation by implementing measures such as biological corridors; (iii) restoration during and/or after operations.
- Impacts on ecosystem services should be avoided or minimized through measures aimed at maintaining the value and functionality of priority services and increasing the efficiency of their operational use.



habitat

Regular monitoring of measures and actual measurement monitoring are required.

(vii) Requirements of ESPS 7: Indigenous Peoples

- Whenever possible, adverse impacts on the communities of Indigenous Peoples affected by the Project should be avoided. When, having explored alternatives, it is not possible to avoid adverse impacts, measures must be designed to minimize or provide restoration or compensation for such impacts in a culturally appropriate manner and proportional to the nature and size of the impacts and the vulnerability of the communities of Indigenous Peoples affected by the Project. ○ The proposed measures will be developed together with the consultation and informed participation of said communities, with consideration for a Plan for Indigenous Peoples.
- There must be a process of interaction with the communities of Indigenous Peoples affected by the project, as required by ESPS 1 and 10.
- The free, prior and informed consent of the communities of Indigenous Peoples affected by the project must be obtained in the circumstances set forth in this ESPS, and the pertinent mitigation measures applied. Free, prior informed consent will be applied to the design and execution of the project and to the expected results in relation to impacts that affect the communities of Indigenous Peoples.

(viii) Requirements of ESPS 8: Cultural Heritage

- Provisions must be taken into account to address chance discoveries through a specific procedure.
- Measures should be considered in accordance with the hierarchy proposed in this ESPS for the mitigation of adverse effects during the removal of reproducible (non-critical) cultural heritage items, should they exist in the Project area. ○ Measures should be taken to avoid removing, altering or damaging any critical or irreproducible cultural heritage item.

(ix) Requirements of ESPS 9: Gender Equality

- Measures should be designed to (i) avoid, minimize or mitigate identified negative impacts, or provide compensation in this regard through mechanisms that promote gender equality and (ii) ensure that people of different genders who may be affected by the Project, including women and people of diverse sexual and gender identities, receive social and economic benefits equal to those received by other members of the community, thus avoiding the reinforcement of gender inequalities.
- Measures will also be considered to prevent risks of sexual and gender-based violence related to the Project, including specific policies for contractors regarding sexual harassment and codes of conduct, workshops and awareness campaigns for both workers and contractors and for the communities where the project is developed, etc.
- Design effective grievance redress mechanisms that minimize the reporting burden for victims, offer gender-sensitive services, and minimize the risk of retaliation. These mechanisms must contain specific procedures for addressing sexual and gender-based violence, including confidential reporting through persons trained in the area, with secure and ethical documentation.
- Measures will be incorporated to prevent the risk of sexual exploitation or abuse of minors.

(x) Requirements of ESPS 10: Participation of Stakeholders and Information Disclosure

- The stakeholder engagement plan will describe measures that will be implemented to remove barriers to participation and to capture views of groups that are affected by the project in different ways.

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- The Borrower will carry out a process, in accordance with ESPS 1 and ESPS 10, of consultation and informed participation. In the case of projects that produce adverse impacts on Indigenous Peoples, the Borrower shall carry out a process of consultation and informed participation and, in certain circumstances, will have to obtain their free, prior and informed consent, in accordance with ESPS 1 and 7. In case of resettlement there should be a specific process with those potentially affected by these impacts.
- A grievance redress mechanism will be proposed to receive concerns and complaints and facilitate their resolution. This mechanism may also serve as a means of compliance with the requirements of ESPS 5



and 7. However, the grievance redress mechanism for project workers, required under ESPS 2, will be established as separate.

Appendix B – Additional Information on Stakeholders Engagement

Guyana Public Hospital Corporation (GPHC)

The following persons were engaged on July 21, 2022, during the conduct of the ESA:

1. Mr Robbie R. Rambarran, Chief Executive Officer
2. Ms Erwinetta Austin, Manager, Quality Improvement Department
3. Mr Ravindra Deonaraine, Director of Facility Management
4. Mr Gerron Parker, Head of Expenditure and Planning
5. Ms Chelauna Providence, Manager of Strategic Planning and Communications
6. Mr Christopher Martin France, Quality Improvement Officer
7. Mr Josey Ashay, Quality Improvement Officer
8. Ms Iona E. Cadogan, Occupational, Safety, and Health Officer
9. Mr Amarnauth Y. Maraj, Occupational, Safety, and Health Officer



Engagement with the GPHC Management Team



Engagement with GPHC Staff and Assessment of the Proposed Sites for Expansion

New Amsterdam Regional Hospital (NARH)

The following persons were engaged on July 05, 2022, during the conduct of the ESA:

1. Dr Bob Ramnauth, Chief Executive Officer
2. Dr Mahindra Rampersaud, Medical Superintendent and Surgeon
3. Mr Hemchand Jhagroo, Head of Department, Accident and Emergency
4. Ms Ashley Barakat, Environmental and Social Specialist, Ministry of Health



Engagement with NARH Management Team



Assessment of the NARH Facilities and Grounds

Linden Hospital Complex (LHC)

The following persons were engaged on July 06, 2022, during the conduct of the ESA:

1. Mr Rudolph Small, Chief Executive Officer
2. Ms Sharon Joseph, Occupational Safety and Health Officer
3. Mr Enoch Hooper, Maintenance Superintendent
4. Ms Ashley Barakat, Environmental and Social Specialist, Ministry of Health

The following persons were engaged virtually on July 11, 2022:

1. Ms Annette Jones, Matron
2. Ms Doneete Gullin, Head of Linden Hospital Day Care Centre



Engagement with LHC Management Team



Assessment of the LHC Facilities and Grounds

Appendix C – Engagement with the Ministry of Health

Date: May 24, 2022

Re: Engagement with Ministry of Health for Health Care Network Strengthening in Guyana (GY-L1080).

Participants:

Ministry of Health

- I. Dr. Leslie Ramsammy, Adviser to the Minister of Health
- II. Ms. Ashley Barakat, Environmental and Social Specialist

Consultant's Team

- I. Mr. Shyam Nokta
- II. Mr. Khalid Alladin
- III. Ms. Guneshwari Preiya Methuram

Summary:

The Consultant's team and the Ministry of Health (MoH) met on Tuesday May 24, 2022 to discuss the Health Care Network Strengthening in Guyana Project (GY-L1080) which is being supported by the Inter-American Development Bank (IDB) and which is targeting the Georgetown Public Hospital Corporation (GPHC), the New Amsterdam Regional Hospital (NARH), and Linden Hospital Complex (LHC). The objectives of the project was discussed, as well as the expectations and scope of the sub-projects. The discussion was centered on understanding the existing policies, laws and regulations, infrastructure and the immediate needs of the facilities.

Dr. Ramsammy discussed the current situation regarding the facilities to be assessed. In his discussion he noted the following:

- I. There is an existing 2016 IDB loan with the MoH for Maternal and Child Health in Regions 3, 4, and 9. Dr. Hamilton and Ms. Sonya Roberts were involved in the Maternal and Child Health 2016 Project.
- II. As an addition, an environmental and health assessment may have been conducted during the loan period for GPHC to determine the intervention needed. In particular, to eliminate the incinerators used at the health facilities and replaced it with a hydroclave system. The hydroclave system was installed and is operational at the GPHC. However, it is not functioning as required due to maintenance issues. Linden and New Amsterdam Hospitals continue to use incinerators.
- III. There are two approaches to wastewater management at GPHC. In the general wards, wastewater goes directly to the sewer, and in other areas, the wastewater is treated before discharged into the sewer. The New Amsterdam and Linden hospitals do not have a wastewater management plan.

- IV. The MoH has Health Facilities Licensing Regulation that governs all health facilities including private hospitals, labs, and polyclinics. The types of licensing are provisional and full. The provisional licensing gives the health facilities permission to operate on the basis that shortcomings will be corrected before the next licensing cycle, and the full licensing is issued when all the requirements are met.

For new facilities, the licensing process includes submitting a proposal for consideration by the Minister of Health. The Minister/MoH reserve the right to deny the application. For existing health facilities, there is an initial inspection period for feedback to the health facility, and a compliance period. After this process is completed, the provisional or full license is granted.

GPHC licensing status is to be determined. However partial inspections were done at GPHC and the New Amsterdam Regional Hospital. The Linden Hospital has completed the self-inspection.

- V. There are some existing documents on the environmental health at GPHC, such as wastewater management plan, disaster preparedness plan, a health and safety plan, and other standard operating procedures. While these might not be formal plans, there is some documentation on their operation.
- VI. As a result of the ad hoc nature of the development of the hospital complexes, there are design deficiencies in the existing infrastructure. Some limitations include design and construction of the operations theater and wards. There is also a build-up of derelict equipment that may have harmful implications on the health of patients and environment.
- VII. There was commitment that further engagements, such as meetings and visits to the project sites will be facilitated through Dr. Ramsammy's office.

-END-

Date: July 26, 2022

Re: Second Engagement between the Consultant and the Ministry of Health on the Health Care Network Strengthening in Guyana (GY-L1080).

Participants:

Ministry of Health

- III. Dr. Leslie Ramsammy, Advisor to the Minister of Health
- IV. Ms. Ashley Barakat, Environmental and Social Specialist

Consultants Team

- IV. Mr. Shyam Nokta
- V. Mr. Khalid Alladin
- VI. Ms. Guneshwari Preiya Methuram

Summary:

A meeting was held with officials of the Ministry of Health on Tuesday, July 26, 2022 to discuss matters pertaining to the IDB Project Health Care Network Strengthening in Guyana (GY-L1080), and to determine some specific actions regarding the implementation of the project. The following points were discussed:

1. Dr. Ramsammy explained that the project (GY-L1080) is part of a wider framework of initiatives aimed at transforming the health sector and to bring the public health facilities up to standard. This will include three components: (1) infrastructural upgrade, (2) digital upgrades, and (3) improvement in the provision of services. Component One of the project will focus on the infrastructural upgrades of three hospitals. These are the Georgetown Public Hospital Corporation, the Linden Hospital Complex, and New Amsterdam Regional Hospital. The infrastructural aspect of this project covers just about 10% of the infrastructure to be constructed under the Ministry' health improvement initiative. The MoH is pursuing support from the IDB for a much larger project.
2. As it regards project implementation, Dr. Ramsammy noted that the project will be implemented by the Health Sector Development Unit (HSDU) of the MoH. The HSDU is the project implementation unit of the MoH and is responsible for the execution and implementation of all projects funded by external institutions such as the IDB, World Bank, and Global Fund. Dr. Ramsammy currently heads the HSDU. The permanent staff complement of the HSDU consists of an Environmental and Social Specialist, Finance Officer, Procurement Officer. The HSDU works closely with the Environmental Health Unit (EHU) of the MoH. The HSDU may contract other project workers to supplement the permanent staff if there is need for additional human resources. The aim of consolidating project implementation into one unit is to ensure that there is continuity of development after the project has ended, and to build on the existing knowledge and progress. The HSDU is also responsible for coordination between the health facilities to ensure that the MoH meets its targets and deadline as it relates project implementation and other obligations.

3. The EHU is responsible for conducting assessment and inspection of health facilities to ensure compliance within the public and private health sector. This is a key requirement for the granting of the Health Facilities License.
4. The MoH has an Environmental and Social Specialist on staff. This person serves as the link between the EHU and the HSDU, and is responsible for providing guidance to the MoH on environmental and social matters.
5. There is an ongoing discussion of the role of the Environmental Protection Agency in relation to the health sector. Currently, they are not providing regulatory oversight of the public health sector. There are consultations and ongoing discussion being conducted to better situate the position of the EPA in the public health sector.
6. The project disclosure and stakeholder engagement plan was discussed. The MoH had developed and implemented stakeholder engagement plans for other project. For this project, Dr. Ramsammy noted that the project information will be disclosed on the MoH website to better reach the public and other interest parties. There is an existing list of key stakeholders compiled by the HSDU and these stakeholders will be included in the Stakeholder Engagement Plan.
7. For the disclosure of the project's environmental and social documentation, the preferred method is to share the documentation via email to the identified stakeholders and request their feedback. During the period of review by the stakeholders a virtual forum can be organized where the documents can be presented and discussed.
8. Engagements were already conducted for this project with key personnel from the hospitals being targeted to determine their priorities and to develop the project scope.

-END-



HEALTH CARE NETWORK STRENGTHENING IN GUYANA



Disclosure and Stakeholder Consultation Report

August 25, 2022

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1.0 Introduction

The Government of Guyana, with support from the Inter America Development Bank (IDB) is working to develop the Health Care Network Strengthening Project. The Project aims to improve the health of the Guyanese population through increased access, quality, and efficiency of health services by improving health outcomes associated with low and high complexity procedures, by expanding the capacity of strategic hospitals; by extending coverage of diagnostic, medical consultation, and patient management services, inclusive of the country's hinterlands, through digital health; and by increasing the efficiency of the public health system, by strengthening key logistic, management, and support processes and inputs.

The project will target infrastructure improvement and expansion in three priority hospitals, namely the Georgetown Public Hospital Corporation, the New Amsterdam Hospital and the Linden Hospital Complex.

The project has three components:

1. Component 1 focuses on supporting hospital health services networks;
2. Component 2 focuses on strengthening digital health; and
3. Component 3 focuses on promoting health sector management and efficiency.

The Project, according to the IDB's classification, is Category B due to potentially moderate direct, indirect and cumulative negative environmental and social impacts from activities during construction, rehabilitation and operation of the healthcare facilities and associated infrastructure. The project is likely to cause mostly local and short-term negative environmental and associated social impacts for which effective mitigation measures are readily available.

As such, it was determined that an Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP) framework be prepared to assess the potential negative environmental and social impacts associated with the project's interventions and in particular the construction activities and to identify measures of prevention and mitigation.

The IDB requires the environmental and social due diligence documents be disclosed prior to finalization and therefore a process to ensure meaningful consultation is to be implemented.

A draft fit-for-disclosure version of ESA and ESMP framework, inclusive of a Stakeholder Engagement Plan and a Grievance Mechanism, was prepared and in early August, 2022. In this regard, the Ministry of Health embarked on a process of consultation and engagement with stakeholders. This report describes the engagement and disclosure process and presents the feedback derived from the process.

2.0 Information Disclosure Process

The disclosure process is aimed at allowing stakeholders to understand the project's risks, impacts, potential opportunities and development benefits. The approach to the disclosure process included two methods to ensure stakeholders relevant to the project were engaged. Firstly, the ESA and ESMP framework, inclusive of the Stakeholder Engagement Plan and the Grievance Mechanism, were disclosed on the Ministry of Health website and social media page. Secondly, the document was shared with key stakeholders via email prior to the convening of a stakeholder consultation forum to present the ESA and ESMP framework to stakeholders and solicit their feedback. The disclosure process was guided by the Stakeholder Engagement Plan prepared for the project.

2.1 Online Disclosure

Once the ESA and ESMP framework, inclusive of the Stakeholder Engagement Plan and the Grievance Mechanism, were determined to be fit for disclosure the document was posted on the Ministry of Health's website and Facebook page.

The document was first posted on the Ministry of Health's website on August 19, 2022 and an updated version on August 25, 2022. The document can be accessed via the following link:

https://www.health.gov.qv/images/documents/HCNS/ESA_and_ESMP_-_Health_Care_Network_Strengthening_Project_-_August_2022_revised.pdf

The document was also posted on the Ministry's Facebook page on August 19, 2022, with an updated version posted on August 26, 2022. The document can be access via the following link:

<https://www.facebook.com/100067742370205/posts/pfbid0q2AhWNLkNCwpQexNgEywmVwQNL94hQudBCKDa72ALAC9BUdkkYHU3Jh2pMpzCmZAI/?d=n>

2.2 Stakeholder Consultation Session

The stakeholder consultation session was held via the ZOOM platform on August 26, 2022 at 10:00hrs following the publishing of the ESA/ESMP framework on the Ministry of Health's website and social media page. The ZOOM platform was chosen as the most efficient method of disclosure since it enabled participants from the different project locations and project areas of influence to be engaged and involved at the same time. This was also a measure of ensuring the safety of participants in preventing the spread of COVID 19.

2.2.1 Planning

The Stakeholder Engagement Plan prepared for the project was utilized to guide the planning for the consultation session. The stakeholders relevant to the project were determined based on their interest and mandate in relation to the project. These stakeholders included Key Stakeholders, Affected Parties, and end beneficiaries of the project. Stakeholders were invited well in advance of the consultation session. This was done via email sent by the Ministry of Health on August 17, 2022. The list of stakeholders invited is presented in Table 1, while a copy of the invitation email is included as Appendix A. Along with the invitation, the draft ESA and ESMP framework document was shared with the stakeholders.

Table 1: Invitees to the Stakeholder Consultation Session

Stakeholder	Contact Information	Stakeholder Classification
All Regional Health Officers (RHOs) from Regions 1 to 10		Key Stakeholder
All Regional Executive Officers (REOs) for Regions 1-10.	<p>T. Bisesar – regionalexecutiveofficer1@gmail.com</p> <p>D. Ramdatt – reo.reg2@gmail.com</p> <p>J. Somwar – regionaldemocraticcouncil@yahoo.com</p> <p>D. Gajraj – reo.rdcregion4@gmail.com</p> <p>G. Blackman – reo.5rdc@gmail.com</p> <p>N. Persaud – reo.reg6@gmail.com</p> <p>K. Ward – reoregion7@yahoo.com</p> <p>P. Ramoutar – pramotar@yahoo.com</p> <p>K. Singh – reoofficeregion9@gmail.com</p> <p>D. John – reoregion10@gmail.com</p>	Key Stakeholder
<p>Management of Georgetown Public Hospital Corporation,</p> <p>New Amsterdam Regional Hospital</p> <p>Linden Hospital Complex</p>	<p>R. Rambarran – Chief Executive Officer</p> <p>B. Ramnauth - Chief Executive Officer</p> <p>R. Small - Chief Executive Officer</p>	Affected Parties
Guyana Medical Council	secretarymedicalcouncil@gmail.com	Interested Parties
Guyana Nurses Association	guyanannurses@gmail.com	Key Stakeholder
Georgetown Mayor and City Council	info@mcc.gov.gy	Interested Parties
New Amsterdam Mayor and Town Council	townclerkna01@yahoo.com	Interested Parties
Linden Mayor and Town Council	publicrelationmtc9@gmail.com	Interested Parties
Guyana Responsible Parenthood Association	grpa.gy@gmail.com	Interested Parties
Ministry of Human Services and Social Security	ps@mhsss.gov.gy	Key Stakeholder
Deaf Association of Guyana	smac888@yahoo.com	Vulnerable/Disable Group

Stakeholder	Contact Information	Stakeholder Classification
Guyana Society for the Blind	oblair667@gmail.com	Vulnerable/Disable Group
National Commission on Disability	ncd101297@gmail.com	Vulnerable/Disable Group
PAHO	codinalu2@paho.org	Interested Parties
New Amsterdam Technical Institute	natechnicalinstitute@yahoo.com newamsterdam.ti@meo.gov.gy	Affected Parties
Berbice High School	berbicehighschool@yahoo.com	Affected Parties

Prior to the engagement session, on August 24, 2022, the Ministry of Health followed up with each stakeholder through phone calls to remind them about the session. In addition, the ZOOM meeting link, ID (811 6329 3549) and Password (411033) along with the meeting agenda were shared with each stakeholder via email. A copy of the agenda is attached as Appendix B.

2.2.2 Consultation Session

The consultation with the project's stakeholders was held via ZOOM on August 25, 2022 at 10:00hrs. The session followed the agenda outlined below.

1. Welcome and Introduction – Dr. Leslie Ramsammy
2. Overview of the Project – Dr. Leslie Ramsammy
3. ESA and ESMP – Mr. Shyam Nokta, Mr. Khalid Alladin and Ms. Preiya Methuram
4. Feedback/Question
5. Closing Remarks - Dr. Leslie Ramsammy

The session was chaired by the Ministry of Health. The Ministry of Health was represented by:

1. Dr. Leslie Ramsammy – Advisor, Ministry of Health
2. Ms. Ashley Barakat – Environmental and Social Specialist

The Ministry of Health provided an overview of the project, and a background to the preparation of the environmental and social safeguard documents.

The Consultant Team then presented the findings on the ESA and recommendations outlined in the ESMP, including the Stakeholder Engagement Plan and Grievance Mechanism. This was done by the following representatives of the Consultant's Team:

1. Mr. Shyam Nokta
2. Mr. Khalid Alladin
3. Ms. Preiya Methuram

A Microsoft PowerPoint presentation was used to present the information, which covered the following areas:

- a. A description of the area of influence and physical and technical characteristics of the proposed project activity
- b. Feedback provided by stakeholders during the ESA and ESMP framework preparation process
- c. Potential risks and impacts of the project on the hospitals, local communities and the environment, and proposals for mitigation and management of impacts
- d. Potential opportunities and development benefits from the project for local communities

The presentation is included as Appendix D.

Participants from the following institutions attended the stakeholder consultation session, which was attended by approximately seventy persons:

1. Guyana Public Hospital Cooperation (GPHC)
2. New Amsterdam Regional Hospital (NARH)
3. Linden Hospital Complex (LHC)
4. Regional Executive Office – Region 5
5. Regional Executive Office – Region 6
6. Regional Executive Office – Region 2
7. Kitty Health Centre
8. Deaf Association of Guyana
9. Guyana Society for the Blind
10. Mibicuri Hospital
11. PAHO/WHO
12. Cambellville Health Centre
13. Guyana Responsible Parenthood Association (GRPA)
14. National Commission on Disability
15. New Amsterdam School of Nursing
16. Port Maurant Hospital
17. Central Board of Health
18. Linden Hospital Day Care

The detailed list of participants is presented in Appendix C.

As was previously indicated the session commenced at 10:00hrs and ended at 12:00hrs, lasting for approximately two hours. The session was recorded by the Ministry of Health for future publication. The Ministry intends to publish the recording of the session on its website to enable stakeholders who were not able to participate (such as the general public and the end beneficiaries – inclusive of present patients) – the opportunity to offer feedback and recommendations on the project.

It should be noted that, although the consultation session involved specific entities representing some of the primary stakeholder groups, the consultation process enables members of the general public to provide feedback (as these are the end beneficiaries). Firstly, the document is published on the Ministry of Health's website and their social media page, thus allowing for review and the provision of feedback from the general public. Secondly, the consultation session, including the presentation made, was recorded and will be posted to the Ministry's website and social media page for viewing by the general public and end beneficiaries and allowing an opportunity to lodge comments, and to provide feedbacks and recommendations via the official email of the Ministry and comments section of the recording post. In addition, the consultation process with stakeholders will continue as the project details are finalized.

3.0 Feedback

Stakeholders were provided with an opportunity to share relevant feedback on the project. The feedback provided as well as the responses by the Ministry of Health and the Consultant's Team are outlined in Table 2.

Table 2: Feedback Provided by Stakeholders and Responses

Organization	Feedback	MOH/Consultant Response
Deaf Association of Guyana	<p>It was recommended that:</p> <ol style="list-style-type: none"> 1. Clear visuals/signage be used to provide information to the differently abled, especially during the re-construction phase of the hospitals. Other systems such as lights can be used in cases of emergencies. 2. Provision should be made for the deaf community in registering grievances. It was suggested that the hospitals have interpreters available during project period to receive and record grievances. The Deaf Association is willing to mediate or recommend interpreters from within the communities to the hospitals within the scope of the project sites. 	<p>These recommendations will be taken on board as the project advances. Project implementation will cater for the various vulnerable population and the differently-abled population. (MOH).</p> <p>These measures are part of IDB's Environmental and Social Performance Framework and associated standards. These will be included in the Contractors' Management Plans. (Consultant).</p>
PAHO/WHO	<p>This project should ensure that the three main hospitals have a contingency plan, and waste management plans; ensure staff and auxiliary are trained in the various relevant areas; as well as have a preventative maintenance plan rather than corrective in the operations of the newly renovated facilities.</p> <p>In addition, SMART facilities standards should be applied to the retrograding of these facilities. These standards</p>	<p>All new hospitals in Guyana are following the SMART Hospital standards. Part of the upgrading of the hospitals is to create a better patient flow, better cohesion, and to achieve a more environmentally friendly and safer service across the board. In the case of waste management plan, the Ministry of Health is currently drafting a Health Sector Waste Management Plan. (MOH).</p>

Organization	Feedback	MOH/Consultant Response
	are published and shared with the Ministry of Health.	
Kitty Health Centre	Very comprehensive study of the medical institutions. Good assessment, interventions and contractor responsibilities. Other medical facilities can be assessed as well with appropriate intervention where necessary.	
GPHC	Supervisory consultants should be on site to monitor activities, with support from the Hospitals' Occupational Health and Safety personnel.	It is recommended that the Supervisory Consultants have an Environmental and Social Officer on site, and responsible for project management and contractors compliance with the environmental, social, health and safety requirements. The role of the Occupational Health and Safety personnel is to ensure that these systems are functioning and not negatively impacting the hospital. Recommendations also involve Occupational Health and Safety personnel of the hospitals to be involved in the planning of work, systems and procedures so that these can be addressed and monitored closely. (Consultant).
GPHC	A communication strategy is needed to keep the wider population updated as the project progresses. This helps to reassure the public and to build confidence in the health sector. This will also allow the Health Sector to stay ahead of the narrative.	This will be done. All relevant information and updated information, notices, etc. will be communicated to stakeholders accordingly. (MOH).

4.0 Conclusion

The consultation session provided valuable interaction and feedback with stakeholders of the project. It allowed for a clearer understanding of the project components, the environmental and social requirements, and the project's potential impacts and recommended mitigation measure. There was the exchange of important recommendations and suggestions from the stakeholders.

The ESA and ESMP framework will be updated to include and incorporate the feedback from the stakeholder consultation.

The consultation process will continue, including maintaining the document on the Ministry of Health's website and their social media page and posting the recording of the consultation session to the Ministry's website and social media page. This will allow for viewing by the general public and end beneficiaries and providing an opportunity to lodge comments, and to receive feedbacks and recommendations. In addition, the consultation process with stakeholders will continue as the project details are finalized.

Appendices

Appendix A – Meeting Invitation

From: **Dr. Leslie Ramsammy** <dr.ramsammy.advisor@gmail.com>
Date: Wed, Aug 17, 2022 at 12:10 PM
Subject: Virtual Public Consultation on the draft Environmental and Social Assessment/ Environmental and Social Management Plan (ESA/ESMP) virtually on Thursday, August 25, at 10:00 AM.
To:
Cc: Ashley Barakat <ess_hsd@gha.gov.gy>

Dear Invitee,

The IDB, through its Social Protection and Health Division, is working with the Government to develop the Health Care Network Strengthening Project.

The project aims to improve the health of the Guyanese population through increased access, quality, and efficiency of health services by improving health outcomes associated with low and high-complexity procedures, and by expanding the capacity of strategic hospitals. The project will target infrastructure improvement and expansion in three priority hospitals, namely the Georgetown Public Hospital Corporation, the New Amsterdam Hospital, and the Linden Hospital Complex.

The Ministry of Health will be hosting a Virtual Public Consultation on the draft Environmental and Social Assessment/ Environmental and Social Management Plan (ESA/ESMP) for this project. The consultation is scheduled to occur **virtually on Thursday, August 25, at 10:00 AM**. The link will follow in a subsequent email.

Please see attached the ESA/ESMP. If you have any written comments to submit, please do so through my email. For further information or clarification, please contact my office at 225-4505, or through my email.

I am looking forward to your participation.

Thank you.

..
Dr. Leslie Ramsammy
Advisor to Minister of Health
Ministry of Health
Brickdam, Georgetown
Tel: 592-225-4505
Email: dr.ramsammy.advisor@gmail.com



Appendix B - Meeting Agenda

VIRTUAL PUBLIC CONSULTATION ON THE DRAFT ENVIRONMENTAL AND SOCIAL ASSESSMENT/ ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESA/ESMP)

Thursday, August 25, 2022

10:00 AM

Zoom Link:

<https://us02web.zoom.us/j/81163293549?pwd=aURTTXA5KzA1YnRTemlQUtJdFeW5oUT09>

Meeting ID: 811 6329 3549

Passcode: 411033

AGENDA

- < Welcome and Introduction
- < Overview of Project
- < Environmental and Social Assessment and Environmental and Social Management Plan (ESA/EAMP)
- < Feedback/ Questions

Appendix C – List of Participants

	Name of Participant	Institution/Organisation	Stakeholder Group
1.	C. Providence	GPHC	Affected Party
2.	K. Alexander	GPHC	Affected Party
3.	A. Maraj	GPHC	Affected Party
4.	O. Wickham	GPHC	Affected Party
5.	R. Deonarine	GPHC	Affected Party
6.	R. Rambarran	GPHC	Affected Party
7.	G. Parker	GPHC	Affected Party
8.	E. Austin	GPHC	Affected Party
9.	L. Lawrence	GPHC	Affected Party
10.	J. Hermanystne	GPHC	Affected Party
11.	L. Holder	GPHC	Affected Party
12.	L. Sampson	New Amsterdam Hospital	Affected Party
13.	M. Rampersaud	New Amsterdam Hospital	Affected Party
14.	Dr. B. Ramnauth	New Amsterdam Hospital	Affected Party
15.	C. Kumar	New Amsterdam Hospital	Affected Party
16.	R. Ross	New Amsterdam Hospital	Affected Party
17.	T. Algu	New Amsterdam Hospital	Affected Party
18.	Dr. Jhagru	New Amsterdam Hospital	Affected Party
19.	O. DaSilva	New Amsterdam Hospital	Affected Party
20.	S. Edwards	New Amsterdam Hospital	Affected Party
21.	S. Bakker	New Amsterdam Hospital	Affected Party
22.	R. Holder	New Amsterdam Hospital	Affected Party
23.	S. Lindie	New Amsterdam Hospital	Affected Party
24.	A. Hamilton	New Amsterdam School of Nursing	Key Stakeholder
25.	S. Hamilton	New Amsterdam School of Nursing	Key Stakeholder
26.	A. James	Linden Hospital Complex	Affected Party
27.	M. Bollers	Linden Hospital Complex	Affected Party
28.	Dr. K. Noble	Linden Hospital Complex	Affected Party
29.	D. Amsterdam	Linden Hospital Complex	Affected Party
30.	T. Williams	Linden Hospital Complex	Affected Party
31.	S. La Fargue	Linden Hospital Complex	Affected Party
32.	Y. Thomas	Linden Hospital Complex	Affected Party
33.	S. Daly	Linden Hospital Complex	Affected Party
34.	N. Todd	Linden Hospital Complex	Affected Party
35.	K. Small	Linden Hospital Complex	Affected Party
36.	C. Anthony	Linden Hospital Complex	Affected Party
37.	P. Cullin	Linden Hospital Day Care	Affected Party
38.	P. McCoy	Linden Hospital Day Care	Affected Party
39.	N. Persaud	Regional Executive Officer – Region 6	Key Stakeholder
40.	S. Saywack	Regional Executive Office – Region 2	Interested Party
41.	G. Blackmann	Regional Executive Office - Region 5	Interested Party

	Name of Participant	Institution/Organisation	Stakeholder Group
42.	S. Macintosh	Deaf Association of Guyana	Vulnerable/ Disable Group
43.	O. Blair	Guyana Society for the Blind	Vulnerable/ Disable Group
44.	T. Noel	PAHO/WHO	Interested Party
45.	A. Chaturia	Guyana Responsible Parenthood Association	Interested Party
46.	J. Johnson	Central Board of Health	Interested Party
47.	B. Pile	National Commission on Disability	Vulnerable/ Disable Group
48.	Dr. Behari	Kitty Health Centre	Interested Party
49.	Dr. M. Adams	Kitty Health Centre	Interested Party
50.	Dr. L. Sultan	Mibicuri Hospital	Interested Party
51.	S. Tait	Campbellville Health Centre	Interested Party
52.	Dr. G. Omapersaud	Port Mourant Hospital	Interested Party
53.	R. Ramsackal	The Ministry of Health requested at the commencement of the session and reminded persons during and at the end that all participants indicate the institution they are representing or their interest. Despite this, the requested information was not provided by these participants. It is challenging now for the Ministry of Health to determine the institution or interest of these participants.	
54.	Dr. C. Jones		
55.	M. Yacoob		
56.	Toya		
57.	S. Jaigobind		
58.	R.Chand		
59.	R. Parsaram		
60.	C. Newman		
61.	M. Perreria		
62.	S. Britton		
63.	O. Duke	It is expected though that these participants would have represented various stakeholder groups including Interested Parties, Affected Parties, Vulnerable Groups and End Beneficiaries.	
64.	B. Welcome		
65.	R.Thakoordeen		
66.	T. Saul		
67.	S. Austin		
68.	K. Dos Ramos – Thomas		
69.	T. Clarke		
70.	M. Miller		
71.	P. Samuels		
72.	R. R. Martin		
73.	S. August		
74.	M. Nicholson		
75.	D. Campbell		
76.	Y. McAndrew		
77.	P. Augustus		
78.	K. Samuels		
79.	V. Joseph		
80.	C. Bennons		

Appendix D – Presentation



Project Background

- The Health Care Network Strengthening in Guyana is an IDB funded project that focuses on improving the healthcare sector in Guyana. The Project has three components:
 - Component 1: Supporting hospital health services networks
 - Component 2: Strengthening digital health
 - Component 3: Promoting health sector management and efficiency
- The Environmental and Social Assessment (ESA) and Environmental and Social Management Plan (ESMP) Framework focuses on the project to support hospital health services networks.



GPHC Parking Lot to be Converted to a New Hospital Wing

The IDB logo is located in the bottom left corner, and a small blue square with the number '1' is in the bottom right corner.

Planned Project Activities

- Infrastructure rehabilitation and expansions at :
 - The Georgetown Public Hospital Corporation (GPHC) – Region 4
 - The New Amsterdam Regional Hospital (NARH) – Region 6
 - The Linden Hospital Complex – Region 10

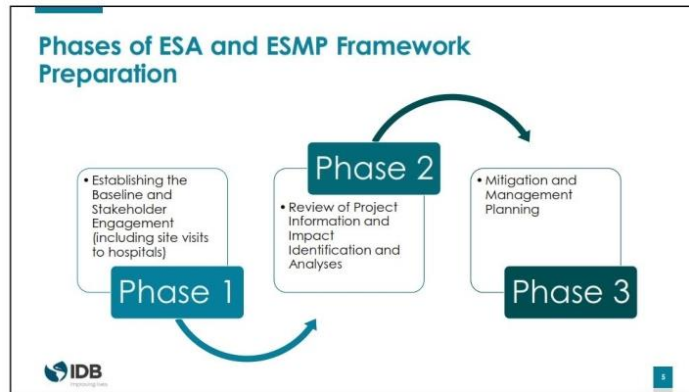


LHC Administration Block to be Demolished and replaced by a New Hospital Wing



Methodology







Site Visit Findings - GPHC

1. Guyana's main referral hospital
2. 500 beds facility with a recorded 24,000 admission annually. A&E currently has 19 beds, and the hospital has 11 operating theatre
3. Has a staff complement of 2000, including 350 doctors and 650 nurse
4. Provide a wide range of medical services such as surgeries, medical imaging, clinical services, diagnostic services
5. Other auxiliary services included catering, laundry, housekeeping, administrative function etc.
6. Grievance Redress Mechanism



Hospital Facilities

- The hospital's current facilities are not adequate to manage the current and projected patient loads.
- The hospital recorded a 14% increase in A&E, 31% in general surgery, and 81% in transplant and vascular surgeries in 2021.
- Facilities housing GPHC support services are not well connected to the medical wings of the hospital.
- Food, laundry, and bodies are often transported in the open and across public roads and pathways.
- Makeshift storage rooms using shipping containers are used to store medical supplies.



New Amsterdam Regional Hospital (Reg 6)



Site Visit Findings - NARH

- Minimal maintenance or upgrades to the hospital since its establishment 18 years ago.
- There are 16 medical specialties accessible at the NARH with not enough space to accommodate them.
- Three-bed operating theatre with mould covered walls and ceilings.
- Three-bed Intensive Care Unit (ICU) and a seven-bed A&E department.
- No High Dependency Unit (HDU).
- Sterilization unit with two sterilization machines, but only one is functional.
- The vacuum system is out of commission and non-functional.
- No pathology laboratory.



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Site Visit Finding

- Some toilets are not working due to poor maintenance.
- Water reservoir is cracked, leaking, and prone to contamination.
- No water purification system.
- Laundry department is not efficient, and dryer is not functioning.
- Incinerator is functional but outdated, needs to be replaced by a hydro-clave system.
- No formal Fire Prevention and Protection Plan with documented standard operation procedures (SOPs).
- The hospital is not prone to flooding from heavy precipitation or overtopping of the Canje River, but below main road level.



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Site Visit Findings - LHC

- Six departments; obstetrics, gynaecology, surgical, general medicine, orthopaedics, and paediatrics.
- The hospital has 29 rooms, with 86 beds.
- Most of the hospital's facilities, equipment, and structures are functional but in need of rehabilitation and expansion.
- The hospital has treated an average of 3,900 patients a year over the past five years.
- Hospital anticipates a 125% increase in the average inpatient load in the next five to ten years.



Site Visit Findings - LHC

- Industrial scale dryer is not functional
- The LHC's incinerator stopped working in 2020, and as a result, all sharp waste is stored in barrels and transported to the GPHC for disposal twice a year.
- The LHC lacks a Fire Prevention and Protection Plan. However, fire prevention and protection has been subsumed into the hospital's OSH plan where training is executed in the first and third quarter yearly.

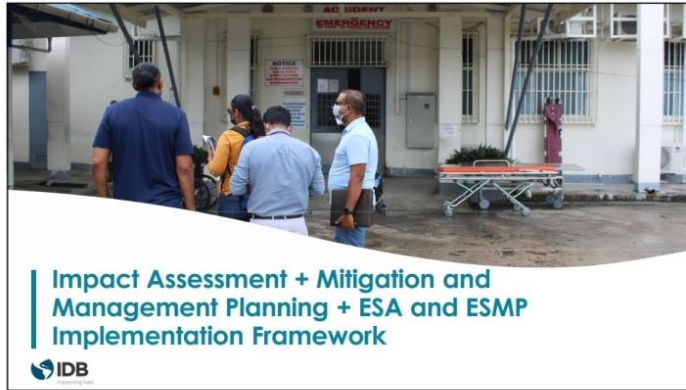


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Recommendations from Key Stakeholders

- Staff from different departments should be part of discussions on planning engineering solutions and developing comprehensive approaches to ensure the safety of patients, visitors, and hospital staff.
- Relocate affected departments to other areas during the construction phase.
- Contractors should develop a comprehensive HSSE Plan to identify and mitigate risks and outline processes to ensure that workers adhere to it.
- Contractors should prepare a Contractor Environmental and Social Management Plan (CESMP) to manage risk during construction.
- Hospital management to brief the contractors on the relevant rules, policies, and protocols and reiterate the importance of compliance.
- Management should be involved in the project and OSH discussions from the onset.
- Contractors should hire a health, safety and environmental personnel.
- A Code of Conduct should be prepared for the contractors' workforce.

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Ambient Noise Levels – Impacts

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Project construction activities	Noise nuisance to sensitive receptors	Negative, Direct, Short-Term, Localised	Moderate	Likely	Medium

Mitigation and Management Measures

- Inform the hospitals' management in advance of any construction activity that will result in significant noise and likely to affect the delivery of services.
- Schedule construction works to periods when impacts will be less.
- Noisy activities should not occur in close to proximate receptors during the night, on Sundays and on Holidays, or after 18:00hrs and prior to 06:00hrs.
- Site noisy equipment away from receptors.
- PPE for workers.
- Use noise muffling measures.
- Maintain equipment and machinery.
- Monitor noise levels.

Ambient Air Quality – Impacts

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Project construction activities	Adverse impacts to ambient air quality affecting sensitive receptors	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium

Mitigation and Management Measures

- Inform the hospitals' management in advance of construction activities.
- Schedule construction works to periods when impacts will be less.
- Dust screens around work areas.
- Relocate operations where dust generation cannot be prevented.
- Visual monitoring of dust.
- PPE for workers.
- Soaking of construction zone.
- Avoid dry material stockpiles in close proximity to receptors.
- Cover materials during transport.
- Maintain equipment.
- Do not burn construction waste.



Soils – Impacts

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Project construction activities	Soil disturbing activities and erosion	Negative, Direct, Short-Term, Localised	Negligible	Almost Certain	Low
Project construction activities	Soil contamination from improper disposal of general solid wastes and hazardous wastes	Negative, Direct, Short-Term, Localised	Minor	Unlikely	Low
Project construction activities	Minimal compaction from material stockpiles and heavy vehicles	Negative, Direct, Short-Term, Localised	Negligible	Likely	Low



Soils – Mitigation and Management Measures

Erosion

- Limit soil disturbance.
- Control gradient slopes.
- Adequate drainage.
- Monitor exposed soils.
- Monitor weather.
- Locate material stockpiles away from drains.
- Limit material stockpiles and berm if necessary.
- Excavated materials should be reused or properly disposed.
- Encourage natural revegetation.

Compaction

- Restrict movement of heavy-duty equipment.
- Scarify compacted soils.
- Use appropriate equipment for tasks.
- Designate routes for heavy-duty vehicles.

Sedimentation

- Redistribute cleared soils within compounds.
- Monitor weather conditions.



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Water Resources – Impacts

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Project construction activities	Sedimentation of surface bodies	Negative, Direct, Short-Term, Localised	Negligible	Unlikely	Low
Project construction	Contamination of surface and ground water bodies	Negative, Direct, Short- to Long-Term, Localised	Minor	Unlikely	Low
Project operations	Contamination of surface and ground water bodies	Negative, Direct, Long-Term, Localised	Moderate	Rare	Low



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Water Resources – Mitigation and Management Measures

- Prevent sedimentation, improper waste disposal or contamination by hazardous materials.
- Maximize opportunities for rainwater harvesting.



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Waste – Mitigation and Management Measures – Construction Phase

Liquid Waste

- Use portable toilets.
- Channel wastewater from temporary living sites to a soak away.

Solid Waste

- Collect in bins and empty regularly.
- Do not place construction waste in the hospital waste collection receptacles.
- Consolidate construction waste and reuse (if possible).
- Do not leave waste in the open and disposed of it within one week.
- Make all workers aware of the proper waste handling and disposal practices.
- Do not burn waste.

Hazardous Wastes

- Collect waste oils and reuse or dispose in a safe and acceptable manner.
- Dispose empty hazardous material containers as is recommended by the manufacturer.
- Do not store hazardous wastes on-site.



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Waste – Mitigation and Management Measures – Operation Phase

Liquid Waste

- Sewage systems should be well maintained and emptied regularly.
- Channel discharge from septic tanks to a soak-away system.
- Channel grey water through a grease trap and then a soak-away.
- Treat all biomedical liquid waste before discharging drains or sewage systems.

Solid Waste

- Waste such as paper and cardboard, empty plastic bottles, cans, etc. should be collected via bins placed at strategic points around the compound.
- The bins should be emptied on a regular basis, or once filled.
- Garbage should not accumulate onsite and should be collected and disposed of at an area and in a manner approved by the local authorities.
- No burning of any type of waste should occur.

Hazardous Wastes

- Achieve compliance with health facility.
- Ensure health facilities have waste adequate receptacles.
- Source and install hydroclaves or establish a coordinated arrangement medical waste collection.
- Improve the facilities for the storage of medical waste.
- Train staff on handling medical waste.
- Ensure PPE are readily available and utilized.



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Social Resources – Impacts

Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Employment					
Project construction activities	Temporary employment for persons from local communities	Positive, Direct, Short-Term, Localised	Minor	Almost Certain	N/A
Improved Facilities					
Project operations	Increases in wellbeing and quality of life for staff, patients and visitors	Positive, Direct, Long-Term, Localised	Major	Almost Certain	N/A
Traffic					
Project construction activities	Traffic congestion during drop off of construction materials	Negative, Direct, Long-Term, Local	Moderate	Likely	Medium
Land Take and Disruption					
Project construction activities	Disruption of existing activities and the delivery of health care services	Negative, Direct, Short-Term, Localised	Major	Likely	High
Archaeological Resources					
Project construction activities	Damage to archaeological resources	Negative, Direct, Long-Term, Regional	Moderate	Unlikely	Low



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Social Mitigation and Management Measures – Conflict Prevention

- Inform potential affected parties about planned project activities.
- Engage key stakeholders of activities.
- Notify relevant authorities of any emerging problems.
- Avoid the use of hospital resources, utilities, and facilities.



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Social Mitigation and Management Measures – Disruption of Hospital Services

- Plan pre-construction activities early to identify suitable rooms or adjoining buildings into which to relocate patients or service areas.
- Construct new buildings first, then relocate existing services those buildings, and then commence within the existing space.
- Contractors to advise facilities management well in advance concerning access closures, rerouting of pedestrian traffic and interruptions in water, electricity and sewerage services.
- Construct in phases.
- Relocate the day care facility at the Linden Hospital Complex prior to the demolition of the building.



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Social Mitigation and Management Measures – Code of Conduct for Workers

- Compliance with applicable laws, rules, and regulations.
- Compliance with applicable health and safety requirements.
- The prohibition of the use of illegal substances.
- Prohibition of sexual harassment.
- Prohibition of violence or exploitation.
- Protection of children.
- Sanitation requirements.
- Avoidance of conflicts of interest.
- Respecting reasonable work instructions.
- Protection and proper use of property.
- Duty to report violations of the Code.
- Non-retaliation against workers who report violations of the Code.
- Respecting the rules, norms, customs and practices of the nearby indigenous community.



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Social Mitigation and Management Measures – Grievances

- Implement measures to ensure stakeholder engagement.
- Provide persons affected by the project with a forum to be heard and have their grievance addressed.
- Implement the project grievance mechanism



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Social Mitigation and Management Measures – Employment and Community Development

- Prioritise employment opportunities for persons residing in project communities.
- Explore possibilities of employing women.
- Support local content through local procurement.
- Wages offered to local staff should be in keeping with Guyana's labour laws or higher.
- Local workers should work for standard working hours and be fairly remunerated.



Social Mitigation and Management Measures – Labour Management

- The selection and employment should be conducted in a fair and transparent manner, and according to the requirements of the project.
- Recruitment procedures should be transparent, public, and non-discriminatory
- Applications for employment should only be considered if submitted via the official application procedures established.
- Clear job descriptions should be provided in advance of recruitment.
- Women and other vulnerable groups should be encouraged to apply for jobs.
- All workers should have written contracts describing terms and conditions of work.
- No child under the age of fifteen should be employed, and no young person under the age of sixteen should be employed at night.



Social Mitigation and Management Measures – Labour Management

- Employees should contribute to the National Insurance Scheme.
- Each project worker should be responsible to paying their individual income tax in accordance with the laws.
- Termination of services are required to follow the Termination of Employment and Severance Pay Act of 1997.
- Worker's health and safety should be protected.
- In sourcing solar panels and other equipment, the contractor should ensure that these are sourced from suppliers who are compliant with labour procedures



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Social Mitigation and Management Measures – Traffic

- All drivers and operators must be licensed.
- Drivers should be instructed to observe and respect all traffic laws.
- Appropriate safety signage should be posted leading up to the entrance of the construction sites.
- All light and heavy-duty equipment and vehicles should be maintained and in good working condition.
- Passengers should not be permitted on mobile equipment unless otherwise required.
- Construction materials should not be placed or discharged on the roadways.
- Trucks and other construction vehicles and machinery should not be parked along the roadway for extended periods.
- Drivers delivering construction materials should respect speed limits and avoid blocking accesses.
- Safe traffic control measures should be implemented



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Health and Safety – Impacts



Phases of the Project	Potential Impact from Project Activities	Impact Assessment			Impact Risk
		Type	Significance	Likelihood	
Occupational Health and Safety of Project Workforce					
Project construction activities	Accidents at worksites result in injuries or fatalities	Negative, Direct, Short- to Long-Term, Localised	Major	Unlikely	Medium
Public Health and Safety					
Project construction activities	Transmission of COVID-19 among receptors: project workforce, local communities, school populations	Negative, Direct, Long-Term, Regional	Moderate	Unlikely	Medium
Health, Safety and Security of Staff, Patients and Visitors					
Project construction activities	Noise and dust nuisance, unsafe conditions around material stockpiles and construction zones, sexual harassment of Staff, Patients and Visitors	Negative, Direct, Short-Term, Localised	Minor	Likely	Medium

Public Health and Safety

- Secure work areas from unauthorized persons.
- Demarcate all hazardous areas and cordon off the construction area.
- Install warning signs in areas which present a risk for incidents.
- Inform hospital administrations, staff, patients, and visitors of risks and required precautionary measures.
- Store construction materials and waste in an organized and orderly manner.
- Contractors should use separate access.
- Inform hospital management prior to undertaking high-risk activities.



Emergency Response – Construction Phase

- Unique to each of the selected hospitals.
- Prepare an Emergency Response Plan (ERP) as part of the CESMP.
- The ERP should outline measures for emergencies response (spills of hazardous materials, accidents or medical emergencies).
- The ERP should describe the general types of emergency and actions to be followed should an emergency occur during the mobilization and operational phases of the project and should include:
 - Emergency Contact Details
 - Emergency Procedures
 - Authority of Control
 - Emergency Response Equipment
 - Scenario Description and Response
 - Incident Reporting



Emergency Response – Operation Phase

- Prepare ERP addressing the risks posed by the operation of the hospital.
- Provide emergency preparedness and response equipment.
- Place equipment at strategic locations around the facilities, clearly identifiable and with clear instruction for usage.
- Maintain equipment.
- Provide emergency response training to key staff and conduct periodic drills.
- Post emergency contact information in strategic areas around the facilities.
- Designate muster points with clear signage.
- Institute disaster preparedness, response, and management arrangements based on risk levels.



Contractor ESMP

- The contractors should prepare a CESMP to address environmental, social, health and safety issues pertinent to the construction phase of the project.
- Submit CESMP to the Supervisory Consultants, HSDU, and MoH for approval prior to the commencement of works.
- Prepare the CESMP using this ESMP, relevant national standards and guidelines including those of the MoH and IDB, as a guide.
- The CESMP should include:
 - HSSE Policy
 - Management Structure
 - Work Programme
 - Solid Waste Management Measures
 - Liquid Waste/Wastewater Management Measures
 - Hazardous Waste Management Measures
 - Hazardous Materials Management Measures
 - Erosion and Sedimentation Control
 - Dust Control
 - Noise Prevention
 - Workers Health and Safety
 - Community Safety
 - Hospital Safety
 - Emergency Preparedness and Response Plan
 - Chance Find Procedure
 - Training
 - Site Closure, Decommissioning and Restoration
 - Grievance Mechanism
 - Monitoring and Reporting
 - Budget



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Reporting

Pre-Construction

- CESMP prepared for approval of Supervisory Consultants, HSDU, and MoH

During Construction

- Immediate notification to MoH of any incidents or violations.
- Progress meetings of the contractors with representatives of the MoH, HSDU, and hospital administrations.

Post-Construction

- Submission of Compliance Report to MoH and HSDU.



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Monitoring Framework (Project Construction)



Environmental and Social Criteria	Frequency	Locations
Air Quality <ul style="list-style-type: none"> Evidence of dust accumulation and suspended particles through visible observation Period checks with receptors 	Continuous	<ul style="list-style-type: none"> Around active construction zones Hospital buildings or facilities most proximate to active construction zones Hospital boundaries to immediately adjacent land uses
Noise <ul style="list-style-type: none"> Decibel levels 	Periodically	<ul style="list-style-type: none"> Around active construction zones Hospital buildings or facilities most proximate to active construction zones Hospital boundaries to immediately adjacent land uses
Water Quality <ul style="list-style-type: none"> Visual observation for sedimentation and oil and grease 	As needed	<ul style="list-style-type: none"> Perimeter drains within the hospital compounds and drains near material stockpile areas.
Waste Management <ul style="list-style-type: none"> Compliance with CESMP and waste management practices Littering and waste accumulation 	Weekly	<ul style="list-style-type: none"> Waste receptacles, disposal sites and active construction sites.
Health and Safety <ul style="list-style-type: none"> Use of protective gear by workers Adequate and appropriate signage Location of Emergency Procedures Availability of emergency response equipment Health conditions of staff Demarcation of construction site COVID-19 Preventative Measures 	Weekly	<ul style="list-style-type: none"> Active construction work areas
Community Wellbeing/Concerns <ul style="list-style-type: none"> Employment Grievances which may arise Any emerging issue 	Weekly	<ul style="list-style-type: none"> Within and around the hospitals including staff, patients, visitors and neighbours.


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Monitoring Framework (Project Operations)



Impact	Parameter	Frequency	Responsibility
Management of waste	<ul style="list-style-type: none"> Compliance with regulations and guidelines for health facilities Adequate collection and storage receptacles Mechanism for the collection, storage and disposal of medical and other waste Appropriate trained personnel Compliance with waste management practices by staff Appropriate PPE being utilized in handling of waste 	Monthly	<ul style="list-style-type: none"> OH&S Personnel Management Team at each hospital
Maintenance of health facilities	<ul style="list-style-type: none"> Electrical, plumbing, air-conditioning, sanitation, sewage systems are fully functional Maintenance programme in place and active 	Monthly	OH&S Personnel
Air pollution from onsite incinerators	<ul style="list-style-type: none"> Open burning is prohibited Waste collection and management system functional 	Monthly	OH&S Personnel
Occupational Health and Safety Systems	<ul style="list-style-type: none"> OH&S personnel on staff Reports from OH&S personnel on training, awareness, etc. PPEs available and are utilized 	Monthly	OH&S Personnel
Fire Safety and Emergency Response System	<ul style="list-style-type: none"> Firefighting equipment installed Other emergency response equipment provided Record of maintenance of equipment Record of fire drills conducted Record of other training conducted Emergency Response System in place 	Monthly	OH&S Personnel
Noise from electricity back-up systems	<ul style="list-style-type: none"> Decibel levels from generators and compressors 	Monthly	OH&S Personnel
Security Risk at Health Facilities	<ul style="list-style-type: none"> Number of security personnel Installation of security cameras 	Monthly	OH&S Personnel
Disaster Management Arrangements	<ul style="list-style-type: none"> Disaster Risk Assessments conducted Interventions being made to reduce risk Disaster Response Mechanism developed and implemented 	Monthly	OH&S Personnel

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 EMP Implementation Framework		Pre-Construction Phase	
		Most	Constitute project unit within HSDU and assign an Environmental and Social Specialist
			Hire Supervisory Consultants
			Engage the EPA on obtaining environmental authorisation for the construction works
		Supervisory Consultants	Assign ESHS Personnel as part of the Supervision Team
			Prepare construction bidding documents to include environmental, social, health and safety requirements
			Ensure that the contractor's CESMP is prepared and approved
		Contractors	Assign responsibilities for environmental, social, health and safety compliance to a competent team member or hire an ESHS personnel
			Prepare the CESMP
			Conduct workers orientation and training on health and safety practices to be followed at the construction site
		Construction Phase	
		Most	General oversight of the project's environmental, social, health and safety compliance
			General oversight of the contractors environmental, social, health and safety performance
		Supervisory Consultants	Monitor project activities to ensure health, safety, environmental and social compliance
			Identify non-conformances and recommend corrective actions
			Participate in stakeholder engagements and take the lead in addressing/responding to stakeholder grievances
Contractor			Convene meetings and discuss status of contractors' compliance with ESHS requirements
			Implement the CESMP, and environmental, social, health and safety mitigation and management measures and corrective actions
			Participate in the project's progress meetings to discuss environmental, social, health and safety compliance
			Monitor for non-compliances and effectiveness of mitigation measures
			Engaging with stakeholders and addressing any grievances which might arise
			Conducting regular refresher training for workers on environmental, social and health and safety requirements
		Operation Phase	
		Most and hospital Management	Prepare and implement a plan for the management of waste
			Prepare and implement a health and safety plan
			Monitor operations to ensure compliance with the ESHS measures

Conclusion

- At the time of preparing this ESMP, the final determinations on the exact project interventions have not yet been determined.
- Most of the project impacts will occur during the construction phase and are short term, localized, and are low to medium risks.
- Most of the direct impacts will occur within the hospital environment itself.
- Impacts relating to the wider community are mainly related to the disruption of services at the hospitals during the construction period.
- Only one High Risk was identified and this relates to the disruption of services. Importantly, no Critical Risks were identified to be associated with pre-mitigation impacts of the project.
- Implementation of the recommended management and mitigation measures during pre-construction, construction and operational phases will ensure that potential project impacts are prevented or reduced.
- Implementation of the project will contribute positively to the improvement of health care delivery in Guyana, especially in the regions within which the hospitals are located.