Project Summary

Guyana Technical Training College (GTTCI)

Port Mourant, Berbice, Region #6, Guyana

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1.0. Introduction

1.1. Overview

Guyana has seen an increasing number of visitors since 2015 and this is expected to further increase in the coming years as the economy expands, fuelled by offshore oil and gas operations. In addition, the country is increasingly being recognized as a tourism destination. As Guyana's offshore oil and gas industry and tourism sectors grow, infrastructure will have to be developed and services provided to support the demands of these growing sectors. One of the critical areas for development is the Oil and Gas sector. There is currently a drive to enhance the capacity and level of services offered by this sector.

1.2. Project Location

The Project area is located in proximity to the Guyana Sugar Corporation Inc. (GUYSUCO) compound at Port Mourant, Berbice, Region# 6, East Berbice-Corentyne. The location of the Guyana Technical Training College(GTTCI) Project is presented in Figure 1.

The Project is part of a much larger development plan which will eventually see the establishment of several supporting facilities within a total area of 18.433 acres of land, of which Tract 'HTS' and neighbouring land Tract 'OGS' will be combined (see survey plan in Appendix 1). This development will feature the Hospitality and Tourism Institute (HTTI), the Oil and Gas Training College and the Port Mourant Training College will be located on the same plot of land on separate tracts. Based on the drone image provided in Figure 2.

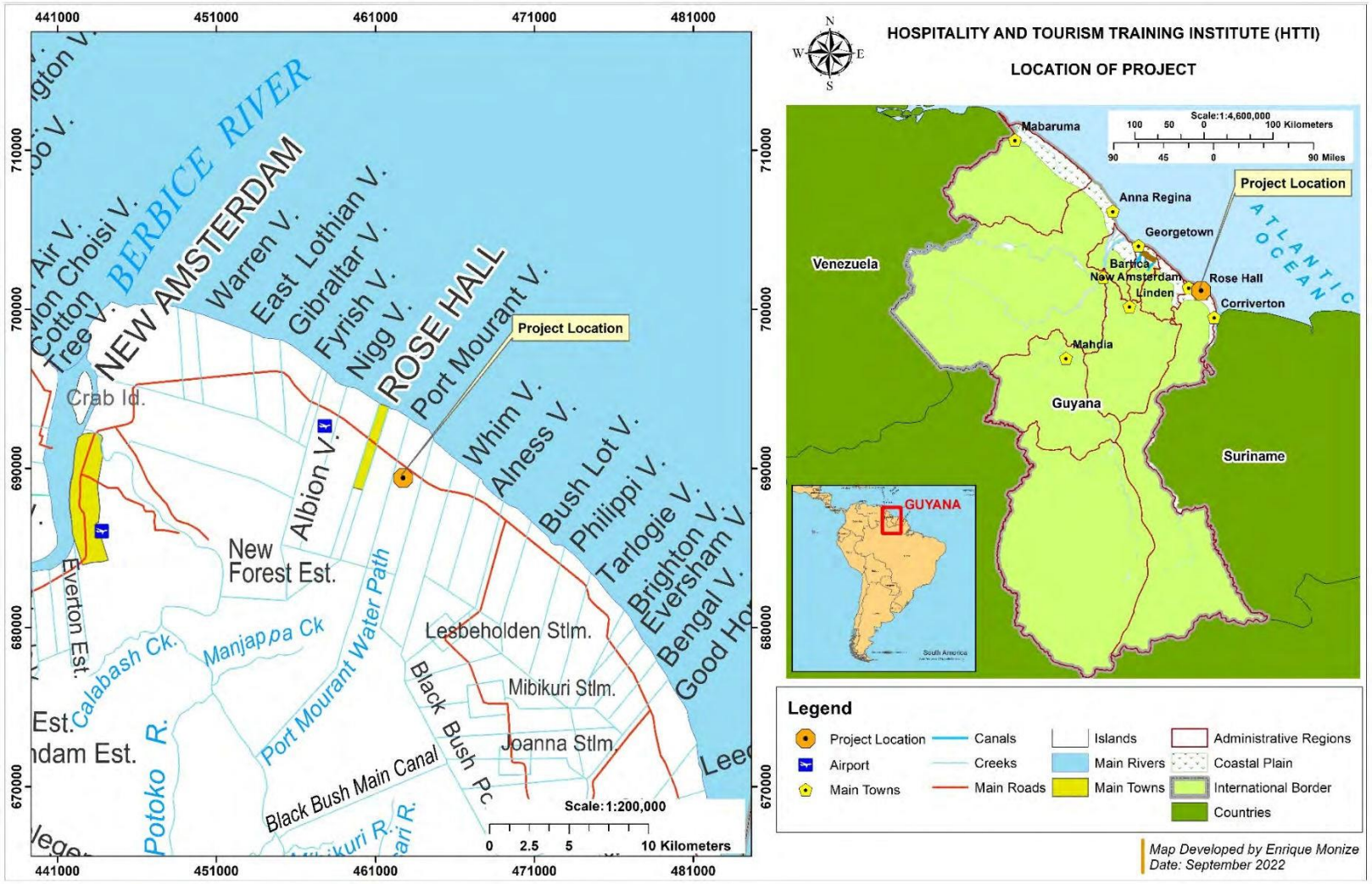


Figure 1: Proposed Location of the GTTCI at Port Mourant

Figure 2: Aerial view of the Proposed Location of the GTTCI at Port Mourant

Figure 3: Master Plan of the Guyana Technical Training College Campus in context with other planned developments

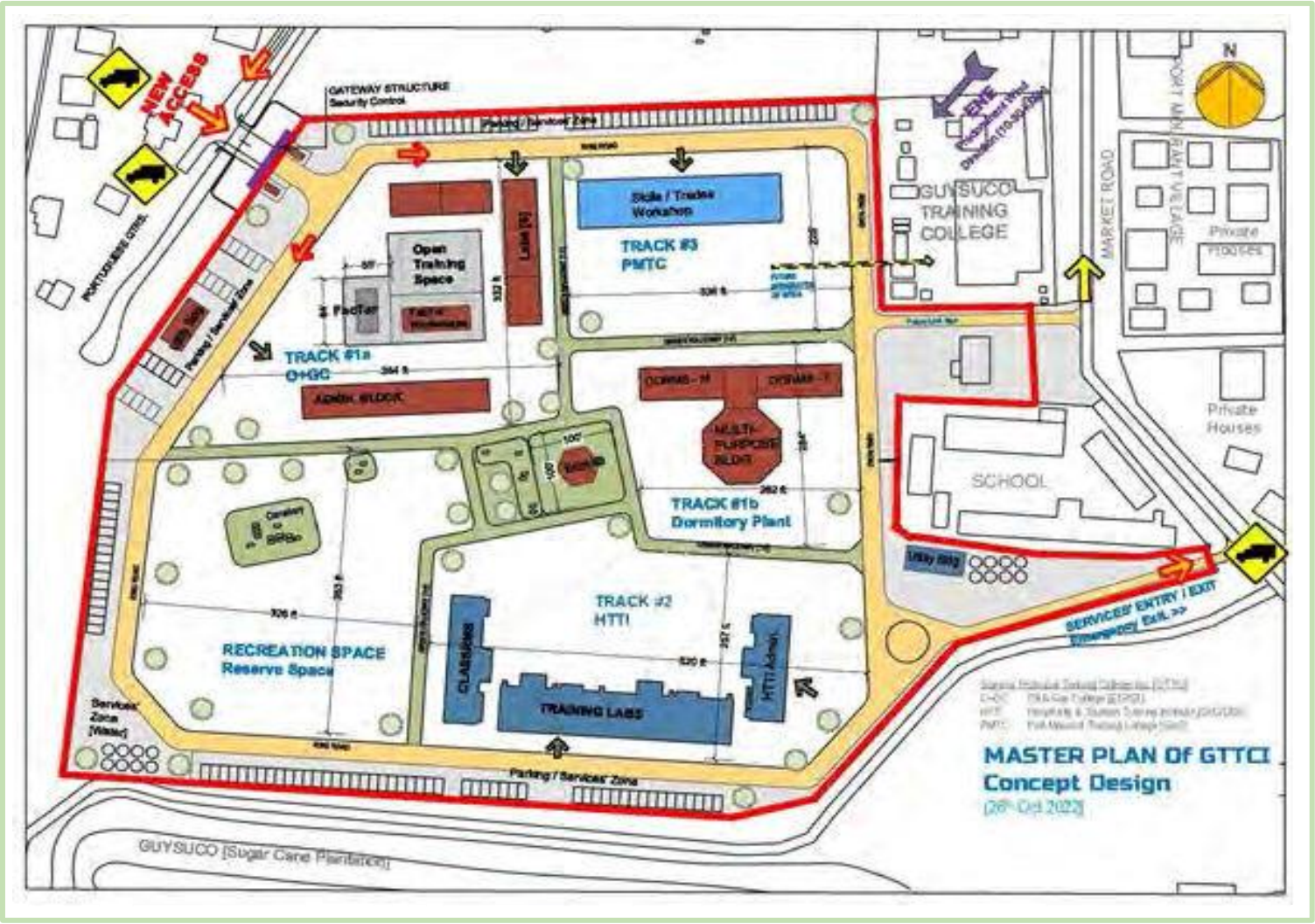


Figure 4: Master Plan of the Guyana Technical Training College Campus in context with other planned developments

1.3. Project Rationale and Scope

The GTTCI is intended to prepare personnel for industry-level training equivalent to that of the rest of the Caribbean Region such as CVQ, to enable access to opportunities at technical and supervisory level positions in the oil and gas sector and hospitality and accommodation sector to utilize the skills acquired in the more mature regional market. The institute is seen as a necessity for the development of advanced skills in both sectors, for building supervisory and management level capacity, and even as preparation for higher education degrees. Personnel trained will contribute to filling current and emergent gaps in the growing tourism and hospitality and oil and gas sector.

1.4. Area of Influence

The project's Area of Influence (AoI) has been identified as including the project footprint and extending to 50 metres around the actual GTTCI project site.

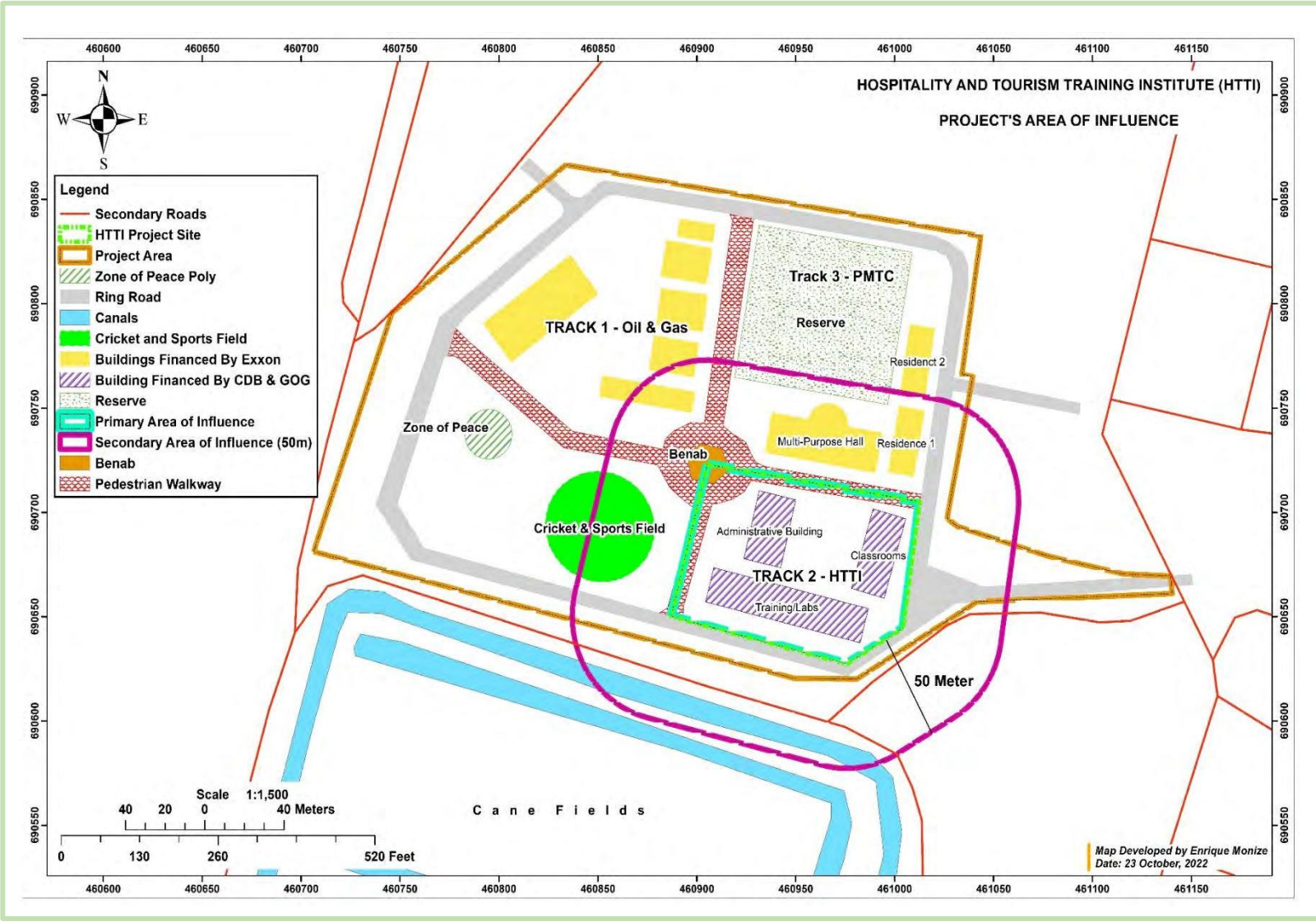
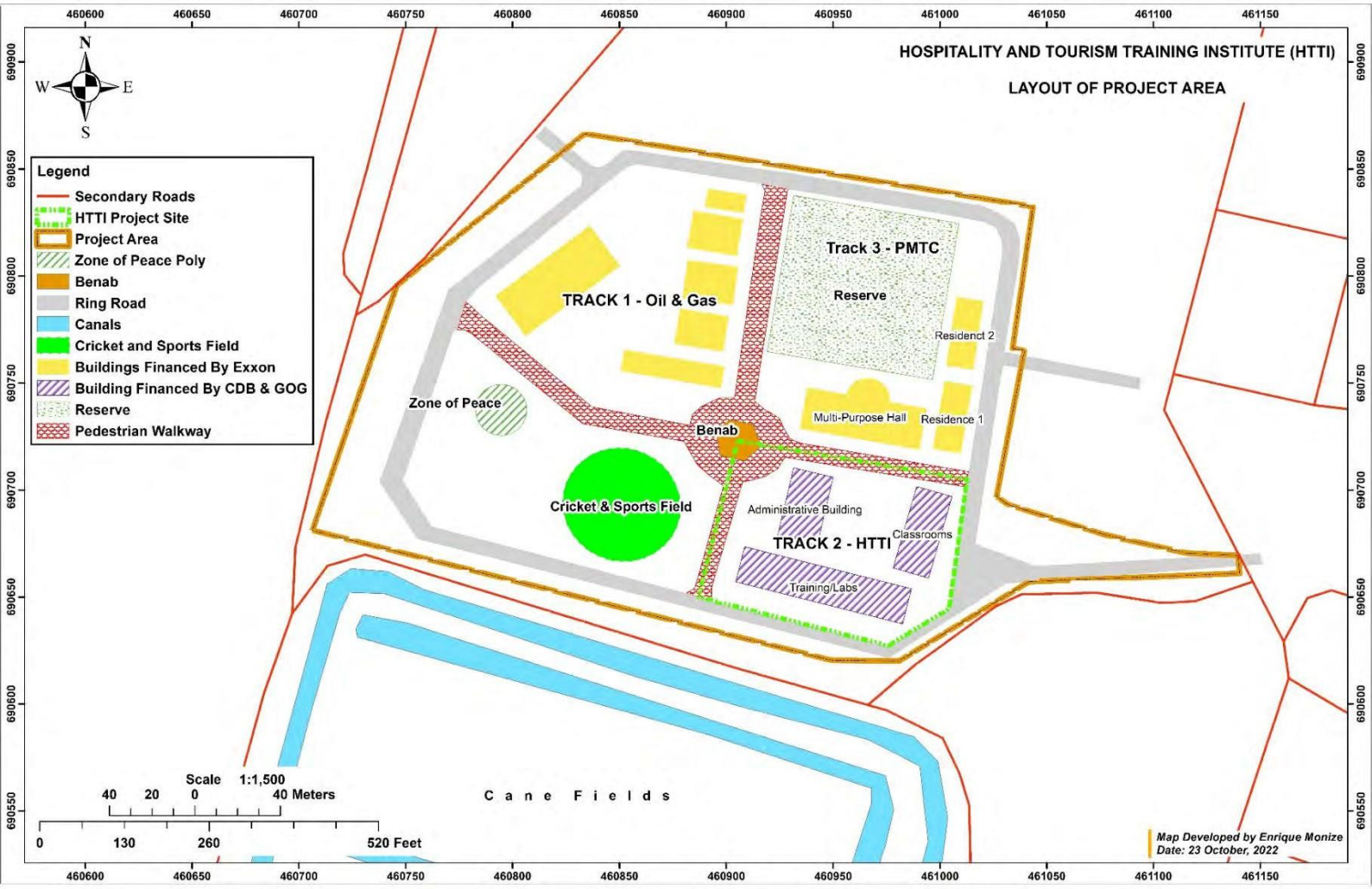


Figure 5: AoI of the GTTCI Project



2.1. Key Construction Activities

The key construction activities will include:

- Mobilizing plants and equipment
- Setting up work camps and construction yards
- Transporting and stockpiling materials
- Clearing and grubbing
- Excavation and earthworks
- Structural works
- Landscaping
- Utility installation
- Site rehabilitation and clean-up

3.1. Baseline Data

This section describes the environmental and socio-economic baseline conditions of the Project's Area of Influence (AOI), prior to the commencement of the Project. The baseline provides a basis to estimate potential impacts of the Project and information that is critical to decision-making, regarding Project construction and operation, mitigation measures and monitoring programs. Baseline conditions of the Project's Area of Influence (AOI) were therefore examined under three categories which include: the physical, biological and socio-economic settings.

The primary information sources used to establish the environmental and socio-economic baseline conditions were:

- Detailed site reconnaissance of the Project site;
- Collection and analysis of environmental and social baseline data; and
- Review of existing data, documents and reports.

Primary baseline data obtained through studies conducted by the team include:

- Water Quality Analyses;
- Noise Level Measurements;
- Air Quality Testing;
- Biological Assessment;
- Socio-economic Assessment and
- Gender Analysis.

3.2. Physical Environment and Biodiversity Services

3.2.1 Climate

Just near the equator from about 5^0 North and 5^0 South, the north-east trade winds and the south-east trade winds converge in a low-pressure zone known as the Inter Tropical Convergence Zone (ITCZ). Guyana is uniquely positioned within this zone of convergence; and as such, its weather and climatic conditions are heavily influenced by the seasonal shifts of this zone. The movement of the ITCZ over Guyana's coast, where the project area is located, brings with it heavy rainfall that coincides with the rainy seasons generally occurring between May to August, and November to January. Meanwhile, when the ITCZ lies outside of Guyana's borders from February to April; and August to October much lower levels of precipitation are experienced, which coincide with the two (2) dry seasons experienced. Annual rainfall is approximately 2000-2600 mm. The intensity of rainfall at the project area varies throughout the year with an average annual rainfall of 2000 mm. February to April and September to November are the driest periods of the year. Rainfall data for the last three years was obtained from the Hydrometeorological Department for the Whales Weather Station, which is the closest weather station to the project area.

4.1 Approach to Environmental and Social Risk Assessment

Prior to the identification and analysis of potential project impacts, a detailed examination of the baseline characteristics was carried out for the three components of the existing environment, the physical, biological, and socio-economic. The potential impacts of the proposed project features and activities on the existing environment were evaluated as part of this assessment. A qualitative analysis was carried out utilizing the experience and expertise of the respective specialists to determine the potential negative and positive impacts related to specific aspects of the proposed project.

4.1.1Risk Scale

The full ranges of potential impacts were examined to determine qualitatively the potential impacts based on the following criteria.

- Direction - positive or negative
- Magnitude - large or small
- Duration - long or short term
- Location - direct or indirect
- Extent - wide or local
- Significance - low or high

Key	
Negative	**Positive**

The impact analysis divided the proposed project activities into three categories, a design phase, a construction phase and an operational and maintenance phase. The potential impact criteria were applied for specific activities that will occur in each phase of the project.

An impact matrix is presented to summarize the potential impacts of specific activities of the project using the above criteria. The potential impacts indicated in the impact matrix are discussed below in terms of the activity responsible for the impact for each phase of the project. Recommendations are presented in the Environmental Management Plan (EMP) for reducing and mitigating potential negative impacts as well as maximizing the expected positive impacts.

Table 1:Environmental Impacts during Construction Phase of the Project

CONSTRUCTION PHASE	Component			Criteria				Location	Extent		Significance		
				Magnitude		Duration							
Activities & Effects	**Physical**	**Biological**	**Socio-economic**	**Low**	**High**	**Short Term**	**Long Term**	**Direct**	**Indirect**	**Local**	**Wide**	**Low**	**High**
Site Clearance and Construction													
Soil Erosion, Compaction Contamination	■			■		■		■		■		■	
Air Quality	■		■	■		■		■		■		■	
Noise and Vibration	■		■	■		■		■		■		■	
Water Quality	■		■	■		■		■	■	■		■	
Removal of Vegetation		■		■		■		■		■		■	
Loss of Fauna		■		■		■		■		■		■	
Waste Generation	■	■	■	■		■		■		■		■	

Table 2:Environmental Impacts during Operation Phase of the Project

OPERATION PHASE	Component			Criteria				Location	Extent		Significance		
				Magnitude		Duration							
Activities & Effects	**Physical**	**Biological**	**Socio-economic**	**Low**	**High**	**Short Term**	**Long Term**	**Direct**	**Indirect**	**Local**	**Wide**	**Low**	**High**
Operational and Maintenance													
Air Quality													
Noise													
Water Quality													
Waste													

4.2 Environmental Impacts in Design Phase

The Project impacting actions of the planning and pre-construction phase will be related to the prior disclosure of the Project, the acquisition of land for the Project; and Project design activities such as topographic, geotechnical, and environmental surveys.

The Project land is owned by GoG/GUYSUCO. A transfer is in process for ownership to the The Client and legal transport is in process.

Project design activities included conducting environmental field surveys, social surveys, gender analysis, as well as topographic, and geotechnical surveys. Personnel involved in these activities accessed the Project area via vehicle and foot. Minor vegetation clearing and trampling by vehicles and personnel occurred during surveys. Care was taken not to trample or inadvertently cause the destruction of any cultural artifacts that may have been encountered during the conduct of field surveys. Impacts related to the planning and pre-construction phase are consequently limited to potential impacts from personnel and vehicle access to the Project area. The magnitude of these impacts on the physical and biological settings of the Project Area are therefore low and short term with low significance.

4.3 Environmental Impacts in Construction Phase

Recommendations are presented for reducing and mitigating potential negative impacts as well as maximising the expected positive impacts.

4.3.1 Physical Environment

4.3.1.1 Erosion, Compaction and Contamination

Impact Description and Analysis

Site clearance and excavation works will involve the use of heavy earth moving equipment to clear existing vegetation and remains of existing buildings on-site. This activity will expose the soil to the elements and make cleared areas vulnerable to erosion by surface-runoff and wind. Eroded topsoil could result in the washing of nutrients contained in the soils. The erosive processes also degrade the remaining soil, decreasing its fertility and productivity. Eroded soil may cause vegetation regeneration to be difficult in affected areas and may ultimately affect landscape replanting within the site. Soil erosion could also result from the storage of excavated materials and stockpiles, areas excavated for source materials, and other associated construction activities and facilities such as staging areas.

Unchecked soil erosion could also lead to excess sediment discharge to the receiving drains, which has the potential to reduce water quality as well as impede the drainage flow within site drains. This could increase water turbidity levels and sediment deposits in nearby drains and canals, particularly the major irrigation canals used by GUYSUCO.

Soil erosion impacts are however, anticipated to be low in magnitude and significance as a consequence of the

cohesive nature of the clay soils of the site. Also, based on the construction approach this impact will be localized, short term and limited to the construction phase.

The movement of heavy equipment during construction activities may result in the rutting and compaction of soils. Soil compaction can lead to soils losing their vegetation regeneration and infiltration capacity. Impacts to soil from rutting and compaction are expected to be restricted to the areas designated for construction access and haul routes. These impacts are expected to be low in magnitude and significance. Compacted areas will be scarified, where required.

Improper management of non-hazardous and hazardous waste and other hazardous materials, including fuel and lubricants, chemicals and pesticides and sewage waste, fuel and waste oils during construction and lifetime operations may result in soil contamination. This impact is expected to be minor and low in both magnitude and significance.

The landscape of the Project is flat. The average site level is 16:00 AD. No changes in topography will occur at the Project site as a result of construction works. No mitigation is required. Moreover, construction activities will not require excavation to depths that will impact the geologic soil strata of the Project site.

4.3.1.2 Air Quality

Impact Description and Analysis

The two principle potential impacts on air quality at the Project site during land clearing and construction operations are dust emissions and emissions (of NOx, SOx, particulate matter) from internal combustion engines.

A snapshot of the air quality with regards to PM 2.5 and PM 10 is generally good having recorded low levels of 3.0 and 4.1 respectively. These levels are significantly below the World Health Organization (WHO) air quality guidelines for PM 10 (Annual Average 20 ug/m3; 24- hour Average 50 ug/m3), and PM 2.5 (Annual Average 10 ug/m3; 24-hour Average 25 ug/m3). In addition, there are no major industries within proximity of the Project site and ambient air quality is directly related to the emission of dust as a result of vehicles traversing along the access road immediately south of the site and vehicle exhaust emissions.

Dust emissions during construction works will result from bare areas, material stockpiles, vehicles transporting aggregates, loading, and offloading of trucks, excavation and grading, and from the construction support facilities such as staging areas and spoil disposal areas.

Dust generated at the site would be greater during dry periods and will be a function of construction activities, soil type, moisture content, wind speed, frequency of precipitation, vehicle traffic and vehicle type. Workers and residents exposed to prolong dust pollution could develop acute respiratory ailments. Dust emissions may also impair the line of sight of workers and road users and could also pose a nuisance for receptor properties downwind of the works.

Construction activities will also result in combustion emissions from the use of diesel and/or gasoline fired construction heavy equipment, and generators. Combustion emissions during construction will be short-term and would be in the area of the vicinity of construction operations only. Combustion emissions during operations will be from the back-up diesel powered generator.

Although there is the likelihood of increased dust and combustion emissions during land clearing and construction activities, the impacts are expected to be low and short term with low significance. This impact is also expected to be localized and limited to the construction phase.

4.3.1.3 Noise and Vibration

Impact Description and Analysis

The use of heavy equipment during site clearance and construction works will generate above normal noise levels. The dominant source of noise from most construction equipment is the engine, usually fuelled by diesel, and often without sufficient muffling. In a few cases, such as impact pile-driving or pavement-breaking, noise generated by the process dominates. The noise levels generated by construction equipment will vary greatly depending on factors such as the type of equipment, the specific model, the operation being performed, and the condition of the equipment. The equivalent sound level of the construction activity also depends on the fraction of time that the equipment is operated over the period of construction. The EPA has in collaboration with the GNBS developed interim noise standards which stipulate permissible levels from activities within specific categories as listed in Section 3.2.3:

Based on noise sampling done, there is already a significant ambient noise level consistent with a built-up area according to GNBS noise limits. Highest recordings during the day were 72.3 and 67.3 dB. These limits are well below the recommended levels but are likely to increase once construction work commences. Noise levels recorded were mainly influenced by the school next door along with the regular vehicular traffic traversing the public road north of the project site. Exposure to excessive noise levels can cause noise induced hearing loss, fatigue, tiredness, and decreased production levels of workers.

Construction activities may generate vibrations from soil compaction piling works and the movement of heavy machinery. Excessive noise and vibration may also affect birds within the area. It is expected that birds will move away from Project works areas. These impacts are expected to be low and short term with low significance.

4.3.1.4 Water Quality

Impact Description and Analysis

Water quality may be affected during construction activities and eventually during operation activities. It may also be affected by the occurrence of non-routine events. During the construction phase the use of oils and fuel by vehicles and construction machinery and the generation of waste oil from equipment maintenance have the potential to cause contamination of surface water resources in the event of accidental leaks or spills. Covering the site with pavement and buildings will generate increased rainwater runoff from the site which could convey stray oils and other contaminants from site surfaces to adjacent waterways if not properly controlled. The impacts are expected to be low and short term with low significance. This impact is also expected to be localized and limited to the construction phase. The impact is therefore categorized as of low significance.

4.3.2 Biological Environment

4.3.2.1 Loss of Vegetation

Impact Description and Analysis

The clearing and removal of trees and vegetation to facilitate construction will result in the loss of a part of the existing vegetative cover and, consequently, a reduction of arboreal habitat. The site has been an active ecosystem and the vegetation in the area is typical of coastal areas and areas that have been disturbed by humans. The vegetation present was primarily weeds that are found in almost all coastal and human disturbed areas. The removal of these vegetation will not create any undue threat to the stability of the land and will improve the aesthetics and safety for persons living and traversing the area.

Based on the vegetation distribution and the presence of non-sensitive habitat or rare, threatened, or endangered species, removal of vegetation will not constitute a significant impact although there will be loss of habitat.

4.3.2.2 Loss of Habitat - Fauna

Impact Description and Analysis

With respect to fauna, noise, vibrations, and intrusive activities related to construction will affect and scare away terrestrial and avi-fauna. The fauna that was observed were all highly mobile and migratory species that easily adapt to changing environments. Most fauna observed were avian fauna which are common to human inhabited areas along Guyana's coast.

During the construction phase the fauna may in extreme cases migrate due to the loss of feeding and nesting habitats. However, they will find suitable habitats nearby since suitable habitats are in close proximity. It is also anticipated that they will return when construction is complete and when the disturbance due to noise from construction no longer exists. Also, the species that will be displaced are not considered to be rare, threatened, or endangered. Given the low species diversity and species richness at the site, any disruption because of construction and operation will have little impact on the environment and the fauna.

4.3.2.3 Aquatic System

Impact Description and Analysis

Apart from the main irrigation and drainage canals located mostly south of the Project Area, there are no major sensitive aquatic systems in close proximity, therefore no detailed analysis was required, since no direct impact from the project is expected. It should be noted that there would be no direct discharge of effluent or other waste into nearby ecosystems. Within the Project Site itself, there are no major aquatic systems nor any fish or aquatic species of significant environmental or ecological importance. The aquatic species of vegetation present are considered aquatic weeds that are usually removed since they tend to obstruct flow of water.

The drains at the project site will be reconfigured in the engineering works of the facility during the construction phase.

4.3.3 Waste Generation

Impact Description and Analysis

During construction, solid waste will comprise domestic waste and construction waste from the plant area. Domestic waste quantities are expected to total approximately 20 lbs/day during the peak construction (60 personnel on site). Construction waste will depend on a range of variables that cannot be defined exactly at this stage of the environmental impact study. However, it is expected to include:

- Soil (excavated or surplus);
- Packaging materials (imported and local plastic, cardboard, paper and pallets);
- Damaged products (plasterboard, bricks, tiles, etc.);
- Packing timber;
- Geotextiles;
- Paving materials;
- Electrical cable off-cuts;
- Concrete; and
- Miscellaneous containers, paint cans, solvent containers, aerosol cans, adhesive, and lubricant containers;

Liquid Waste (Effluent) waste to be generated during the project will include blackwater (sewage effluent) and greywater (domestic/non-sewage wastewater). This waste will require proper management measures to avoid any significant impacts to nearby water bodies.

Several categories of hazardous waste will also be generated during the project that will have to be managed, these wastes include the following:

- Waste oil
- Waste oil filters
- Lubricants
- Hydraulic fluids
- Medical waste from injuries/accidents

Poor management of the above categories of waste can result in soil and water contamination, contribute to ill health, and affect the aesthetic of the general area. Waste piles often present an eyesore and can affect the aesthetic of any environment. The improper disposal of waste, especially kitchen and food waste can result in odour and attraction of vermin.

4.4 Environmental Impacts in Operation and Maintenance Phase

4.4.1 Physical Environment

4.4.1.1 Air Quality

Impact Discussion

The operation of the GTTCI may cause increased air emissions from traffic traversing to and from the facility and via the use of generators during power outages. Emissions may also occur in the event of an emergency. Accidents, fire and explosion, and inappropriate waste disposal will be a major concern. Open burning of solid waste can also create significant impacts to air quality.

Under normal operating conditions, it is expected that the air emissions will not have significant impacts on the surrounding environment. Minor impacts may affect social receptors (neighbouring village and personnel) for short periods during.

4.4.1.2 Noise

Impact Discussion

Noise pollution may be an issue throughout the operational phase and particularly during certain maintenance activities.

Impacts could result from the following environmental aspects:

- Increased traffic during peak hours;
- Use of generator and other noise making equipment; and
- Student outdoor activities; and
- Accidental triggering of security alarm system.

4.4.1.3 Water Quality

Impact Discussion

Accidental exceedance of certain parameter concentrations in domestic wastewater may lead to release of nutrients into nearby drainage and irrigation canals. This may cause excessive growth of algae, known as Eutrophication. The quantities of certain flora aquatic species may increase, hence compromising the existing drainage and irrigation system within the surrounding area. Also, at high nutrient levels, accumulation of decomposing plant material typically leads to reduced oxygen conditions in which only bacteria thrive. The impact of an enhanced nutrient load is that algae growth rates increase and can form nuisance blooms.

Generally, these blooms are not harmful, but reduce the aesthetic value of the area and can lead to an increase in the Biological Oxygen Demand of the water column when the bloom dies off. However, in some cases the blooms can be formed by toxic algae that can be potentially dangerous for humans. The toxins pass through the food chain from micro-algae to fish, and finally to humans.

4.4.1.4 Waste

Impact Discussion

A large industrial site such as the proposed GTTCI, will typically generate a large quantity of domestic or "household" waste. This includes plastics, clean cardboard boxes from deliveries to stores, and food scraps in addition to process related solid wastes and other solid wastes.

Liquid Waste (Effluent) waste to be generated during the operational phase are likely to mirror those outlined for the construction phase and as such will include blackwater (sewage effluent) and greywater (domestic/non-sewage wastewater). This waste will require proper management measures to avoid any significant impacts to nearby water bodies, particularly since the operational phase is likely to see an increased effluents over a long period of time.

Several categories of hazardous waste will also be generated during operation of the GTTCI that will have to be managed, these wastes include the follows:

- Waste oil
- Waste oil filters
- Lubricants
- Medical waste from injuries/accidents

Furthermore, some additional solid waste will be generated during maintenance such as: miscellaneous containers, paint cans, solvent containers, aerosol cans, adhesive, and lubricant containers.

Poor management of the above categories of waste can result in soil and water contamination, contribute to ill health, and affect the aesthetic of the general area. Waste piles often present an eyesore and can affect the aesthetic of any environment. The improper disposal of waste, especially kitchen and food waste can result in odour and attraction of vermin.

5.0. Environmental and Social Management Plan (ESMP)

This Environmental and Social Management Plan (ESMP) has been prepared to guide the construction, operational and maintenance activities by recommending measures to address the environmental, social and health and safety issues related to the GTTCI Project. Activities to be undertaken in an effort to prevent, minimize and manage the principal adverse effects of the project are identified and recommended.

5.1 Mitigation of Impacts in Design Phase

No significant impact was identified for activities during the design phase of the Project as such, mitigation measures are not required for this phase of the Project.

5.2 Mitigation of Impacts in Construction Phase

5.2.1 Physical Impacts

Impacts to the physical environment are expected to be short term, localized and mostly mitigable with no significant adverse impacts foreseen. This section outlines the recommended measures which can be implemented to ensure that all physical impacts identified in this phase of the Project are prevented or minimized.

5.2.2 Soil (Erosion, Compaction and Contamination)

The following actions are recommended to avoid and mitigate against erosion:

- Temporarily bund exposed soil, placement of silt fences at property lines and the use of construction crushed rock at entrances and inlets;
- Monitor areas of exposed soil during periods of heavy rainfall throughout the remaining construction phase;
- Cover large material stockpiles during periods of heavy rainfall with tarpaulin; and
- Place silt traps in vulnerable areas.

In additional to the above measures, erosion control operations should be performed under favourable weather conditions. Erosion control materials should not be applied in adverse weather conditions which could affect their performance.

Runoff will not be discharged from the site in quantities or at velocities substantially above those which occurred before the commencement of construction works.

Earthworks will be avoided during periods of heavy rainfall. Storm water run-off over exposed soil surfaces will be along pre-established paths and will contain breakers and other devices to control flow velocity, as well as silt traps/fences to the extent practical.

Structures for erosion and sediment control will be installed as conditions require. Temporary erosion and sediment control structures should be implemented as required throughout construction during the time permanent structures are not installed, to minimize and regulate

surface run-off over exposed soil surfaces. Temporary erosion and sediment control devices should be replaced with permanent structures as construction progress.

Compaction of soil should be avoided in areas where the project does not extend to minimize soil compaction in these areas. After the construction phase, surrounding soil should me tilled and landscaped to allow absorption and slow the rate of water runoff.

The following management and control measures are recommended to minimise the impact to soil due to generation of solid waste during construction and operation phases:

- solid wastes (combustible or non-combustible) generated should be collected through a solid waste management system.
- All hazardous wastes generated by the Project during construction should be transported to an approved waste disposal facility outside of the Project area.
- Waste lubricants, lube oil and/or solvents should be re-used, recycled or disposed in environmentally appropriate ways.

5.2.3 Air Quality

The following measures should be implemented to reduce the impact to air quality:

- Truck drivers and operators should be instructed to reduce their speed when traversing dusty roads during dry conditions to minimize dust generation.
- Dusty roadways, particularly roads which have been graded should be soaked regularly.
- Personnel working within dusty environments or operating equipment that generates dust such as cement mixer should be required to use dust masks or respirators.

5.2.3.1 Trucks transporting sand to construction sites should be covered.

- Sand stockpiles should be kept to a minimum height and covered if required.
- Stockpile areas should be in areas away and downwind from residents.
- All heavy-duty vehicles and equipment engines should be operated and maintained in accordance with the manufacturer's operating specifications and should be serviced regularly to reduce the levels of combustion gases.
- Operators of heavy-duty equipment should be instructed to minimize excessive idling of the same.
- There should be no burning of garbage onsite.
- Maximise on the number of trips when transporting materials and workers between work sites.

5.2.4 Noise and Vibration

The following are recommended measures that should be implemented to reduce noise levels and nuisance:

- Generators and other noisy equipment should be sited at a distance away from the nearest occupied building and general work areas and should only be in use when necessary.
- Noisy activities should be scheduled for daylight hours. Night works should be avoided.

- Noise levels should be controlled at the source via installation of silencers and mufflers on exhaust systems. Efforts should be made to ensure machinery and equipment are working efficiently.
- Noisy equipment such as generator should be enclosed in sound proofing material, if necessary.
- Personal Protective Equipment should be provided to employees exposed to high noise levels.
- Noise levels should not exceed 90 dB during the day and 75 dB at nights.
- Noise levels should be monitored on a periodic basis to ensure minimal impacts.

5.2.5 Water Quality

- The following measures are recommended to prevent surface water contamination from discharges during construction phase:
- All activities should prevent the release of any contaminant that might enter the surface water.
- Adequate emergency spill response should be in place.
- Good housekeeping should be practiced during construction to avoid spreading litter and wastes from human/construction activities.

5.2.6 Biological Environment

5.2.6.1 Loss of Vegetation

The following actions are recommended to avoid and mitigate against loss of vegetation:

- Landscaping of the project site is important to restore vegetative cover to unpaved areas and should also use native flowering plants to provide habitat and host plants for some species.
- Vegetation planted for landscaping and for aesthetic appeal should be maintained, and a maintenance programme should be established and implemented.
- Vegetation selected should be based on suitability, habitat, flowering plants and shrubs.

5.2.6.2 Loss of Habitat - Fauna

The following actions are recommended to avoid and mitigate against loss of fauna:

- Landscaping component should include species of trees that will attract avian species by providing feeding and nesting habitats.
- Species chosen to re-vegetate the site should serve both a landscape function and a habitat function without compromising either.

5.2.6.3 Aquatic System

Aquatic systems within proximity to the project site are not limited to the project environment but are vast and extend way beyond the project area. Within the Project site itself, there are no major aquatic systems nor any fish or aquatic species of significant environmental or ecological importance. The aquatic species of vegetation present are considered aquatic weeds that are usually removed since they tend to obstruct flow of water, as such no mitigation is required.

5.3 Mitigation of Impacts in Operation and Maintenance Phase

5.3.1 Physical Impacts

This section outlines the recommended measures which can be implemented to ensure that all physical impacts identified in this phase of the Project are prevented or minimized.

5.3.1.1 Air Quality

The following measures should be implemented to reduce the impact to air quality:

- There should be no burning of garbage onsite.
- Generators should be placed in an enclosed area well away from the nearest building with the exhaust pipe running placed on the tallest building in the compound.

5.3.1.2 Noise and Vibration

The following are recommended measures that should be implemented to reduce noise levels and nuisance:

- Generators and other noisy equipment should be sited at a distance away from the nearest occupied building and general work areas and should only be in use when necessary;
- Noisy activities should be scheduled for daylight hours;
- Noise levels should be controlled at the source via installation of silencers and mufflers on exhaust systems;
- Noisy equipment such as generator should be enclosed in sound proofing material;
- Personal Protective Equipment should be provided to employees exposed to high noise levels;
- Noise levels should not exceed 90 dB during the day and 75 dB at nights; and
- Noise levels should be monitored on a periodic basis to ensure minimal impacts.

5.3.1.3 Water Quality

The following measures are recommended to prevent surface water contamination from discharges during the operation and maintenance phase:

- All activities should prevent the release of any contaminant that might enter the surface water;
- Adequate emergency spill response should be in place at the GTTCI; and
- Good housekeeping should be practiced during construction to avoid spreading litter and wastes from human/construction activities.

5.3.1.4 Biological Environment

5.3.1.4.1 Loss of Vegetation

The following actions are recommended to avoid and mitigate against loss of vegetation:

- Landscaping of the project site is important to restore vegetative cover to unpaved areas and should also use native flowering plants to provide habitat and host plants for some species.
- Vegetation planted for landscaping and for aesthetic appeal should be maintained, and a maintenance programme should be established and implemented.
- Vegetation selected should be based on suitability, habitat, flowering plants and shrubs.

5.3.1.4.2 Loss of Habitat - Fauna

The following actions are recommended to avoid and mitigate against loss of fauna:

- Landscaping component should include species of trees that will attract avian species by providing feeding and nesting habitats.
- Species chosen to re-vegetate the site should serve both a landscape function and a habitat function without compromising either.

5.3.1.4.3 Aquatic System

Aquatic systems within proximity to the project site are not limited to the project environment but are vast and extend way beyond the project area. Within the Project site itself, there are no major aquatic systems nor any fish or aquatic species of significant environmental or ecological importance. The aquatic species of vegetation present are considered aquatic weeds that are usually removed since they tend to obstruct flow of water, as such no mitigation is required.

5.4 Waste Management

Based on the impacts identified, the project will generate waste in both the construction and operation phases, which, if not managed properly, can result in soil and water contamination, contribute to ill health, and affect the aesthetic of the general area. Waste piles often present an eyesore and can affect the aesthetic of any environment. The improper disposal of waste, especially kitchen and food waste can result in odour and attraction of vermin. Waste to be generated includes domestic garbage, which usually consists of a mix of bottles, bags, cans, boxes, plant residues, excess food and kitchen scraps and old clothing and paper. These will mainly be generated by construction staff daily. Liquid waste will also be generated including sewage waste and wastewater from washing. Hazardous waste to be generated includes waste oil, filters and oil containers which if not properly managed can result in water and soil contamination. Construction waste is also expected to be generated in large quantities and would include wood, form boards, cut steel, broken concrete, etc. Materials which could be reused can be given to persons from the communities if requested or be transported back to the contractors' head offices. Other recommendations for disposal of these waste are outlined in Table 35.

Table 3: Disposal Management/Recommendations

Waste Category	Waste Type	Disposal Method
	Kitchen Waste	Domestic waste generated from kitchens, where construction workers would be temporarily housed, should be collected in bins for disposal at an approved landfill site.
	Cardboard/Paper	A small volume of these materials is expected and would mainly be generated from packaging of construction materials. These should be collected in covered bins and further disposed of at an approved landfill site.

Waste Category	Waste Type	Disposal Method
Solid Waste	Plastic Bottles/Cans	These materials should be collected in covered bins and further disposed of at an approved landfill site.
	Soil (excavated or surplus); Packaging materials (imported and local plastic; pallets); Damaged products (plasterboard, bricks, tiles, etc.); Packing timber; Geotextiles; Paving materials; Electrical cable off-cuts; and Concrete;	These materials are expected to be generated in large quantities. Materials which could be reused can be given to staff or persons from the communities if requested or be transported back the contractors' storage for reuse. Excess and damaged materials along with other construction wastes can be dumped in dumpsters until accumulated and can be disposed of at an approved dumpsite.
Liquid Waste	Greywater - Waste Water from Kitchen/Bathing Facilities	Wastewater from these facilities should be drained into a soak away system.
	Sewage/Blackwater	All temporary toilets such as those to be used at site offices or workers housing should be connected to removable septic tanks. These septic tanks should be equipped with multiple phase faeces process which eliminates the likeliness of solid wastes discharge with effluence. For example, the 'Royal Septic Tank' which is available in Guyana comes with a four phase faeces process that allows for the complete separation of sewage and grey water through a displacement system and as such eliminates the need for further mechanisms such as soak away systems. Effluent can be discharged into large bodies of drainage water to be easily displaced.Portable toilets can also be utilised at the worksites. These should be well maintained. An adequate number of portable toilets should be provided based on the number of workers at the site.Septic tanks of sufficient size should be constructed for disposal of sewage at the GTTCI. These should be constructed in accordance with the GNBS Code of

Waste Category	Waste Type	Disposal Method
		Practice for the Design and Construction of Septic Tanks and Associated Secondary Treatment and Disposal Systems.
	Waste Oil	Waste oil collected during servicing of equipment should be stored in sealed plastic containers and disposed of by an approved hazardous waste management firm.
	Oily Rags/Filters	The quantity of oily rags, oil and fuel filters to be generated is expected to be minimal and will be mainly generated from servicing of equipment. The contractors will therefore be required to store these in sealed plastic containers and disposed of at an approved landfill site or burn in an incinerator.
	Contaminated Soil	Soil, which may become contaminated due to accidental spills of oil, fuel and other such hazardous chemicals, should be excavated and stored securely in plastic containers and be disposed of at an approved landfill or kept until the contaminant has been broken down by bacteria. This can also be disposed of by an approved hazardous waste management firm.

5.5 Fuel, Lubricants, and other Hazardous Materials

Fuel and lubricants are classified as hazardous materials and require special consideration in their transportation, storage and handling. Improper management of these materials can result in spills and leakage which can contaminate soil and water resources or even result in fires. However, given the works to be conducted during the construction of the GTTCI it is not expected that there will be the need for significant amount of fuel and therefore fuel storage onsite should be limited. Nevertheless, the following measures should be implemented during both the construction and operational phases to ensure the likelihood of contamination of soil or water from spillages or leakages as well as risks of a fire are minimized:

- All fuel, lubricants, waste oil and empty fuel containers should be stored within a contained designated area which should be impervious.
- Significant amount of fuel should not be stored onsite but should be brought as required. This will eliminate the need for extensive storage facilities and reduce the risk of contamination from spills and leaks.

- Employees should be properly trained in handling of fuel and in refuelling practices.
- Spill kits should be made available to contain and clean up any spillages occurring. The kits should be placed in strategic locations that are easily accessible. Workers, mechanics and other staff should be trained on how to utilize spill kits.

  - Fuel storage areas should have the necessary warning/caution signs in place including 'No Smoking' and 'Flammable Area'.
  - Fire extinguishers and sand buckets should be made available within proximity to the fuel storage area.
  - Fuel storage areas should be sited at a safe distance from any drain, offices and work areas.
  - All fuel storage containers should be adequately labelled.
  - All used oil and grease should be collected and disposed of appropriately.
  - Care should be taken to prevent spillage and leakage of fuel during off loading and refuelling. When refuelling is completed, all nozzles, hoses and other materials should be stored in a proper manner to avoid spills.
  - The storage areas should be checked daily for leaks. Leaks should be immediately reported and corrected.
  - Ground sheets or drip trays should be used in the servicing of machinery and vehicles to capture any spill that may occur.

6.0. ESMP IMPLEMENTATION FRAMEWORK

6.1 Introduction

The ESMP has recommended measures to be implemented to ensure that the potential impacts of the project are prevented or minimised. The The Client Project Executing Unit (PMU), through the Construction Supervision Consultant (CSC), has the overall responsibility of ensuring that the recommended measures are implemented throughout the construction phases. This chapter outlines a framework for the implementation of the measures recommended in the ESMP.

6.2 Management Structure and Environmental Responsibility

A multi layered management system is recommended to ensure compliance with the occupational health and safety, environmental and social requirements, with responsibilities designated at the different levels, including roles for the The Client/PMU, the CSC and the contractor.

As was previously indicated, The Client/PMU, through the CSC, has the overall responsibility of ensuring compliance. In this regard, the CSC should assign an environmental specialist responsible for supervising the implementation of the ESMP and an environmental inspector and Community Liaison Officer responsible for the day-to-day monitoring of the contractor's implementation of the ESMP. These personnel will also be responsible for ensuring the CDB's Safeguard Policies are complied with, that the contractor adheres to the requirements and recommendations outlined in the ESMP are implemented. Oversight can also be provided by The Client/PMU project manager, environmental and social safeguard specialist

Implementation of the environmental and social requirements is the responsibility of the contractor. The contractor will be required to have as part of his/her team an environmental specialist and a social specialist with gender expertise who will be responsible for implementation of the ESMP and the development of a site-specific Contractor's Environmental and Social Management Plan (CESMP). The contractor should also assign an environmental and social (Community Liaison Officer) inspector with responsibility for the day- to-day monitoring of the contractor's implementation of the various Management Plans and Safeguard Policies. This individual will be required to:

- Conduct training of workers in health, safety and environment requirements;
- Liaise with the CSC and/or The Client/PMU Environmental team on compliance;
- Implement the requirements of the ESMP and CESMP;
- Monitor the site for compliance with the requirements and ensure corrective actions are implemented;

-
- Conduct joint monitoring with CSC and/or the The Client/PMU Environmental team;
- Conduct environmental monitoring required to be conducted by the contractor, as outlined in the Monitoring Plan;
- Conduct awareness on the GRM and address any grievances of stakeholders.

- Implement stakeholder engagement activities according to the Plan
- Report on environmental and health and safety compliance; and
- Oversee the clean-up and decommissioning of the worksites upon the completion of works.

6.3 Communication of Environmental and Social Requirements to Bidders

In executing the project, the contractor is required to comply with all national regulatory requirements and best practices, and ensure activities are compliant with the safeguard policies of the CDB. The contractor is required to implement the mitigation measures outlined in this ESMP. Other applicable measures recommended by The Client/PMU, such as the Construction Contractor Specifications (see appendix 2), are also to be implemented. The contractor is required to cover all cost relating to the environmental, social, health and safety requirements. As such, it is imperative that these requirements be clearly communicated in all tender documents. This will ensure that potential contractors are aware of what is required and include the necessary resources including personnel and funds to ensure compliance.

6.4 Training

Prior to the commencement of works the contractor shall conduct an Induction Training for all workers. The training should be conducted by the contractor's Environmental and Social Personnel and cover 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. Specific areas to be targeted in the training of workers should include:

- COVID 19 and Monkeypox Precautionary Measures
- Use of Personal Protective Equipment (PPE)
- Transfer and Storage of Hazardous Materials
- Spill Prevention and Response
- Waste Management
- Emergency Response Equipment and Measures

The Contractor's Environmental and Social Personnel should also conduct regular toolbox session with small groups of staff. This is recommended at least once per week of twice per month. Daily toolbox session could also be conducted by the contractors' engineers or supervisor prior to the commencement of works at the start of each day.

6.5 Monitoring

To ensure compliance by the contractor, monitoring of the construction activities should be conducted by CSC Environmental and Social team. Visits to each worksite should be conducted at least once per week to determine the level of compliance by the contractors. Non-compliances should be identified during these monitoring visits and corrective actions should be recommended.

The contractors are also required to monitor the implementation of the mitigation measures to ensure the works do not negatively affect the environment and that the health and safety of workers, residents and other stakeholders are not compromised. Monitoring is the responsibility of the contractors' Environmental and Social Personnel with support from other senior members of staff. Once non-compliances are detected corrective actions are to be implemented. The contractor is also required to conduct monitoring in accordance with the Monitoring Plans.

Table 4: Environmental Monitoring Plan

Environmental Components	Indicators	Monitoring Schedule
Soil	• Compacted/disturbed land • Erosion • Contamination	Weekly
Water	Visual Observations for: • Discoloration • Sedimentation • Contamination • Unobstructed flow	Daily
	Testing for[1]: • Turbidity • pH • Dissolved Oxygen • Phosphates • Nitrates	Monthly
Noise	Noise levels impacts on workers and surrounding community	Daily
	Measuring decibel levels	Monthly
Air Quality	Dust generation	Daily
	Particulate Matter Testing – $PM_{2.5}$ and PM_{10}	Monthly
Waste Management	• Garbage collection receptacles provided and used by workers. • Waste properly disposed. • No significant accumulation of construction waste.	Weekly

1

Table 5: Social Monitoring Plan

Social Components	Indicators	Frequency
Labour Management	Number of workers (disaggregated by sex, geographic area etc.) Number of workers with valid contracts. Number of trainings provided to workers on OHS, GBV and sexual harassment - The existence of an OHS committee. The presence of OHS personnel. Number of workers provided with PPE - The presence of gender specific sanitary facilities: toilets (separate for men and women), hand washing facilities, waste collection points. Worker fatalities and loss-time incidents The existence of a worker's GRM Workers' grievance logbooks. Number of complaints received. Number of complaints resolved within the timeframe of the GRM	Monthly
Traffic Management	Existence of Traffic Management Plan Implementation of Plan evidence by reports and meetings Traffic Management Plan appropriately advertised and communicated to project-affected people	Monthly
Chance Find	Existence of a Chance Find Policy Training and awareness exercise on policy at determined intervals. Implementation of policy procedures when chance find triggered	Monthly
Gender Based Violence	Is GBV incorporated in the Code of Conduct? Is there a Project GBV Policy. Is the GBV Referral Pathway known by all staff. GBV topic included in the toolbox talks.	Monthly
Grievance Redress Mechanism	The existence of GRM' grievance logbooks Number of complaints received. Number of complaints resolved within the timeframe of the GRM. Grievance redress integrated into the project's core activities. Grievance redress integrated into staff job descriptions and responsibilities. GRM appropriately resourced and monitored. Procedures to file grievances and seek action easily understood by project beneficiaries. Grievances be filed anonymously and there a range of contact options. GRM appropriately advertised and communicated to project-affected people. Are there dedicated and trained staff available to handle the GRM?	Monthly

1

6.6 Reporting

The contractor should report on environmental, health, safety, and social compliance at progress meetings or any such engagements. The contractor should also be required to report on any environmental or health and safety incidents which might occur.

Separate reports should be prepared for accidents or incidents which have occurred on the project site. This report should outline details as to what occurred, response measures, outcomes/actions taken to resolve same and management measures implemented to prevent future occurrences. An accident/incident register should be kept by the contractors.

6.7 Emergency Response

Even though the contractors may have implemented appropriate systems and are complying with all the environmental and occupational health and safety requirements to ensure a safe and healthy work environment, occasions can still arise when an environmental emergency can occur. In the event of an emergency, the objectives are to ensure a prompt and effective response by the company, as well as to minimize the effects. In this regard, this Emergency Response Plan (ERP) was prepared. The ERP describes the general types of emergency and actions to be followed, should an emergency occur during the construction phase of the project. The ERP includes:

- Emergency Contact Details;
- Emergency Procedures;
- Description of an Emergency;
- Authority of Control;
- Scenario Description and Response;
- Materials Inventory; and
- Incident Reporting.

It is advisable that contractors prepare their own ERP, utilising this for guidance. The contractors ERP should be provided to employees and placed at strategic locations within the project sites. Such locations will include the office, living quarters and work areas.

In any ERP, it is critical that the workers be adequately trained and there should be detailed emergency procedure drills and briefings. Training should be done to make staff aware of the hazards of the workplace, as well as the appropriate management measures to be implemented in cases of emergencies. All personnel should benefit from training and orientation and should be familiarized with the potential hazards of their work area and made aware of the necessary precautions to be taken to prevent these from occurring while carrying out their duties, as well as to follow good housekeeping practices to prevent accidents, fires and other emergencies.

6.7.1 Objectives of Emergency Response

The emergency response objectives include:

1. Protection of human health and safety;
2. Protect and minimize the effect on the environment or property;
3. Contain the spread of material;
4. Neutralize and render safe any noxious or hazardous materials; and
5. Commence clean-up activities and site remediation.

By their very nature, emergency response procedures deal with events either not foreseen or almost totally unlikely. It is necessary therefore to plan for worst case scenarios or adopt general procedures, as normally anything that can be covered by a specific plan is not an emergency. It is important to recognize that, although highly unlikely, an emergency can have serious impacts well beyond the individual operation immediately involved.

6.7.2 Identification of an Environmental Crisis

An emergency is a situation in which injury to a person(s) and/or damage to the environment or property is involved thus requiring emergency service attendance. An environmental emergency would involve widespread actual or potential destruction or contamination of the environment that calls for immediate action. Given the nature of the project, no major emergency is foreseen. Some examples of events that would require the instigation of an emergency response procedure at the project location include:

1. A fuel and or oil spill;
2. Fire; and
3. Minor and major accidents;

6.7.3 Emergency Contact Details

The contact information for institutions and agencies to be contacted in a case of emergency are outlined in table 38 below. These institutions are either relevant to the project activities or its location.

Table 6:Emergency Contact Information

Emergency Contact Numbers		
No.	**Organization**	**Contact Number**
1	Rose Hall Fire Station	322-5707
2	Port Mourant, District Hospital	336-6376/6095
3	Fort Wellington Community Hospital	232-0294
4	Fort Wellington Police Station	232-0313
5	New Amsterdam Public Hospital	333-2381

1

6.7.4 Authority of Control

The staff structure should comprise a Site Engineer and HSE Personnel, who reports directly to the contractor. These personnel should be responsible for the day-to-day execution of works at the project site. Environmental, Health and Safety support should be provided by means of a specialist who will advise on specialized areas. The Site Engineer should have the authority to take control of any incident and can make a decision to shut down all or any part of the operations following an incident. This person should also decide on the type and level of response required for a particular emergency.

6.7.5 Emergency Response Equipment

Contractors should maintain stocked and adequate First Aid Kits onsite. These kits should be located in a central area and clearly labelled. The contents of the kits should be consistent with what is recommended by the Red Cross and should be accompanied by proper

instructions on usage. However, proper medical services are available at the Port Mourant, District Hospital, which is approximately five minutes away from the project location. More advanced medical services are also available at New Amsterdam Public Hospital Cooperation (NAPH), approximately twenty minutes away. These should be utilized for more severe situations.

Firefighting equipment such as fire extinguishers and sand buckets, along with instructions on their usage, should be located at strategic points at the construction sites. These points should be clearly marked, and always visible and accessible, and employees should be aware of their positions. Dry chemical extinguishers should be acquired. Staff should be trained in fire response and how to operate fire response equipment available onsite.

Fuel should be stored in limited quantity in sealed metal drums and kept in an enclosed area with on impermeable base. In the case of a spill occurring outside of this area, a spill kit should be kept onsite to assist with the clean-up.

6.7.6 Response Mechanism

Emergency response measures should be applied to both minor and major incidents/accidents. Adequate information and equipment should be maintained onsite to respond to emergencies. The following outlines the emergency response procedures for several types of emergencies that may occur during the project implementation.

6.7.6.1 Minor Incident/Accident

In the event of a minor accident, the site engineer or foreman should be informed and should then take the responsibility for on-site treatment utilizing first aid facilities. The contractor should consider training personnel in first aid if none of the employees hired had prior training. An entry should be done into the Accident and Emergency Record book which is to be always kept on the project site. A detailed report using the report form in appendix 3 should be prepared.

6.7.6.2 Major Incident/Accident

In the event of a major accident the following measures should be implemented:

- Inform the site engineer or foreman.
- Assess type of injury, i.e., broken leg, conscious or unconscious.
- In the case of injury, first aid treatment to be applied.
- Arrange transportation to Port Mourant District Hospital or the NAPH if case is serious.
- Make entry into the Accident and Emergency Record book.

As was previously stated the Port Mourant District Hospital is in close proximity to the project site. This hospital is fully equipped to handle most accidents such as bruises, broken bones, cuts, etc. An entry should be done into the Accident and Emergency Record book which is to be always kept on the project site. A detailed report using the report form in Appendix 3 should be prepared.

6.7.6.3 Fire

Firefighting equipment such as fire extinguishers and sand buckets should be located at strategic points within the project area such as fuel storage area with instructions on their usage. These points should be clearly marked, be visible and employees would have

knowledge of their position. In the event of a fire, employees should initiate the following procedure which they would be familiar with as a result of fire drills:

6.7.6.3.1 Immediately warn others and evacuate area.

- Attack the fire if safe to do so, with firefighting equipment provided, but without taking personal risks.
- Take decisions on containment. If it is a small fire, use fire extinguisher. In the event of a larger fire, employ water spray if water pump is available on site. Also contact the Guyana Fire Service.
- Contact the site Environmental and safety Personnel.
- Make entry into the Accident and Emergency Record book.

6.7.6.4 Fuel Spills

If fuel is stored on-site for refuelling of equipment, it should be located within a containment area that has an impermeable base. However, in the event of a spill beyond or outside the containment area the following action should be taken:

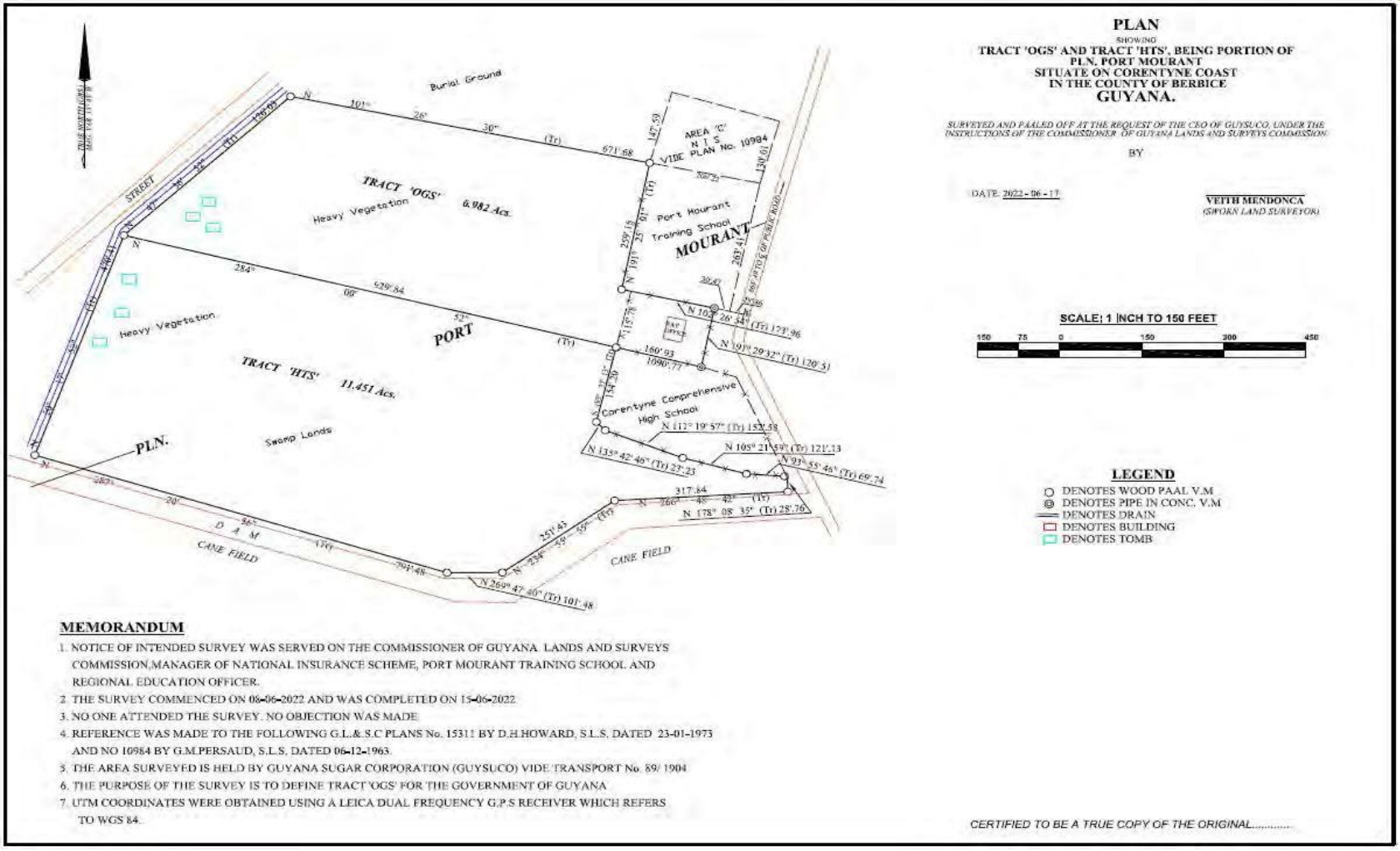
6.7.6.4.1 Attempt to stop the flow if possible.

- Inform the contractor environmental personnel and seek guidance.
- Prevent the movement of people or vehicles into restricted area.
- Treat spill with absorbent materials such as sand or sawdust and a bund formed, if possible, to prevent the spill spreading and contaminating the waterways and soil.
- Collect absorbent materials and place in a secured area with an impervious base at a restricted zone.
- Make entry into the Accident and Emergency Record book.

6.7.7 Incident Reporting

After every incident/accident a report should be required. The contractor environmental and social personnel should have direct responsibility for the preparation of such a report. A format, which can be used reporting is included in Appendix 3.

Annexe 1 – Survey Plan of the Project Area



Annexe 2 – Construction Contractor Specifications

Introduction

This specification sets out the requirements for the contractor's environmental and social management on the Project during construction. THE CLIENT and PMU demands sound environmental and social management as one of the key requirements for the Project. This specification provides guidance to the contractor in preparing the Contractor ESMP and details the specific areas of environmental and social compliance sought. The Contractor ESMP should be seen as a dynamic document, with revisions being appropriate at various stages of the Project.

Purpose of the Specification

The purpose of this part of this specification is to provide the mandatory environmental clauses that establish the minimum requirements for the contractor. The Project ESMP provides the framework for satisfying the client that the contractor is aware of the environmental issues and required mitigation measures to be applied to the Project. This part of the specification sets out the requirements for the contractor environmental management on the Project.

Roles and Responsibilities

THE CLIENT

- THE CLIENT shall assign a Project manager, an environmental and social safeguard specialist who will lead the quality assurance and control of the Project and monitor the overall implementation of the ESMP;
- The Project manager and appointed Environmental and social safeguards specialist in the PMU would be designated as the key officers in charge of grievance redressal;
- The Project manager shall oversee the conduct of induction safety and health, and emergency response training of THE CLIENT Project staff, including the employees of all Project parties;
- Conduct construction and post-construction monitoring, inspection and reporting; and
- Undertaking the institutional/organisational arrangements to facilitate implementation of the ESMP.

Construction Supervision Consultant

- The construction supervision consultant will assign a Project Engineer with responsibility for overall Project implementation, including monitoring and reporting on the construction contractor's environmental, social, safety and health management;

- Assign an environmental specialist responsible for supervising the implementation of the ESMP;
- Assign a social specialist responsible for supervising the implementation of the ESMP stakeholder engagement requirements and social management of the Project;
- Assign environmental inspector responsible for the day-to-day monitoring of the contractor's implementation of the ESMP;
- Advise on the need for expert assistance (e.g., archaeology, palaeontology) when required;
- Conduct environmental compliance site inspections and environmental and social audits of the Project as required;
- Environmental and Social Management Framework.

Construction Contractor

Overall responsibility for construction environmental and social management lies with the contractor. Appendix 1 provides the contractor specifications for construction environmental and social management. The Contractor will be required to:

- Assign a Project manager, responsible for overall management of construction activities and progress;
- Assign an environmental specialist, responsible for implementation of the ESMP and the development of a site-specific Contractor's Environmental and Social Management Plan (CESMP);
- Assign an environmental inspector, responsible for the day-to-day monitoring of the contractor's implementation of the CESMP and emergency response;
- Assign a Project liaison officer, responsible for the implementation of the CESMP stakeholder engagement requirements and grievance redress mechanism;
- Assign a site safety and health officer and emergency response crew.

Environmental Protection Agency (EPA)

- The EPA will undertake regulatory compliance management of Project construction and lifetime operations in accordance with national environmental regulations and legislation and policy.

Contractor Environmental and Social Management Plan (CESMP)

The contractor shall prepare a contractor specific Environmental and Social Management Plan, that complies with the EPA guidelines for preparing Environmental Management Plans and the construction requirements outlined in the Project ESMP, as well as this construction contractor specification. The CESMP shall be prepared and approved prior to the commencement of construction works.

The CESMP shall be maintained as a dynamic working document and shall be regularly reviewed and updated in the in the event of any changes of site conditions, design or programme during the construction period of the Project. The CESMP shall identify feasible and cost-effective measures that may reduce potentially significant adverse environmental impacts to acceptable levels. It should also involve operational procedures needed to avoid environmental risks during construction operations, as well as emergency and contingency procedures.

General Construction Requirements

- When night work is authorized by the consultant engineer or his representative, the contractor shall provide adequate light where work is being executed at night and shall provide and install any additional lighting which the engineer may require in order to gain access to watch and supervise the works and carry out any testing and examination of materials.
- The contractor shall minimize the pollution of and disturbance to lands, roads and other places on and around the site. No trees or other vegetation shall be removed except to the extent necessary for the works as identified on the site clearance plans.
- The contractor shall take all reasonable precautions in connection with any waterway to prevent silting, flooding, erosion and pollution of the water that adversely affects its quality or appearance. In connection with underground water resources (including percolating water), the contractor shall take all reasonable precautions to prevent any interference with the supply to or abstraction from such sources and to prevent pollution, to not adversely affect the quality or quantity of groundwater.
- The contractor shall provide and maintain facilities to minimize pollution due to the contractor's operations. and remove same on completion of construction,
- The Contractor shall provide, maintain and remove on completion of construction, adequate fencing or barriers around active zones of construction and all equipment/material staging areas, but without prejudice to his obligations including maintenance of free access for THE CLIENT, the consultant engineer, other contractors and any other persons entitled to such access.

- The contractor shall be responsible for acquainting himself with and observing all current, applicable laws, by-laws and regulations.
- The contractor shall take down and remove all structures forming part of his construction sites and or equipment/materials staging areas and shall arrange for the disconnection of the water supply, remove all drains and culverts, backfill trenches, fill in all latrine pits, soakaways and other sewage disposal excavations, and shall restore the site and all staging areas, as far as practicable, to its original state and leave it in a neat and tidy condition.

Site Facilities and Staging Area

The construction, layout and extent of the construction site and its components shall be planned, designed and managed in such a manner that environmental impacts are minimized. Temporary structures and facilities shall be decommissioned to the satisfaction of the project engineer and clean-up after construction shall be effectively undertaken.

The contractor shall establish construction camps, offices, workshops, testing facilities, stockpiling areas, staff accommodation etc. in a manner that does not adversely affect the environment.

The construction area shall be kept to a minimum. Before construction can begin, the contractor shall submit to the consultant for approval a method statement detailing:

- A layout plan and the method of establishment of the construction camp, i.e., all offices, accommodation facilities, testing facilities/laboratories, batching areas, storage & stockpiling areas, workshops, vehicle washing areas and all other areas/facilities required for the undertaking of activities required for completion of the Project.
- The plan shall include the location and layout of waste storage and treatment facilities, ablution facilities, stockpiling and spoil areas and hazardous material storage areas. The demolition and removal of these facilities on completion of construction works shall also be detailed.
- The contractor shall restrict all construction related activities, materials, equipment and personnel to within the area specified. The contractor shall ensure that the approved construction area will be adequate to cover the Project without further space adjustments being required at a later date.

Areas where construction activities (including traffic accommodation) are prohibited are referred to as no-go areas. Entry into these areas by any person, vehicle or equipment shall only occur by the written permission of the supervision consultant. All declared no-go areas will be demarcated by temporary fencing, the position of which shall be agreed to by the consultant with appropriate signage. All private property outside of the construction areas (including any bypass routes) as set out in the site layout plan shall be considered no-go areas.

The contractor shall erect temporary fencing along the perimeter of designated no-go areas. Temporary fencing shall, as a minimum, consist of wooden or metal posts at 3m intervals, with two plain wire strands tensioned horizontally at heights of 300 mm and 900 mm above the ground, threaded with commercial type danger tape. The contractor shall maintain in good order all demarcation fencing and barriers for the duration of construction activities, or as otherwise instructed.

The contractor is responsible for the erection and maintenance of adequate hand washing and toilet facilities and for enforcing the use of these facilities. The contractor shall be responsible for ensuring that all hand washing facilities are maintained in a clean and sanitary condition to the satisfaction of the consultant. The hand and toilet washing facilities, must be provided at all construction camp areas where there will be a concentration of labour.

If none is available, the contractor shall provide adequate temporary shade within the construction areas to ensure that site personnel do not move off site to eat. The contractor shall provide adequate refuse bins at all eating areas to the satisfaction of the consultant. If deemed necessary by the consultant, the contractor shall demarcate designated eating areas. No feeding of animals shall be allowed.

All construction areas must always be kept neat and tidy. Different materials and equipment must be kept in designated areas and storing/stockpiling shall be kept orderly.

Construction Specifications for Materials Management

Environmental considerations shall be considered in the siting of any material storage areas. The contractor shall ensure that all suppliers and their delivery drivers are aware of works procedures and restrictions (e.g., no-go areas). Material shall be appropriately secured to ensure safe passage between destinations during transportation. Loads shall have appropriate cover to prevent them spilling from the vehicle during transit. The contractor shall be responsible for any clean-up resulting from the failure by his employees or suppliers to property secure transported materials.

Stockpiling

The contractor shall plan his activities so that materials excavated from borrow pits and cuttings, in so far as possible, can be transported directly to and placed at the point where it is to be used.

Should temporary stockpiling become necessary, the areas for the stockpiling of excavated and imported material shall be indicated and demarcated on the site plan submitted in writing to the consultant for his approval, together with the contractor's proposed measures for prevention, containment and rehabilitation against environmental damage. Stockpiles shall be positioned and sloped to create the least visual impact.

No foreign material generated/ deposited during construction shall remain on site. Areas affected by stockpiling shall be reinstated to the satisfaction of the consultant.

Noise and Vibrations

Noise emissions shall be limited by appropriately soundproofing noise producing equipment such as the back-up generator of the facility. Pneumatic tools shall be fitted with silencers/mufflers and or appropriately operated in adequate sound proofing enclosure.

- The generator set shall be suitably sited away from sensitive receptors within the facility and surrounding environment. Construction and operation activities of the Project shall be designed to be undertaken with any directional noise emissions pointing away from noise-sensitive receptors. Operation activities shall be maintained at sound levels in compliance with the noise emission guidelines of the EPA.
- Construction equipment shall be fitted with mufflers. Compressor, generator, and engine compartment doors shall be kept closed and plant turned off when not in use. Care will be taken when offloading vehicles to avoid un-necessary noise.
- Employees shall be required to wear personal noise-protection gear, e.g., ear protectors. Construction vehicles and machinery shall be kept in good working order and engines turned off when not in use.
- Reasonable efforts shall be made to schedule heavy noise/vibration emitting activities such as piling for weekends or in the late afternoon and keep the less noisy activities for normal working hours (between 8 am and 5 pm). Where noise and vibrations are likely to pose an impact to the normal environment of the surroundings, the Project shall inform the affected receptors via a public notification and engagement.
- Drop heights shall be minimized when loading vehicles with rubble. Vehicles shall be prohibited from waiting within the site with their engines running or alternatively, located in waiting areas away from sensitive receptors. Piling shall be carried out with the method that minimizes both noise and the transmission of vibrations to sensitive receptors.

- Temporary noise emission screens shall be considered for use to reduce noise from particularly noisy activities and the height of perimeter hoarding will be extended where this would assist in reducing noise disturbances at sensitive receptors.
- Hours of construction operations shall be strictly enforced, and any deviations shall be with the consent of the EPA. Construction works shall conform to the EPA noise emission guidelines for construction activities. Routine monitoring of construction and operation activities shall be performed to evaluate Project compliance with EPA guidelines and the effectiveness to noise management measures implemented.

Dust

Prior to the commencement of works, advanced warning shall be given to neighbouring receptors and other sensitive receptors to allow for some measures to be taken to protect themselves from potential air emission impacts.

- Fugitive dust levels may be controlled by periodic wetting of loose dirt, un-vegetated areas, and conveying routes, stockpiles and spoil piles to control dust emissions.
- All motorized vehicles within the construction site shall be restricted to suitable speeds to avoid dust plume impacts.
- Personnel working around the construction site shall be required to observe safety precautions to avoid exposure to dust, fumes and other air emissions.
- Workers shall be provided with and required to wear appropriate personal protective equipment (PPE) to protect themselves from dust.
- Any vehicle with an open load-carrying area used for transporting potentially dust- producing material shall have appropriate fitted side and tail boards. Materials having the potential to produce dust shall not be loaded to a level higher than the side and tail

  boards and shall be covered to prevent dispersion of transported materials, especially during dry and windy weather. Stockpiles of materials shall be sited away from sensitive receptors and stored in a manner to prevent dispersion of materials from wind.

- Temporary dust emission screens shall be considered for use to reduce dust, particularly from excess dust producing activities such as cement and aggregate mixing, and the height of perimeter hoarding shall be extended where this would assist in reducing dust emission disturbances at sensitive receptors.
- Routine monitoring and maintenance of construction vehicles and machinery shall be performed to minimize combustion emissions.

Hazardous Materials

This specification covers requirements for the handling, use and storage of fuels, lubricants and chemicals during construction activities. Significant volumes of fuels and lubricants will be used by vehicles and equipment operating for the proposed Project. Fuels and lubricants have properties than can result in adverse environmental impacts if they are accidentally spilled or improperly handled. The strategies to minimize occurrences of accidentally spillage of these substances are detailed in this section.

- In the event that refuelling is to be carried out directly from mobile tanker trucks or from a truck carrying a fuel tank, all transfer of fuel, including refuelling, shall be carried out in areas separated 10 m from receiver drains. All containers, hoses, and nozzles shall be maintained free of leaks. All fuel nozzles shall have functional, automatic shutoff. The operator can see and have access to both ends of the hose, or operators are stationed at both ends and fuel remaining in the hose is returned to the mobile tanker or fuel storage facility.
- For avoiding oil and fuel spills during refuelling or fuel off-loading, hand or electric motor pumps shall be used for unloading the volumes to be used from the main storage tank.
- Pumps with dispensing hose and nozzle or other portable pumps shall be used to dispense fuel to machinery and vehicles. The fuel dispenser shall have an automatic shut-off value to prevent overfilling and spills.
- Jerry cans, and/or flexible fuel funnels shall be used to transfer fuel to machinery and vehicles, where pumps are not available to prevent spills.
- Fuel trucked to site shall be by fuel trucks and transferred into fuel storage tanks situated within the fuel storage area.
- Oil changes, and/or major maintenance to equipment and machinery shall only be allowed at the dedicated staging area.
- Only routine/minor maintenance activities shall be allowed outside the staging yard.

- Oil changes, maintenance works, and repairs at construction fronts shall be conducted using drip pans to capture spills, drips and leaks.
- Hazardous materials shall be located within a secure impervious spill containment area. The containment area shall be completely covered to prevent any entry of rain.
- Hazardous material storage areas shall be equipped with a fire-fighting system and emergency response equipment.
- A suitable number of portable fire extinguishers shall be kept on site and precaution shall be taken to prevent ignition.
- No smoking signs shall be distinctly displayed in fuel and compressed gas and flammable liquids storage areas to prevent fire.
- Material Safety Data Sheets (MSDS) shall be kept on site and all measures to contain spills of hazardous materials shall be in accordance with the procedures therein.
- Storm water run-off from areas around the hazardous materials storage facilities shall be directed to areas where hazardous materials are not stored.
- Incompatible substances that can react upon mixing to generate heat, fire, gas, explosion, or violent polymerization shall not be located within proximity of each other.
- Hazardous materials storage shall be located away from water resources, areas of fire hazard and sensitive receptors such as residents, schools, etc.
- Washing of vehicles, equipment and machinery shall be done at the staging yard/area where appropriate oil-water separation facilities will be in place.

Waste

These specifications cover requirements for handling and disposal of wastes generated during the construction program.

- Hazardous waste from the maintenance of construction machinery and equipment.
- Waste generated shall be segregated into wastes that are reusable (vegetation, topsoil), inert waste such as plastics, rubber, etc., and hazardous waste.
- Inert waste generated at the construction site shall be collected, segregated and transported to an approved waste disposal site and or land spread where required for landscaping or other appropriate use at the site.
- Waste shall not be allowed to accumulate at the construction front and shall be removed daily by the work crew to the dedicated waste storage area or waste bins. Littering shall be strictly prohibited.

- General refuse and litter shall be stored in enclosed bins separate from hazardous wastes.
- Segregated waste disposal bins shall be maintained at sites of ongoing construction activities.

- Waste shall be temporarily collected in these bins. Workers shall receive training on waste classification and segregation.
- Food wastes and organic matter shall be collected and initially disposed in bins by canteens or other eating areas. Subsequently, these wastes shall be taken off-site and disposed to an approved waste disposal site.
- Bins for temporary waste storage shall always be covered to control flies, rodents and other vermin/vectors.
- Toilet waste generated shall be taken off-site and appropriately disposed by an approved waste disposal service.
- Paint residues, used lubricants, waste oil and oil filters, oil rags, used brake pads, hydrocarbon contaminated materials and soils, used lead-acid batteries are classified as hazardous wastes.
- Hazardous wastes generated shall be segregated from the general waste stream, separately stored in clearly marked containers within an impervious spill containment area. The containment area shall be completely covered to prevent any entry of rain.
- Hazardous waste storage containers shall be elevated to easily identify leaks. Indiscriminate disposal of waste oil shall not be permitted under any circumstances.
- A hazardous waste manifest shall be maintained by the contractor, and shall contain the following items:
    - The name and location/site of the waste generator;
    - The name and description of the waste and hazardous class;
    - The number and type of containers; and
    - The quantity of waste being transported.
- The manifest shall be signed by the on-site manager and a copy of the manifest shall be retained on-site and provided to the relevant authority on request.

Erosion Control and Storm Water Management

- Surface water runoff from the site shall be controlled to prevent erosion and sedimentation of receiving water body.

- Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before the commencement of construction works.
- Earthworks shall be avoided during periods of heavy rainfall.
- Storm water run-off over exposed soil surfaces shall be along pre-established paths and shall contain breakers and other devices to control flow velocity to the extent practical. Maximum use shall be made of existing ditches and drainage features.
- Structures for erosion and sediment control shall be installed as conditions require.
- Temporary erosion and sediment control structures shall be implemented as required throughout construction during the time permanent structures are not installed to minimize and regulate surface run-off over exposed soil surfaces.
- Temporary installed devices and structures shall be checked to detect possible faults and corrections performed where necessary.
- Vegetation clearing where necessitated shall be conducted in a manner to ensure there are no large increases in sediment discharge to receiving water bodies.
- Existing vegetation shall be maintained to the extent practical to provide interception cover and soil stabilization.

Spill Management

The spill prevention and clean-up procedures shall be followed in the event of a release of hazardous material such as fuel oil/ waste oil that can threaten human health and the environment.

- Spill prevention shall be achieved by ensuring the proper handling and management of hazardous materials.
- Hazardous material storage and spill contingency measures shall be implemented in accordance with the Materials Safety Data Sheets for hazardous materials stored on site.
- Fuel containment areas shall be developed for the storage of all fuel oils including waste oils and other hazardous materials/waste.
- Fuel storage areas shall be bonded to the walls and floor with an impervious layer and shall have 110% containment capacity of the largest container stored.
- Spill containment equipment such as absorbents, earth moving equipment shall be made available at the construction site for use during spill response.

- The source of the spill shall be shut off and all effort will be made to contain the spill at source. Clean-up shall be done using absorbents and/or other clean-up equipment as is practical.
- A report highlighting the cause and spill response and clean-up procedures including lessons learned shall be prepared by the contractor and copies provided to the THE CLIENT Project Manager and the EPA.

Emergency Response

Construction specifications for emergency response for potential emergencies such as fires, explosion, and personnel accidents are provided in this section. The contractor will have ultimate responsibility for the implementation of emergency response procedures.

- Emergency response capability complete with suitable communications equipment shall be established at all construction sites.

- Emergency contact details (Location/address, phone numbers) shall be clearly posted at the work front.
- The contractor shall assign an on-site emergency response coordinator. The coordinator will have explicit authority to commit the resources necessary to implement the emergency response procedure.
- All employees shall be provided with awareness training to recognize and respond to emergency situations. The training shall include identification of procedures to be followed in emergencies, including notification of the appropriate site personnel, and measures to assure worker safety.
- In the event of an emergency the following procedures shall be implemented:
    - Persons likely to be affected by existing or imminent disaster conditions shall be alerted, and emergency responders summoned;
    - The emergency response coordinator shall be immediately alerted of the emergency; and
    - All personnel within the area of influence of the emergency shall be evacuated from the immediate area of the emergency to pre-established emergency assemble points.
- Emergency assemble points shall be clearly identified and designated by the emergency coordinator prior to start of works. Emergency assemble points shall be clearly denoted in maps depicting routes to emergency exists and care facilities.
- If there is a fire, water and/or chemical fire suppressant shall be used as a fire suppressant.

- In the event of an explosion, all workers shall be immediately evacuated from the immediate area of the explosion.
- In the event of an industrial accident the following protocol shall be followed:
    - First aid care shall be rendered, preferably by a trained first aider, and an evaluation conducted to determine whether offsite treatment is necessary.
    - A vehicle shall be summoned to transport the injured person to the hospital.
    - The injured immediate supervisor shall be informed.
    - The safety representative shall record the accident in the industrial accident register.
- During the emergency control phase, the emergency coordinator shall take all reasonable steps necessary to ensure that explosions, releases, fires, etc. do not occur, recur, or spread to other areas. These steps shall include, where applicable, stopping operations.
- The emergency coordinator shall monitor for leaks, pressure build-up, gas generation, or ruptures in valves, pipes, or other equipment, wherever appropriate.
- Details shall be provided to emergency personnel concerning the types of on-site emergency equipment to be used and the need for personnel protection equipment.
- The emergency coordinator shall ensure that in the affected areas, no waste which may be incompatible with the released material is treated, stored, or disposed of until clean-up procedures are completed.
- All emergency equipment shall be cleaned and made fit for its intended use before operations are resumed. All first-aid, safety, and emergency response equipment shall be inspected periodically.
- The emergency coordinator shall prepare a report on the emergency, its causes, and corrective actions.

Safety and Health

Occupational safety and health measures shall be implemented to ensure that construction activities are safe to both the workers and the general public. The contractor shall be responsible for initiating and maintaining the environmental, health and safety program during construction operations, training employees of their responsibilities, and designate a qualified person on staff with responsibilities for occupational safety and health.

- Efforts shall be implemented to prevent the risk of accidents to members of the public and other road users, which shall include the implementation of traffic control procedures.

- All employees shall be responsible for complying with the safety and occupational health requirements provided herein, wearing prescribed safety and health equipment issued, reporting unsafe conditions/activities, preventing avoidable accidents, and working in a safe manner.
- Proper safety procedures and equipment appropriate to the task at hand shall be provided to workers.
- Routine safety and occupational health inspections shall be conducted. The inspections shall identify safety and health hazards and deficiencies, and the actions timetable, responsibility for correcting the deficiencies and record findings in inspection reports. Follow-up inspections shall be undertaken to ensure correction of any identified deficiencies.
- All employees shall exercise caution in all activities in and around the construction site and each employee shall be responsible to protect others working on site.
- Appropriate personal protective equipment (PPE) shall be provided to workers depending on the nature of the work task to be performed.
- In accordance with Occupational Safety and Health Act 1997 employees shall be authorized to do the following:
    - Cease work once a hazard is perceived.
    - Report the hazard to the supervisor who will in company employer's safety representative inspect the condition or circumstance and determine its validity.
    - Obey the instruction to perform alternative work or cease work completely as directed by the supervisor.
    - Return to the workstation or proceed once the hazard has been adequately dealt with or eliminated.
- All minor and loss time accidents shall be documented in the industrial accident register.
- Reports of accidents or fatalities shall be reported to the THE CLIENT Project Manager, and the Ministry of Social Protection when required by law.

- All accidents shall be documented with the following information as a minimum:
    - Name of person involved
    - Name of injury
    - Place of injury
    - Description of accident
    - Type of accident
    - Reason for accident
    - Corrective measures (as warranted)
- Serious injuries shall be referred to the appropriate hospital. A first-aid kit shall always be onsite.
- First aid kits shall be provided in the ratio of one for every twenty-five (25) persons or less.
- First aid kits locations shall be clearly marked and distributed throughout the construction site.
- First aid kits shall be easily accessible to all workers, protected from the weather, and each item maintained sterile.
- The contents of first-aid kits shall be checked by a designated first aider prior to their use and at least weekly when work is in progress to ensure that expended items are replaced.
- Workers shall be trained on the use of the first aid kit.

Traffic Management

- The Contractor shall develop a traffic control plan to address increase traffic and accident risk during construction. The plan shall include road safety management considerations, access restriction management during construction, as well as driver education and awareness.

- Construction works shall be conducted in a manner as to offer the least possible obstruction to the safe and satisfactory movement of traffic over the existing roads.
- All drivers of Project vehicles shall be licensed and will obey all country driving requirements.
- The Contractor shall provide, erect, and maintain traffic signs, barricades, and other traffic control devices where necessary.
- Devices and signs no longer required shall be promptly and completely removed from road user's lines of sight.

- Repositioning of signs and devices shall take place to accommodate the progress of the construction works.
- Signs and devices shall be erected in accordance with the following locations and spacings requirements of the MOPI:
    - They are properly displayed and securely mounted;
    - They are within the driver's line of sight;
    - They are not obscured from view;
    - They do not obscure other devices from the driver's line of sight;
    - They do not become a possible hazard to vehicles; and
    - They do not deflect traffic into an undesirable path.
- Speed limits shall be enforced on the access roads. Project vehicles shall not carry more passengers than the vehicle is designed to carry.
- The contractor shall not move, or cause to be moved, any equipment or vehicle upon the Project roads or haul road unless the roadway is constructed and maintained to safely accommodate the movement of the equipment or vehicle involved.
- Lighting shall be provided at the construction site at night to prevent accidents.
- Residents shall be prior informed of the schedule of works and activities that may affect the flow of traffic and ease of access.
- All roads shall be maintained in a safe condition to eliminate or control dust and similar hazards. Traffic controllers shall wear high visibility vests, in addition to other protective equipment while directing traffic and shall ensure no activity is undertaken which will endanger the safety of other road user.

Stakeholder Engagement and Management

- The Contractor shall develop a stakeholder engagement plan to ensure there is continuous stakeholder engagement with the local stakeholders inclusive of the categories of stakeholders identified in the initial stakeholder engagement.

- The stakeholder engagement plan should have an associated communications plan with specific communication methods for each stakeholder taking into considerations needs of the elderly and persons with disability.
- The Contractor shall designate a community liaison officer with the right skills, training, and disposition for community liaison work and ensure that the person is placed into the field prior to the start of construction.

- The community liaison officer shall meet regularly with local communities and maintain records and minutes of meetings, grievances and resolutions.
- The Contractor will ensure that all recorded grievances are responded to within a reasonable timeframe in keeping with the GRM of the Project ESMP.
- The Contractor shall keep a Project record of all complaints received and the response provided.

Annexe 3 – Suggested Code of Conduct for Workers

I [*enter name of Project Worker]* have signed a contract with CCRIF SPC, for [*enter description of the Works*]. These works will be carried out at [*enter the Site and other locations where the works will be carried out*].

This Code of Conduct is part of the measures to deal with environmental and social risks related to the Project.

This Code of Conduct identifies the behaviour that will be required of me.

The workplace is an environment where unsafe, offensive, abusive or violent behaviour will not be tolerated and where all persons should feel comfortable raising issues or concerns without fear of retaliation.

REQUIRED CONDUCT

I shall:

(a) carry out my duties competently and diligently;

(b) comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other project personnel and any other person;

(c) maintain a safe working environment including by:
   a) ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
   b) wearing required personal protective equipment (PPE);
   c) following applicable emergency operating procedures.

(d) report work situations that I believe are not safe or healthy and remove myself from a work situation which I reasonably believe presents an imminent and serious danger to my life or health;

(e) treat other people with respect and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;

(f) not engage in sexual harassment, which means unwelcomed sexual advances, requests for sexual favours, and other verbal or physical conduct of a sexual nature with other project workers or employer's personnel;

(g) not engage in sexual exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed operations/projects, sexual exploitation occurs when access to or benefit from Bank financed goods, works, consulting or non-consulting services is used to extract sexual gain;

(h) not engage in sexual abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal coercive conditions;

(i) not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;

(j) complete relevant training courses that will be provided related to the environmental and social aspects of the contract, including health and safety matters, Sexual Exploitation and Abuse (SEA), and Sexual Harassment (SH);

(k) report violations of this Code of Conduct;

(l) not retaliate against any person who reports violations of this Code of Conduct, whether to the employer who makes use of the grievance mechanism for project workers.

RAISING CONCERNS

If I observe behaviour that I believe may represent a violation of this Code of Conduct, or that otherwise concerns me, I should raise the issue promptly. This can be done in either of the following ways:

1. Contact
2. My identity will be kept confidential, unless reporting of allegations is mandated by the country law. Anonymous complaints or allegations may also be submitted and will be given all due and appropriate consideration. All reports of possible misconduct will be taken seriously and investigated by the Employer.

There will be no retaliation against any person who raises a concern in good faith about any behaviour prohibited by this Code of Conduct. Such retaliation would be a violation of this Code of Conduct.

CONSEQUENCES OF VIOLATING THE CODE OF CONDUCT

Any violation of this Code of Conduct may result in serious consequences, up to and including termination and possible referral to legal authorities.

FOR EMPLOYEE/CONTRACTED WORKER:

I have received a copy of this Code of Conduct written in a language that I comprehend. I understand that if I have any questions about this Code of Conduct, I can contact [*enter name of Employer's contact person(s) with relevant experience (including for sexual exploitation, abuse and harassment cases) in handling those types of cases]* requesting an explanation.

Name of Employee/Contracted Worker: [*insert name*]

Signature:

_____

Date (day/month/year/):

_____

Countersignature of authorized representative of the Employer:

Signature:

_____

Date (day/month/year/):

_____