

CARNIVAL GRAND BAHAMA INVESTMENTS LTD.

TERMS OF REFERENCE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

For
GRAND PORT



Freeport, Grand Bahama Island

The Bahamas

Prepared by
Enviologic International Ltd.

November 2019

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For

Grand Port

Freeport, Grand Bahama Island

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Submitted to:

The Bahamas Environment, Science and Technology Commission

And

The Grand Bahama Port Authority

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Contents

1.0 INTRODUCTION 4

 1.1 Purpose 4

 1.2 Executing Agreements 5

2.0 PROJECT LOCATION 6

3.0 PROJECT DESCRIPTION 8

4.0 ENVIRONMENTAL MANAGEMENT PLAN (EMP) SCOPE 10

 4.1 Environmental Management Plan for Construction and Operations 11

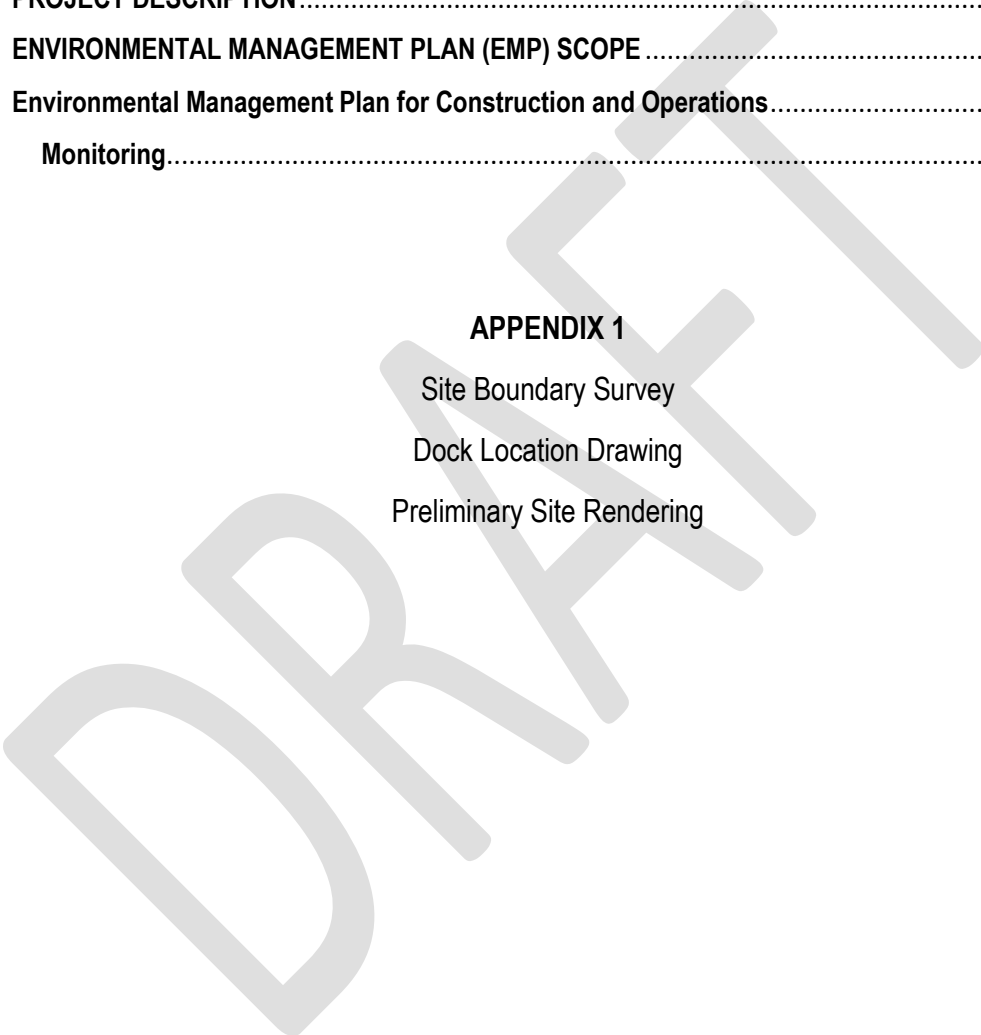
 4.2 Monitoring 13

APPENDIX 1

Site Boundary Survey

Dock Location Drawing

Preliminary Site Rendering



Draft Terms of Reference (EMP) – Grand Port

1.0 INTRODUCTION

Following the guidance provided by Bahamas Environment, Science and Technology Commission (BEST), this draft Terms of Reference (TOR) for the Environmental Management Plan (EMP) for the proposed Carnival Grand Bahama Investments Limited (CGBIL) “Grand Port” project were prepared after the main issues in the environmental impact assessment (EIA) were identified. The TOR will be adjusted after BEST and Grand Bahama Port Authority (GBPA) complete review of the EIA to include any additional areas identified as necessary for inclusion in the EMP. “Grand Port” is a generic name and serves as a place holder for a permanent name to be declared in the future. CGBIL is a wholly owned subsidiary of Carnival Corporation, a Panamanian corporation. It is intended that this TOR will serve both BEST Commission and GBPA.

The EMP will be submitted to two different jurisdictional agencies: GBPA and the BEST Commission since the project crosses two different governing boundaries. The proposed project requires approvals for environmental and building permits for the terrestrial side of the project from GBPA. The Bahamas Government is responsible for approvals for the seaward side of the project including the granting of a seabed lease and environmental and construction permits for the dock and related dredge work.

The separation of jurisdictions for approvals is due to the signing of the Hawksbill Creek Agreement between the Government of the Bahamas and GBPA. GBPA was established in 1955 under the Hawksbill Creek Agreement (Hawksbill Creek Agreement – Deepwater Harbour and Industrial Area) and was charged with the responsibility for the development, administration and management, and provision of services within the “Port Area.” The Port Area is defined as the Freeport/Lucaya city limits. GBPA licenses and regulates businesses in the Port Area including having the responsibility for granting building permits, GBPA Building and Sanitary Code regulations and enforcement. GBPA has also published its own Coastal Zone Management policy document. New projects within the Port Area are approved after consultation with the GBPA’s Building and Development Services Environmental Department and upon preparation of an EIA and EMP documents.

1.1 Purpose

The purpose of the EMP is to provide a “living document” for CGBIL to comply with environmental regulations or policies and to minimize negative environmental impacts. It will include CGBIL environmental policies, the goals set by CGBIL, and the procedures it will follow to achieve those goals. Specific procedures and

Draft Terms of Reference (EMP) – Grand Port

regulations will be identified in the EMP document. The EMP will be reviewed and revised as necessary to ensure protection of the environment and public health.

The EMP will be prepared at the request of GBPA and the Bahamas Government for the environmental management of the facility through the construction and operational phases related to the proposed Grand Port project. Envirologic International Limited (EIL) and its' subconsultants ATM (Applied Technology and Management) and R.C. Minning & Associates will prepare the EMP. The EIL team will review current policies of the Bahamas Government and GBPA to develop a comprehensive EMP based on the findings of the EIA, those additional areas identified by BEST and GBPA upon their review of the EIA, and operational issues related to the port activity.

1.2 Executing Agreements

As with the EIA TOR document, the EMP TOR is a cooperative agreement between CGBIL, BEST Commission, and GBPA for preparation of an EIA and EMP for approval of the proposed Grand Port. Carnival is a licensee of GBPA. It is understood that GBPA may consult and seek the assistance of BEST Commission and other Bahamas Government agencies in reviewing EMP documents.

2.0 PROJECT LOCATION

Grand Port will be located along the southern coast of Freeport, Grand Bahama Island. CBGIL has secured a lease for two adjoining parcels of land from the Grand Bahama Development Company. The project boundary includes Sharp Rocks Point and Silver Point and terminates west of Tony Maura Point. Parcel A is approximately 171 acres and Parcel B is approximately 158 acres for a total size of approximately 329 acres. The site is undeveloped land, which prior to the signing of the Hawksbill Creek Agreement, had a small settlement (Old Freetown) located to the east of the site. Currently, a track road (Heritage Trail) parallel to the shoreline exists. A boundary survey map is presented in **Appendix 1**. The general location is presented in **Figure 1** below.

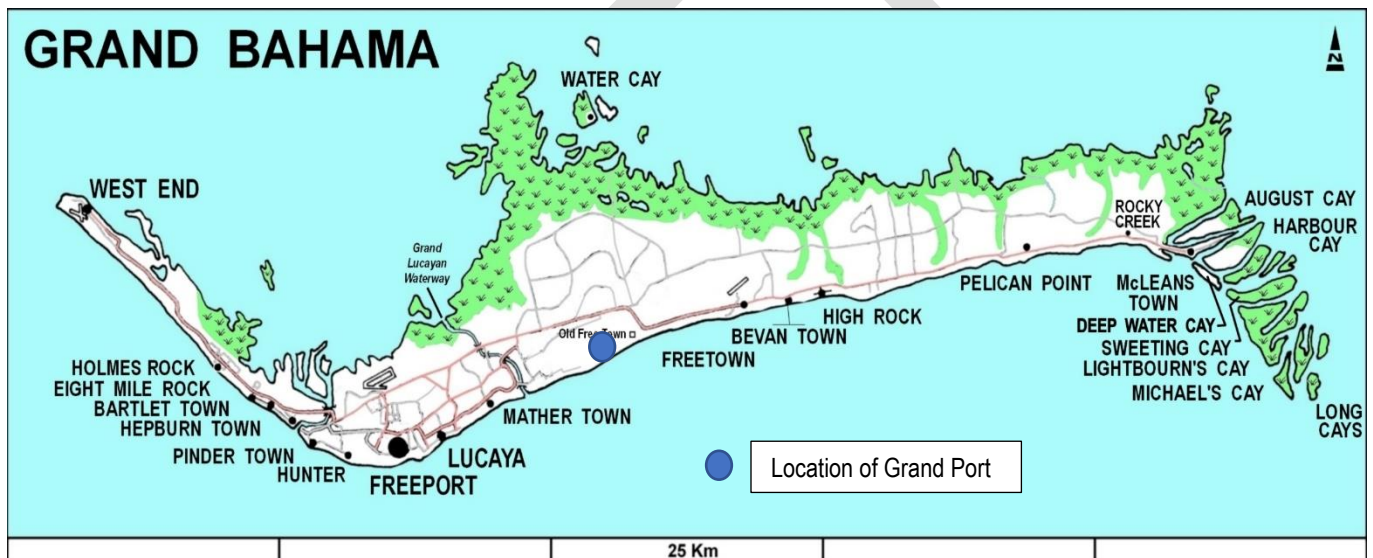


FIGURE 1. General Location of Project Site

The project boundary with the proposed entrance road from Sussex Drive is presented in **Figure 2**.

Draft Terms of Reference (EMP) – Grand Port



FIGURE 2. Approximate Site Boundary Overlaid on Aerial Photograph

The project site is currently only accessible through the track road that runs parallel to the shore. CGBIL will extend the existing track road, Sussex Drive, to the property boundary with the approval of GBPA and Grand Bahama Development Company. There are no utilities present at the site. Provisions will have to be made for water and electricity as well as phone and cable. CGBIL has entered into discussions with Grand Bahama Utility Company for the supply of potable water. CGBIL has also started discussions with Grand Bahama Power Company for the supply of electricity.

3.0 PROJECT DESCRIPTION

Carnival Corporation has been bringing passengers to Freeport, Grand Bahama through the Lucayan Harbour for many decades. The harbour is located in the industrial park area of Freeport and tourists have to pass through the heavy industry zoned area before reaching touristic destinations. Construction of the Grand Port at Sharp Rocks Point will be a more aesthetically pleasing experience for visitors to Grand Bahama and enhance the tourism product of Grand Bahama as a destination for the Carnival Corporation-branded cruise ships.

Grand Port will be a new Carnival Corporation port facility which will have docking facilities to accommodate two cruise ships at a time. A preliminary drawing of the pier location is presented in **Appendix 1**. It is estimated that 1.1 million cubic meters of seabed will be dredged for the pier. The dredging will be conducted using a suction cutter head dredge. The pier design allows for future generation Carnival XL liquefied natural gas (LNG) Class ships which can carry approximately 6,500 passengers to dock at the facility. The pier is designed so passengers can walk from the ship to shore.

A day dock (shore excursion) will be constructed from the shore on the western side of the property and overwater structures are proposed on the eastern and western sides of the property. The overwater structures are for leisure activities only and will not be constructed for habitation. Based on the conceptual plan, passengers will be ferried from the eastern to western end of the complex using electric boats along a manmade canal. The current concept is to utilize shallow draft electric powered boats for transporting passengers.

An access road (Sussex Drive) will be completed running from the Grand Bahama Highway to the northern boundary of the property. Sussex Drive will be extended approximately 0.67 miles (**Figure 2**) to the project site.

As part of the operation, CGBIL will allow fuel bunkering services for marine fuel and LNG at the port facility. However, this is not a service being offered by the Grand Port but a convenience allowed for the cruise ship operators to facilitate movement through the region. With the construction of more LNG ships, it is viewed as a necessity to provide bunkering services for both fuels. The marine fuel service bunkering will be provided

Draft Terms of Reference (EMP) – Grand Port

by a local company as currently provided at Lucayan Harbour. LNG bunkering ships will be from the United States. No LNG storage tanks or marine fuels will be stored at Grand Port.

A preliminary site master plan of the proposed facility is presented in **Appendix 1**. It is noted that this master plan is subject to revision based on development of the project, infrastructure needs, policy guidelines of the GBPA, and information gathered during the preparation of the EIA.

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4.0 EMP SCOPE

The EMP is a “living document” that will be revised as needed to ensure that the Grand Port project complies with all relevant GBPA and Bahamas Government requirements for managing and minimizing any environmental impacts during construction and operation of the facility. The Grand Port will implement the EMP using the best management practices that comply with Carnival’s Health, Environment, Safety & Security Department.

Carnival Corporation currently operates four Port Facilities in the Caribbean which are listed below.

- **Mahogany Beach** - Dixon Cove, Southwest Coast of Roatan, Honduras
- **Grand Turk Cruise Center** - Grand Turk, Turk and Caicos Islands
- **Puerta Maya**– Southwestern Part of Cozumel
- **Amber Cove** – Puerta Plata, Dominican Republic

Carnival Corporation has developed an EMP for operations at each of these port locations applying BMPs in accordance with ISO14001:2015. These port facilities also comply with the International Conventions for Prevention of Pollution from Ships “MARPOL” and local and national laws and policies. The Grand Port project will operate similarly as the other Carnival ports and a similar plan will be developed for this facility.

The Grand Port, like the other Carnival Corporation owned ports will develop an EMP for the construction and operation of the facility and will comply with MARPOL and national and local laws and policy. The EMP will cover the range of topics outlined in **Sections 4.1 and 4.2** of this document. Grand Port is intended to be the greatest model for environmental sustainability of all the ports Carnival Corporation has ever developed, further enhancing best practices in this field applied in the development and operation of all our ports.

Currently, CGBIL is in discussions with Grand Bahama Power Company (GBPC) to determine the feasibility of having solar power generated by GBPC. GBPC is currently adding solar power to its platform with the future construction of solar panels at its power generation facility located on West Sunrise Highway, Freeport, Bahamas. The facility will utilize solar powered lights as much as reasonably possible.

Draft Terms of Reference (EMP) – Grand Port

Additionally, CGBIL will incorporate water conservation measures into the operation of the facility which will include the use of alternative sources for certain non-potable uses: rainwater harvesting and high quality permeate (treated effluent) of the SWRO system with membrane bioreactor technology (MBR), an advanced waste water treatment that will treat waste water to a high standard that will exceed the standards set forth in the Bahamas Building Code and/or the GBPA's Building and Sanitary Code as well as the standards set in the U.S.

Waste generated during construction of the facility will be handled through Sanitation Services Company, which operates the Pine Ridge Landfill. Appropriate waste reduction technologies will be implemented during the operation of the facility to minimize the volume of solid waste to be handled by Sanitation Services Company.

A dredge spoil management plan will be produced for the EMP including a turbidity monitoring plan for the project. Moreover, a mitigation plan for corals including coral relocation, has been preliminarily developed and detailed EMP protocols for coral relocation will be produced.

As requested by BEST Commission, CBGIL will review the feasibility of becoming an Eco-Port once operational. Additionally, it will review ISO 9001:2015 Quality Management System to determine which sections are applicable to Grand Port.

Below is the outline for the EMP. Appropriate maps, drawings, and figures will be included.

4.1 EMP for Construction and Operations

- Provide information of Carnival's corporate environmental policy and the CGBIL Environmental Sustainability Policy and Guidelines, Roles and responsibilities for compliance to Carnival Corporation Health Environment Safety and Security (HESS) Policies for Grand Port
- Establishment of environmental goals
- Training of staff and employees on EMP.
- Compliance monitoring for EMP.
- Environmental awareness and training sessions for contractors before construction activities begin.
- Environmental education program.

Draft Terms of Reference (EMP) – Grand Port

- Collection of data for measuring waste streams generated by the facility.
- Environmental audits for measuring compliance, establishing corrective measures, revisions to environmental procedures and establishing new environmental goals.
- Safety and security for facility (ISPS) and visitors.
- Mariner controls for recreational boaters in pier area and beach area.
- Information board for facility.
- Waste management procedures during construction and operation (including appropriate waste reduction technologies) with collection and disposal through Sanitation Services Company Ltd.
- Restriction of single use plastics and recycling opportunities.
- Fuel storage and transfer procedures on shore during construction and operation including use of above ground tanks and secondary containment structures.
- Procedure for collection and disposal of used oil and batteries during construction and operation
- Spill prevention control and countermeasure plan for facility.
- Ship to ship fuel transfer for fueling cruise ship procedures and safety measures. *It is noted that this is not a service provided by Grand Port but rather an operation that will occur at the facility, which is a transaction between the ship and fuel provider.*
- Provide detailed emergency management procedures (hurricane, fire, accidental grounding, first aid, etc.).
- Discussion on training, operational procedures, and process control for the wastewater treatment plant.
- Management of water resources including potable water production and treatment.
- Management of the wastewater system and treatment plant. Stormwater management – drainage wells designed to GBPA Code.
- Provide information on the method of dredging, dredge spoil management, dewatering, use of dredge spoils, use of turbidity curtains and turbidity monitoring plan.
- Measures for improving the flushing /circulation of the canal to preserve the project's water quality.
- Environmental management of the beach, diving and snorkeling sites in the project's area.
- Environmental procedures for turbidity control and spoil management plan during dredging to include the ceasing of dredge operations if turbidity limits are exceeded.
- Delineation of conservation areas (wetlands) and communication to contractors to prevent any adverse impacts during construction.
- Procedure for invasive species removal and preservation of the existing dune.
- Landscaping to incorporate native vegetation and the use of environmentally friendly agrochemical products.
- Reforestation and mangrove conservation and restoration.
- Procedures for reef substrate and coral transplanting.
- Development of a management plan for nesting sea turtles.
- Compliance with MARPOL.
- Renewable power production, especially solar power.
- Book of safety data sheets.

4.2 Monitoring

The EMP will include the establishment of monitoring programs for the construction and operation of the facility to include but not limited to the following.

- Construction – Monitoring of contractor’s EMP compliance including management of petroleum hydrocarbons, waste management, and protection of areas designated for preservation.
- Pre-, during and post-monitoring protocol for benthic resources including Peterson Cay National Park.
- Coral transplantation and mitigation success monitoring.
- Turbidity monitoring procedure, locations, and turbidity curtains.
- Potable water quality monitoring.
- Wastewater treatment plant effluent water quality monitoring.
- Monitoring of salinity changes to aquifer due to canal construction.
- Establishment of a long-term groundwater monitoring program.
- Establishment of a long-term surface water monitoring program (wetlands and the sea).
- Establishment of a long-term monitoring program for the beach and the project’s snorkeling and dive sites.
- Establishment of a turtle nesting monitoring program.