PROPOSAL FOR BEACH ENHANCEMENT AND STABILIZATION INCLUDING BOULDER REEFS, BOULDER GROYNES AND BEACH SAND TO BE BUILT IN THE NEARSHORE.

at

North of Paynes Bay to Sandy Lane, St. James.

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT.

PLANNING APPLICATION NO. 0932/07/2024C

August 2026

VOLUME 1

EXECUTIVE SUMMARY

BACKGROUND TO ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT



Prepared by:

bain planning + development

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1 ABBREVIATIONS AND ACRONYMS

AOI	Area of Influence
BSTP	Barbados Sea Turtle Project
CIA	Coastal Impact Assessment
CIA	Cumulative Impact Assessment
CZMU	Coastal Zone Management Unit
DPD	Director of Planning and Development
EMMP	Environmental Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
EPD	Environmental Protection Department
ICM	Integrated Coastal Management
NSD	National Sustainable Development
NCSD	National Commission on Sustainable Development
PDA	Planning and Development Act
PDD	Planning and Development Department
PDP	Physical Development Plan
SDG	Sustainable Development Goals
SEP	Stakeholder Engagement Plan
SIA	Social Impact Assessment
TOR	Terms of Reference

2 EXECUTIVE SUMMARY

Introduction

A planning application (ref. 0932/07/2024C) was submitted during July 2024.

Permission is sought for the:

Proposal for Beach Enhancement and Stabilization Including Boulder Reefs, Boulder Groynes and Beach Sand to be Built in the Nearshore at Lot 5-9, Bougainvillea, Sandy Lane, St. James

Site Description

The site is located in St. James on the west coast of Barbados, between Sandy Lane Bay to the north and Paynes Bay to the south.

The study area is 1 km along the shoreline and extends 0.5 km offshore with a total surface area of 0.5 Km/sq. The total footprint area of the proposed structures is 6,500 m/sq.

The properties that border the site are Sandy Lane Lots 1 to 9 and One Sandy Lane.

The Proposal

The proposed design has the following objectives:

- Stabilize the shoreline and restore the beach.
- Facilitate continuous lateral access along the shoreline.
- Reduce the wave energy in the nearshore and at the shoreline.
- Enhance and preserve coastal and marine habitat.

The design includes:

- Three offshore artificial boulder reefs.
- Seven flow-through groynes.
- Sand nourishment for 500 m of shoreline.
- Reconfiguration of existing structures.

Project Benefits

During the 1980s and until the 1990s, there was a wider continuous beach from Sandy Lane Bay to Payne's Bay which supported recreational activity. In the nearshore area there was a developed fringe reef extending the length of the headland. These features were habitat for the hawksbill turtle, coral colonies and other coastal and marine species. There has been a baseline decline in the surface area and quality of the beach and the reef and a decline in the diversity and abundance of the resident species of flora and fauna.

Beach erosion along this stretch of coastline has resulted in damage to property and loss of lateral access. Dry beach areas are no longer available at the site.

Approach and Methodology

The site's characteristics have set the context for the approach to be taken for the ESIA.

The following steps have been undertaken with respect to the ESIA:

- Scoping of potential impacts.
- Identification of study area and impact zones
- Discussions and meetings with Coastal Zone Management Unit (CZMU), Planning and Development Department (PDD) officers, other government agencies and stakeholders such as beach users, surfers, fishers.
- Determination of impacts to be assessed including those considered to be significant i.e. visual, flora and fauna and engineering.
- Baseline data collection.
- Provision for stakeholder involvement, agency meetings, public meeting process and report on matters raised.
-

Evaluation of Impacts

The report comprises a Coastal Impact Assessment (CIA) and a Social Impact Assessment (SIA). Both documents are included within Volume 2.

The following is a summary of the impacts and mitigation measures.

Construction Phase

Construction impacts will all be temporary and short lived.

Impact: Job creation and continuity during construction phase.

Mitigation: No mitigation required.

Impact: Potential health impacts from dust, vibrations, and noise during construction.

Mitigation: Responsibility of site manager on a day-to-day basis. Monitoring of conditions by DPD. Submission of Sediment, Dust Control and Site Management Plan to DPD.

Impact: Loss of Beach Habitat and Species

Mitigation: Responsibility of project team and contractor. Monitoring of conditions by CZMU and DPD.

Impact: Loss of Reef Habitat and Species

Mitigation: Adherence to agreed Construction Methodology. Responsibility of project team and contractor. Monitoring of conditions by CZMU and DPD.

Impact: Turbidity and Sedimentation

Mitigation: Barriers will be regularly inspected and maintained throughout construction. Adherence to agreed Construction Methodology. Responsibility of project team and contractor. Monitoring of conditions by CZMU and DPD.

Impact: Sea Turtle nesting.

Mitigation: Liaise with BSTP. Adherence to agreed Construction Methodology. Responsibility of project team and contractor. Monitoring of conditions by CZMU and DPD.

Impact: Reduction in Marine Water Quality

Mitigation: Marine water quality monitoring and reporting at agreed intervals.

Impact: Turbidity and Sedimentation.

Mitigation: Turbidity Monitoring: Turbidity levels will be monitored continuously by direct observation and turbidity metres before, during, and after in-water construction activities to verify compliance with applicable environmental thresholds and to identify the need for corrective actions if elevated turbidity is observed.

Impact: Disruption to members of the public, beach users and traffic.

Mitigation: Adherence to recommendations of Social Impact Assessment. Monitoring of conditions by CZMU and DPD.

Operational Phase – Coastal Impacts

Impact: The project could result in negative and positive impacts on **beach habitat and species**.

Mitigation: Post development monitoring at intervals to be agreed with the DPD and CZMU.

Impact: The project could result in negative and positive impacts on **reef habitat and species.**

Mitigation: Post development monitoring at intervals to be agreed with the DPD and CZMU.

Impact: The proposed structures could increase the hazards to nesting sea turtles.

Mitigation: The proposed design will create conditions more suitable for hawksbill turtle nesting

Impact: There is a risk of reduced wave energy at the surf break changing the user experience.

***Mitigation*:** The proposed structures are positioned to minmise changes to the surf break. Post development monitoring in consultation with the Barbados Surfers Association.

These positive and negative impacts are summarised in Tables 5.3 and 5.4 of the Coastal Impact Assessment.

Construction Phase – Social Impacts

Impact: **Construction:** employment creation. Construction requires goods and services from local companies. Construction workers make purchases.

Mitigation: No Mitigation required.

Impact: **Community Health and Safety:** Potential health impacts on beach users, construction work from noise and dust. Risk of accidents.

Mitigation: Adherence to Community Health and Safety Management Plan and Stakeholder Engagement Plan. Monitoring by DPD.

Impact: **Community Health and Safety:** Potential health impacts on beach users, construction work from noise and dust. Risk of accidents.

Mitigation: Adherence to Occupational Health and Safety Plan.

Impact: **Marine and beach related livelihoods and recreation:** Restricted beach access during construction, impacts on surfers, siltation in the nearshore environment, improved lateral access post construction.

Mitigation: Monitoring by DPD and project management.

Operational Phase – Social Impacts

Impact: Improved lateral access along coastline.

Mitigation: Monitor beach width.

Impact: Changes to the surf break.

Mitigation: Engage with surf community during design process to minimize encroachment on existing surf break.

The Terms of Reference of the ESIA specifically require that future engagement and consultation activities be planned to ensure that stakeholders remain informed about the project. To this end, it is recommended that a public relations consultant be hired to implement a stakeholder engagement process.

Cumulative Impacts

A Cumulative Impact Assessment (CIA) examines a project in the context of previous, existing and proposed developments within the area surrounding the application site. A CIA will seek

to determine if these cumulative impacts could be significant. This ensures that the project's potential impacts are not considered in isolation.

Several planning applications and permissions were identified. The applications relate to various types of developments, although many are associated with coastal works. This is indicative of the level of coastal erosion that has occurred over the period.

In general, those planning permissions that have been granted are consistent with the policies of the National Physical Development Plan, 2023.

Stakeholder Consultation

A public meeting is required as part of the ESIA process where members of the public and other interested parties will have an opportunity to express their views at the meeting and make written submissions to the DPD. The ESIA document will be available to the public for a period in advance of the meeting.

Some of this engagement has been undertaken by the DPD as part of the planning application consultation process and comments may be forwarded to the applicant for guidance.

The planning application was also the subject of the publicity process as required by Section 29 of the Planning and Development Act. Neighbours were notified of the proposals in writing, a sign was erected close to the site and a notice placed in the Nation newspaper. The application details were also displayed on the Planning and Development Department's website.

A Stakeholder Engagement Plan (SEP) which includes the identification and analysis of stakeholders and the implementation of a community relations programme is likely to be a condition of any permission granted by the Planning and Development Board.

Mitigation and Environmental Monitoring Measures

This section of the main report (Volume 3) summarises the various mitigation measures that will be implemented during the construction and operational phases. This section also establishes the requirements of the Environmental Management and Monitoring Plan (EMMP) that will be required by condition of any permission granted for the development.

Many of the mitigation measures will be implemented through separate management plans e.g. for waste management, traffic management, disaster management, and construction management. It may also be necessary to implement monitoring programmes to ensure that targets are being met and that legislative requirements are complied with.

Environmental Management Plan

An Environmental Management and Monitoring Plan (EMMP) is included within Section 6 of the Coastal Impact Assessment (Volume 2). Its purpose is to outline measures to avoid, reduce or remedy any identified negative impacts. This will include **construction** and **operational** phases. The EMMP will therefore provide assurance to stakeholders and government agencies that their requirements, with respect to environmental performance, will be met.

The broad purpose of the EMMP is to:

- Ensure that standards of good construction practice are adopted throughout the construction phase.
- Provide a mechanism for ensuring that measures to mitigate potentially adverse environmental impacts are implemented.

EMMPs provide a critical link between ESIA and project implementation. In effect, EMMPs help to implement the mitigation and monitoring programmes for the project.

In addition to the measures outlined in the Coastal Impact Assessment, the EMMP will also include the following:

- Preparation of Sediment, Dust Control and Site Management Plan for construction phase.
- Preparation of Construction Management Plan.
- Preparation of Waste Management Plan.
- Emergency, accident and disaster management plan.
- Reference to compliance with relevant standards e.g. planning conditions.
- Responsibilities for plan implementation.
- Staff training.
- Monitoring programme.
- Contingency plan when impacts are greater than expected.

The project team will have responsibility for overseeing the EMMP and ensuring the identified mitigation measures are implemented.

The aim will be to:

- Enhance positive impacts.
- Avoid negative impacts.
- Minimise negative impacts that cannot be avoided.
- Resolve and fix negative impacts that cannot be minimised.

It is expected that the submission of an EMMP will be a requirement (condition) of any permission granted by the Planning and Development Board. It will include many of the issues discussed within this ESIA together with matters identified through agency and stakeholder consultation as well as public review of the ESIA. The document will be submitted for approval by the DPD.

Conclusion

This Environmental and Social Impact Assessment has examined the main impacts associated with the proposed coastal improvement works. None of the issues arising from the assessment of impacts were found to be insurmountable and, in this respect, mitigation and monitoring measures have been suggested.

It must also be borne in mind that not all impacts have the potential to be negative and that there will be significant impacts of a positive nature if the project is implemented. These relate mainly to restoration of the beach along this stretch of coastline, improved public access, protection of property and protection of sea habitat.

This proposal will result in significant lasting benefits through beach and habitat restoration, public beach access and protection of property.

BACKGROUND TO ENVIRONMENTAL IMPACT ASSESSMENT

3 INTRODUCTION

3.1 Report Structure

This Environmental and Social Impact Assessment (ESIA) has been coordinated by Bain Planning and Development together with the following consultants:

- Dr. Janice Cumberbatch
- W.F. Baird and Associates Ltd. (Baird).

The report is divided into three volumes as follows:

VOLUME 1: Executive Summary, Introduction and Background to Environmental Impact Assessment.

VOLUME 2: Impact Assessment Reports.

VOLUME 3: Cumulative Impacts, Construction Impacts, Mitigation and Environmental Monitoring, ESIA Conclusions.

3.2 Background

The Director of Planning and Development (DPD) has advised that an Environmental and Social Impact Assessment (ESIA) is required for the proposed development.

The legislative context requiring the preparation and submission of an ESIA is established by the Planning and Development Act, 2019; the Planning and Development (Amendment) Act 2020; and the Planning and Development (Environmental Impact Assessment) Regulations 2021.

An ESIA is required for this proposed development by virtue of its nature, scale and location that could significantly affect the environment. (Section 30 (1) of the Planning and Development Act, 2019-5).

The purpose of the ESIA is to identify and assess potential significant environmental effects (both positive and negative) associated with the proposal and to recommend mitigation measures where appropriate.

On completion of the ESIA, a public consultation exercise is required prior to the determination of the planning application by the Planning and Development Board.

The Terms of Reference for the ESIA are included in Annex A.

3.3 Planning Application

A planning application (ref. 0932/07/2024C) was submitted during July 2024.

Permission is sought for the:

Proposal for Beach Enhancement and Stabilization Including Boulder Reefs, Boulder Groynes and Beach Sand to be Built in the Nearshore at Lot 5-9, Bougainvillea Sandy Lane, St. James

The planning application submission is included within Annex B.

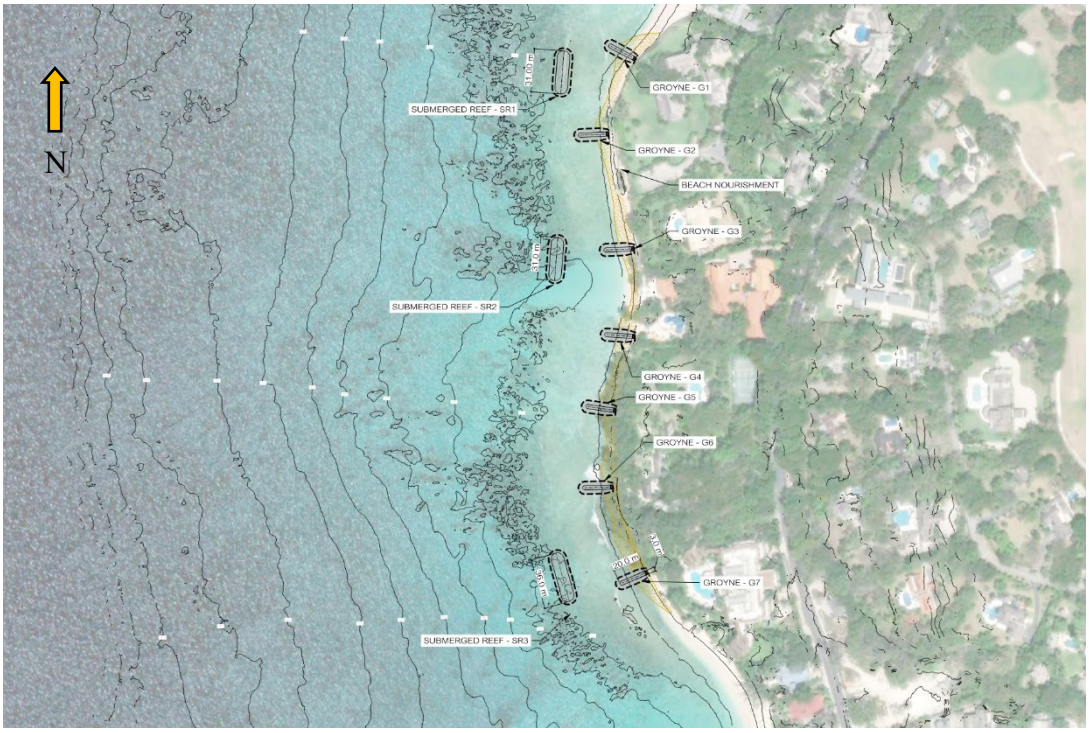


Figure 3-1 The Site

3.4 Project Description

The owner of Sandy Lane Lot 7, Bougainvillea, proposes to stablise and develop the beach and nearshore between Sandy Lane Bay and Paynes Bay. This headland encompasses the 500m long shoreline adjacent to Lots 4 – 9 and One Sandy Lane. Intended improvement is to the benefit neighbouring beachfront properties and most importantly the beach using public.

The design includes:

- Three offshore artificial boulder reefs.
- Seven flow-through groynes.
- Sand nourishment for 500 m of shoreline.
- Reconfiguration of existing structures.

The project is described in full within the Coastal Impact Assessment (CIA) included within Volume 2 of this ESIA.

3.5 Project Justification and Benefits

During the 1980s and until the 1990s, there was a wider continuous beach from Sandy Lane Bay to Payne's Bay which supported recreational activity. In the nearshore area there was a developed fringe reef extending the length of the headland. These features were habitat for the hawksbill turtle, coral colonies and other coastal and marine species. There has been a baseline decline in the surface area and quality of the beach and the reef and a decline in the diversity and abundance of the resident species of flora and fauna.

Beach erosion along this stretch of coastline has resulted in damage to property and loss of lateral access. Dry beach areas are no longer available at the site.

The proposed design has the following objectives:

- Stabilize the shoreline and restore the beach.
- Facilitate continuous lateral access along the shoreline.
- Reduce the wave energy in the nearshore and at the shoreline.
- Enhance and preserve coastal and marine habitat.

3.6 Study Area

The site is located in St. James on the west coast of Barbados, between Sandy Lane Bay to the north and Paynes Bay to the south. The site location and footprint of the proposed structures are shown in Figure 3.1.

The study area is 1 km along the shoreline and extends 0.5 km offshore with a total surface area of 0.5 Km/sq. The total footprint area of the proposed structures is 6,500 m/sq.

The project is primarily on coastal lands of the Government of Barbados with minor areas of the design located on adjacent private property. This is caused by the progressive movement of the waterline inland.

The properties that border the site are Sandy Lane Lots 1 to 9 and One Sandy Lane.

3.7 Analysis of Alternatives

The Coastal Impact Assessment included in Volume 2 of this ESIA considers alternative designs and stresses that the design is conceptual at this stage and subject to change.

3.7.1 'No Development Option'

Under the no development option, the stretch of coastline would continue to suffer from erosion resulting in the potential for further damage to property and restricted, if any, lateral access to the public.

3.8 Approach and Methodology

The site's characteristics have set the context for the approach to be taken for the ESIA.

The following steps have been undertaken with respect to the ESIA:

- Scoping of potential impacts.
- Identification of study area and impact zones
- Discussions and meetings with, Coastal Zone Management Unit (CZMU), Planning and Development Department (PDD) officers, other government agencies and stakeholders such as beach users, surfers, fishers.
- Determination of impacts to be assessed including those considered to be significant i.e. visual, flora and fauna and engineering.
- Baseline data collection.
- Provision for stakeholder involvement, agency meetings, public meeting process and report on matters raised.

3.8.1 Approach

The foregoing has resulted in a phased approach to the ESIA process to identify the main areas of concern which fed into the scoping of potential impacts and subsequent identification of

impacts to be assessed. The next phase involved data collection and analysis, general project research and field studies, followed by an analysis of findings and report preparation.

4 LEGISLATIVE, REGULATORY AND POLICY FRAMEWORK

4.1 Legislation Acts

4.1.1 Planning and Development Act 2019

The Planning and Development Act defines the meaning of development as:

(a) the carrying out of building, engineering, mining or other operations in, on, over or under any land;

(b) the making of any material change in the use of any building or land; or

(c) the subdivision of land.

Section 30 of the Act states that:

The Director may require an environmental impact assessment to be carried out by the applicant in respect of any application for permission to develop land, if the proposed development, by reason of its nature, scale or location, could significantly affect the environment.

The Terms of Reference state that an ESIA is required because the planning application involves coastal development and mining operation (deposit of beach materials on the foreshore or seabed).

On completion of the ESIA, the document is submitted to the DPD who will carry out further agency consultations. The public consultation phase follows, and a Public Notice is placed in the press advising the public that the ESIA is available for inspection at selected locations and that a public meeting will be held. The date and venue of the meeting will be indicated in the Public Notice. Members of the public who attend the meeting are given the opportunity to comment on the proposals. A representative of the PDD will attend only to observe the proceedings.

A report of the public meeting is submitted within two weeks for consideration by the DPD.

On completion and assessment of both the planning application and the ESIA, the application will be referred to the Planning and Development Board to be determined. The DPD will either, recommend that planning permission be refused, or granted subject to relevant conditions and informative clauses.

Failure by an applicant to comply with the terms or conditions of any planning permission granted by the Board can result in enforcement action being taken by the DPD.

4.1.2 Coastal Zone Management Act

The Coastal Zone Management Act, 1998 is ‘an Act to provide for the more effective management of the coastal resources of Barbados, for the conservation and enhancement of those resources and for matters related thereto’. It provides a comprehensive, statutory basis for coastal zone management and planning in Barbados. It has sought to coordinate and update previous fragmented statutes relevant to coastal management and makes provision for the protection of coral and other marine reserves, the creation of marine reserves and the identification of critical areas of concern not covered by current legislation.

The Act prohibits coral damage, removal, harvesting or trade. The Act also regulates the use of beaches.

The Updated Integrated Coastal Zone Management Plan 2020 (see Section 4.5.2 below) has been the subject of a public consultation process as required by the Act.

4.1.3 Marine Pollution Control Act

The Marine Pollution Control Act is 'an Act to prevent, reduce and control pollution of the marine environment of Barbados from whatever source.'

Under the Act, the release of any pollutant into the environment which violates any of the provisions of the Act is declared an offence under Section 3. The Act applies to all forms of waste disposal and discharges that could negatively impact marine water quality and the Director of the Environmental Protection Department has extensive powers to control marine pollution, assisted by marine pollution control inspectors designated by the Minister under Section 5.

A Register of Pollutants has been established, which provides a list of all current and potential future sources of pollution on the island. The list includes all current dischargers of waste and the nature of waste being discharged. The list is updated as new dischargers are established. A List of Prohibited Concentrations has also been established, which outlines the standard discharge concentration for chemicals listed on the Register.

4.1.4 Tourism Development Act

The Tourism Development Act, 2002 is described as 'an act to encourage the sustainable development of the tourism industry by providing duty-free concessions and income tax concessions for approved tourism projects and certain tourism entities and for other related matters'.

This Act, which replaced the Hotel Aids Act of 1956, significantly expands incentives for investment in the Tourism and Hospitality sector in Barbados beyond the traditional accommodations sector. Incentives are offered in the new Act to restaurants, recreational facilities and services, development of attractions which emphasises the island's natural, historic and cultural heritage and for the construction of properties in non-coastal areas. Provision is made in the Act for investors in tourism projects to benefit from write off of capital expenditure and 150% interest. There is also exemption from import duty, value added tax and environmental levy with respect to furniture, fixtures and equipment as well as building materials, supplies and equity financing.

4.1.5 National Conservation Commission Act

The National Conservation Commission Act is 'an Act to revise and consolidate the law relating to public parks, beaches and related matters, and to make provision for the conservation of sites and buildings of national interest'.

The National Conservation Commission has several functions including to control, maintain and develop the public parks, public gardens and beaches of Barbados.

4.1.6 The Trees Preservation Act

The Trees (Preservation) Act applies to any tree with a circumference of one metre or more at a point half a metre or more from the ground; but does not apply to a tree the killing of which

is for the prevention of imminent danger or is in compliance with an obligation under any other enactment.

This Act also sets out the procedures involved in obtaining a Permit to Kill a Tree from the Director of Planning and Development. A survey will be undertaken of the development site to establish if a Permit is required to remove any trees to facilitate construction of the photovoltaic farm.

4.2 Regulations

4.2.1 The Health Services (Building) Regulations 1969

These regulations are overseen by the Environmental Protection Department (EPD) and relate to limited building control functions.

The Health Services Act (1969) provides the legal framework for the promotion and preservation of health in Barbados. The Environmental Protection Department enforces the Act in respect of the monitoring and control of conditions likely to affect the quality of land, air and water and the general health and environmental well-being of the inhabitants of Barbados.

4.2.2 Health Services Act, 1969 and Nuisance Regulations

An Act relating 'to the promotion and preservation of the health of the inhabitants of Barbados.'

Includes provisions for the abatement of nuisances and the removal or correction of conditions injurious to public health.

Authorises the Minister to compel works in the interest of public health.

Regulations allow for the control of nuisance, including any 'matter, thing, deposit, or accumulation of liquid or solid matter' deemed unsanitary, injurious, or dangerous to health, or likely to become so; unpermitted discharge of industrial waste or other noxious matter; conditions that promote the proliferation of public health disease vectors.

4.2.3 Groundwater Zoning Policy

In 1964, the government of Barbados created a policy that designated five Groundwater Protection Zones around the island. This helped protect public supply wells from contamination from bacteria. The five zones are summarised as follows:

- Zone 1 – The most restrictive zone which prohibits new building and new water connections.
- Zone 2 - Allows development but with control over waste disposal including the use of septic tanks.
- Zone 3 – Similar to Zone 2 but without the septic tank requirement.
- Zone 4 – Higher land - no special restrictions.
- Zone 5 – Coastline - no special restrictions.

Although progressive at the time, the policy is now considered obsolete. It restricted development over large tracts of land and over the years there had been encroachment in some Zone 1 areas.

During 2020, Government published The Green Paper on the 2020 Water Protection Zoning Policy (Ministry of Energy and Water Resources and Barbados Water Authority, 2020).

It is being proposed that the existing Zones 1 – 5 be replaced by new Zones A – E as outlined below:

- Zone A – a strict exclusion zone, smaller in area than the existing Zone 1, with no new developments and restricted agriculture.
- Zone B – a pathogen management zone, with stricter rules for sewage treatment and disposal.
- Zone C – a chemicals management zone, with restrictions on chemicals storage, use and disposal. Regulations for nutrient removal (nitrates and phosphates) from wastewater that recognises potential impacts on nearshore ecosystems.
- Zone D – a recharge controlling zone that encompasses the additional limestone areas, with continued standards for wastewater treatment.
- Zone E – a non-recharge contributing area that primarily consists of areas that do not contribute to the recharge of aquifers (i.e. Scotland District). Again, there will be minimum standards for wastewater discharge with the objective of protecting coastal water quality.

The application site falls within Zone D of the Revised Water Zone Policy.

4.3 Standards

4.3.1 National Noise Policy (2020 revision)

The Policy paper presents and discusses concepts and proposals for noise control and abatement in Barbados.

The Policy paper proposes:

- guideline values for community noise;
- noise emission limits for motor vehicles.

4.3.2 Draft List of Prohibited Concentrations

Intended to accompany the Marine Pollution Control Act, the list presents proposed compliance standards for a range of marine pollutants.

The List identifies preliminary compliance standards in relation to:

- ambient marine water quality;
- end-of-pipe concentrations for domestic wastewater;
- petroleum hydrocarbon end-of-pipe standards for Class 1 waters.

4.3.3 World Health Organisation Ambient Air Quality Guidelines 2021

The WHO Air quality guidelines are a set of evidence-based recommendations of limit values for specific air pollutants developed to help countries achieve air quality that protects public health.

The guidelines recommend levels and interim targets for particulate matter, ozone, nitrogen dioxide, sulphur dioxide, and carbon monoxide.

4.4 Agencies

4.4.1 Planning and Development Department

- Governed by the Planning and Development Act 2019.

- Responsible for preparing and implementing the Barbados Physical Development Plan
- General development planning, control, enforcement, and regulation, including ongoing monitoring of the implementation of construction activities.

4.4.2 Coastal Zone Management Unit, Ministry of Environment and National Beautification, Green and Blue Economy

- Enforces the Coastal Zone Management Act.
- Responsible for application of the Integrated Coastal Zone Management Plan.

4.4.3 National Conservation Commission, Ministry of Environment and National Beautification, Green and Blue Economy

- Governed by, implements, and enforces the National Conservation Commission Act.

4.4.4 Ministry of Transport, Works and Water Resources

- Responsible for providing planning and policy advice and technical services in relation to transport infrastructure, and for promoting safety in all work relating to roads.
- Responsible for implementation and enforcement of the Highways Act.

4.4.5 Environmental Health Department, Ministry of Health and Wellness

- Enforces the Health Services Act and Nuisances Regulations.

4.4.6 Environmental Protection Department, Ministry of Environment and National Beautification, Green and Blue Economy

- Enforces the Marine Pollution Control Act.
- Enforces the Health Services (Building) Regulations.
- Responsible for application of the National Noise Policy 2008, and WHO Ambient Air Quality Guidelines.
- Monitors and controls 'conditions likely to affect environmental quality and environmental well-being'.

4.5 Land Use Management Plans

4.5.1 Physical Development Plan 2023

The Physical Development Plan 2023 (PDP) has been the subject of a public consultation process and has been revised to take consideration of comments received during this process as well as certain aspects of the new Planning and Development Act 2019.

4.5.1.1 Strategic Policies –Section 2

The site falls within the Urban Corridor identified in Section 2.1, Map 1 (Growth Management Framework) where a mix of uses and densities may be permitted with the policy direction directed towards:

- Infill.
- Intensification.
- Reinvestment.

Policy 2.1.3 states:

'The Urban Corridor, refined to reflect 2016 settlement patterns, will be the focus for new development and growth, recognising that this is where the greatest existing and planned concentration of population and jobs, infrastructure and development exists.'

Section 2.2.2 (Natural Heritage System):

Enables the protection and enhancement of the quality of the natural environment through soil and groundwater conservation, protection of land and marine biodiversity, and the prevention of air, land and water pollution. The implementation of the Roofs to Reefs Programme will advance conservation efforts that will help reduce pollution and protect the natural heritage system.

This section of the PDP includes a map of the proposed terrestrial landscape sub-areas of Barbados. The site falls within the 'West' area which is:

Characterised by a series of shore parallel limestone ridges, deeply incised by numerous gullies and other typical Karst feature especially in upper and middle reaches. Gullies are heavily forested, and there are numerous remnant mangrove and other wetlands at outlets to the sea. The flat coastal plain is relatively narrow and heavily urbanised.

Policy 2.2.2.9 relates to The Climate Crisis and Disaster Risk Reduction and states that:

The NHS will be valued as a means of mitigating the effects of the climate crisis and the related risks of natural disasters. It contributes to climate crisis adaptation through the conservation of a range of ecosystem services (provisioning, protection, regulation, listed below) that will in turn confer reduced vulnerability to, and enhance resiliency of, human populations, infrastructure, and sectoral undertakings in the face of evolving natural hazard and climate crisis threats.

Of relevance to the proposed development is the reference to protection by storm surge mitigation and risk mitigation measures.

Under Policy 2.2.2.10, coral reefs and natural beaches are recognised as key components of the Natural Heritage System.

Map 6 (Natural Heritage System) identifies part of site as falling within the Folkestone Marine Reserve (see section 4.5.2 below) as part of the Coastal Management Area.

The Folkestone Marine Reserve is also designated as a Natural Heritage Conservation Area in Section 4.3.4 of the Plan:

The Folkestone Marine Reserve was designated in 1981. The Marine Reserve extends to about one kilometre from the shore over a distance of approximately three kilometres between Folkestone and Sandy Lane. It has been divided into four zones with the intention of facilitating a multiple use system while at the same time protecting the coral reefs. These zones comprise (from north to south) a "Scientific Zone", "Northern Water Sports Zone", "Recreational Zone" and "Southern Water Sports Zone". The quality of the reefs within the Folkestone Marine Reserve has seriously declined in recent decades, primarily as a result of sewage pollution and, to a lesser degree, increased sediment deposition from surface water runoff. The Bellairs Research Institute monitors reef quality and has experimented with using the site as a demonstration of habitat recovery, including possible coral reef transplantation. The

Folkestone Marine Reserve is being considered by the Coastal Zone Management Unit for expansion to Fitts Village in the south and Weston in the North

Paragraph 2.2.2.35 of the Coastal Zone Management Section states that:

Applications for major development or change of land use within Coastal Zone Management Sub-Areas outlined in Figure 4 will be subject to an Environmental Impact Assessment and/or Marine Impact Assessment or other supporting environmental investigation, subject to the satisfaction of the Director of Planning and Development or designate. In considering such applications, the Planning and Development Department (PDD) will act on advice provided by the CZMU, Environmental Protection Department and Ministry of Transport, Works and Water Resources and may impose conditions of approval such as maintenance requirements. In preparing these Assessments and studies, the applicant will have regard for the Integrated Coastal Management Plan principles which outline the need to establish sufficient setback to allow for safety, to preserve the character of the coastal landscape and retain views to the sea. These studies will also analyse any impact of development to coastal and marine environments and habitat and take into consideration susceptibility to the climate crisis and natural disasters and identify mitigation measures that result in no net negative impact.

Paragraph 2.2.2.38 states that:

The construction and repair of man-made coastal structures will be managed to ensure adherence to best practices. Man-made coastal structures in Barbados include harbours, breakwaters and berthing facilities, jetties and piers, protective structures including seawalls and revetments and beach nourishment schemes.

a) Where repair of older structures or new coastal structures is required, these will be subject to a Marine Impact Assessment.

b) The repair of old structures should be justified in relation to the most recent understanding of environmental conditions and the design or re-design of such structures should be tailored accordingly.

c) To support biodiversity, the design or repair of coastal structures will integrate habitat friendly design, in particular as it relates to endangered species such as sea turtles.

In relation to Natural Hazards, the stretch of coastline where the development is proposed is identified in Map 7 (Natural Hazards) as falling within a 100 Year Flood line

4.5.1.2 Land Use and Built Form Policies (Section 3)

The site lies just outside the Tourism Corridor identified in Section 2.1, Map 2 (Island Settlement Structure).

Policies for Tourism Corridors are included in Section 3.6. The following General Policies are included in Section 3.6.2:

- *All new development and redevelopment in coastal Tourism areas will be consistent with the policies of the Integrated Coastal Management Plan (1999) and will include strategies for climate change adaptation and disaster risk reduction.*
- *Development or redevelopment of waterfront properties will be designed to maintain and enhance views to the sea, preserve existing Shore Access Points and provide new ones where possible.*

- *A Transportation Impact Assessment which addresses the impacts of the proposal on the existing road system and improvements necessary to accommodate the proposal may be required by the Director of Planning and Development.*
- *All new development and redevelopment will be required to provide adequate on-site parking.*
- *Development or redevelopment should incorporate measures to improve the pedestrian environment along the frontages of the property, including the provision of sidewalks, screening from parking areas and appropriate lighting.*
- *Where tourism uses are proposed adjacent to residential properties, additional setbacks and screening may be required to mitigate noise and visual impacts.*

4.5.1.3 Implementation (Section 5)

Section 5.2 of the Plan seeks to explain the Development Approval Process:

Paragraph 5.2.2 states that: where development applications do not, in the opinion of the Director of Planning and Development, conform to the policies of the PDP:

a) The applicant may be refused, without further consideration, or

b) Where the Director of Planning and Development deems further consideration of the application is warranted, they may:

i) Undertake a detailed planning review of the merits of the application;

ii) Require the proponent to prepare one or more of the following to identify and address impacts arising from the potential development:

• An Environmental and Social Impact Assessment where it is required or where the DPD considers that there may be environmental impacts and/or impacts to Core Assets on this island or the development is within a floodplain, natural hazard or risk prone area.

• An Agricultural Impact Statement (AIS) where it is required or where the DPD considers that there may be an impact on the Food and agricultural zone and food production.

Section 5.3 states that Impact Assessments are a key tool to assess proposed development and infrastructure projects. There are seven types of impact assessment contemplated in the PDP Amended: **Environmental and Social Impact Assessments**; Marine Impact Assessments Heritage Impact Assessments; Natural Hazard Impact Assessments; Market Impact Assessments; Agricultural Impact Assessments and; Traffic Impact Assessments.

Where Impact Assessments are required, they shall be completed to the satisfaction of the Environmental Impact Assessment Committee and the DPD, prior to approval being given. Approvals of development subject to Impact Assessments may contain certain conditions of approval to ensure that adverse impacts of such development are mitigated.

4.5.2 Integrated Coastal Zone Management Plan 2020

According to the Coastal Zone Management Unit's website (www.coastal.gov.bb) –

'Integrated Coastal Management (ICM) involves the comprehensive assessment, setting of objectives, planning and management of coastal systems and resources, taking into account traditional, cultural, historical perspectives, cumulative impacts, and conflicting interests and uses. It is a continuous and evolutionary process for achieving sustainable development

through participation of the public and private sectors and with the support and interest of local communities'.

The Coastal Zone Management Act includes eight Sub-Areas, with the site falling within Sub-Area 6 (Maycocks to Batts Rock):

'This Sub Area extends along the leeward west coast of the island. Land use immediately adjacent to the coast is principally focused on tourism and residential development incorporating the regional centres of Speightstown and Holetown with a high population density that increases the closer in proximity to Bridgetown that is situated to the southern part of this Sub-Area. Hotel development dominates large sections of the seaward side of the coast road where constructions are built very close to the shoreline'.

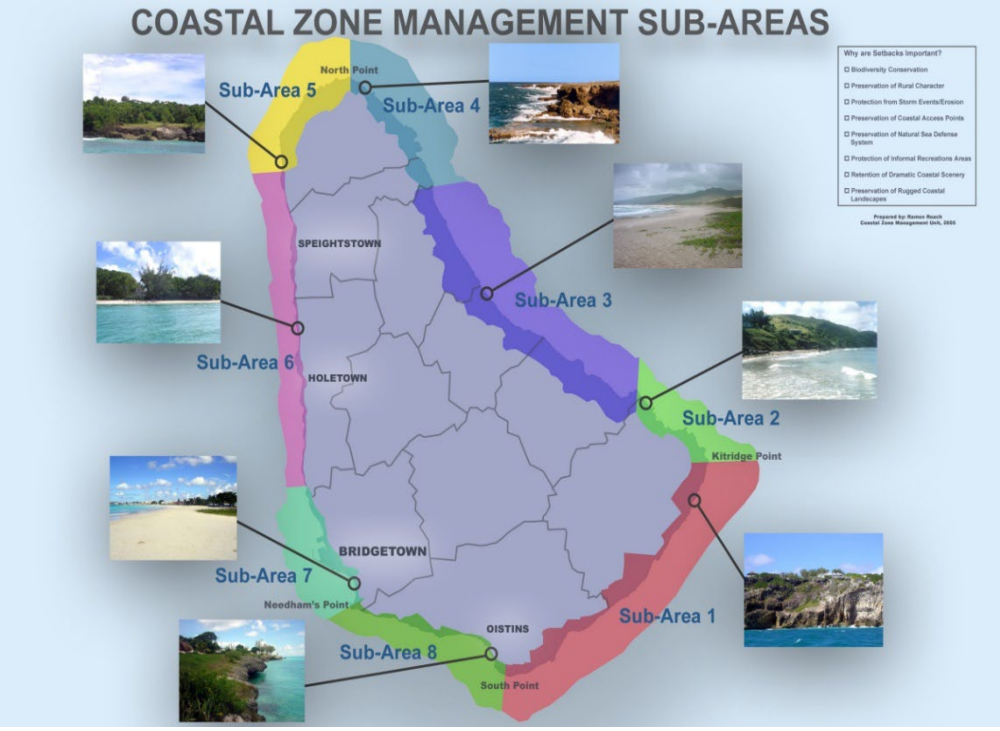


Figure 5-1 Coastal Zone Management Sub Areas.

Within Sub-Area 6Folkestone Marine Reserve. Fals within the overall study area.

The stretch of coastline is described as having the following characteristics:

- A naturally eroding coastline within its northern portion and a naturally stable coastline within its southern portion.
- Coral reefs.
- Storm surge 100 years.
- Storm surge and sea level rise.
- Sea turtle nesting area to the south.

4.5.3 The National Sustainable Development Policy

The National Sustainable Development (NSD) Policy is a product of the National Commission on Sustainable Development (NCSD). The overarching goal of the Policy is *'to ensure the optimization of the quality of life for every person by ensuring that economic growth and*

development does not occur to the detriment of our ecological capital.' The major objectives of the Policy are:

1. To formulate a national definition of sustainable development.
2. To provide a national framework for decision-making based on our principles of sustainable development.
3. To promote principles of sustainable development and encourage all persons to adopt and apply these principles in every aspect of decision-making.
4. To sensitise and educate all persons in Barbados about key issues and conflicts between development and environment and the need to make wise consumption and production choices.

The above-mentioned objectives will be achieved by ensuring that quality of life is endorsed as the overarching goal and that this is composed of a variety of economic, social, cultural and personal factors and is not based on income earnings or accumulated wealth alone. Bio-physical 'limits to growth' are taken into consideration when decisions are made with regards to resource use. These limits include the:

- Finite supply of some resources.
- Natural carrying capacity of ecosystems.
- Fragility and vulnerability of some ecosystems.
- Finite resilience of ecosystems to resist and recover from man's impacts.
- Limited waste assimilation capacity of the natural environment.

4.6 Multilateral Environmental Agreements and Charters

4.6.1 The United Nations Convention on Biological Diversity (CBD)

As a party to the 1992 United Nations CBD, Barbados has agreed to adopt economically and socially sound measures that act as incentives for the conservation of biodiversity. This also includes promoting the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings; promoting environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas; and the rehabilitation and restoration of degraded ecosystems through the development and implementation of plans or other management strategies.

With regard to this ESIA, Article 14 requires that Contracting Parties shall "Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimising such effects and, where appropriate, allow for public participation in such procedures" (Government of Barbados, 2019).

4.6.2 The United Nations Framework Convention on Climate Change

The United Nations Framework Convention on Climate Change came into force in 1994 and established an international environmental treaty to combat *'dangerous human interference with the climate system'*, in part by stabilizing greenhouse gas concentrations in the atmosphere.

The 1997 Kyoto Protocol and 2015 Paris Agreement build on the Convention.

The Paris Agreement was a considerable achievement for the international community. For the first time, a climate change agreement brought all countries into an ambitious undertaking to

combat climate change by limiting global temperature rise to well below 2 degrees Celsius, and to strive for 1.5 degrees Celsius.

Every year, Parties to the Convention meet in Conference of the Parties (COPs), as well as in technical meetings throughout the year, to advance the aims and ambitions of the Paris Agreement and achieve progress in its implementation.

4.6.3 2030 Agenda for Sustainable Development SDG

In the 2030 Agenda for Sustainable Development SDG target 8.9, aims to ‘by 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products’. The importance of sustainable tourism is also highlighted in SDG target 12.b. which aims to ‘develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products’.

Tourism is also identified as one of the tools to “by 2030, increase the economic benefits to Small Island developing States and least developed countries” as comprised in SDG target 14.7.

ANNEX A

(Terms of Reference)

Draft Terms of Reference for the Conduct of Environmental Impact Assessment Application 0932/07/2024C Proposal for Beach Enhancement and Stabilization Including Boulder Reefs, Boulder Groynes and Beach Sand to be Built in the Nearshore at Lot 5-9, Bougainvillea Sandy Lane, St. James June 1, 2025

Introduction

This Terms of Reference (TOR) for an environmental impact assessment (EIA) in respect of **Application No. 0932/07/2024C Proposal for beach enhancement and stabilization including boulder reefs, boulder groynes and beach sand to be built in nearshore at Lot 5-9, Bougainvillea Sandy Lane, St. James** has been prepared by the EIA Committee on the basis of information currently available to the Committee. That information includes the basic project design and development summary made available by the developer and proponent, preliminary plans made available, and the content of discussions held between the Planning and Development Department, the applicant and agent.

Having regard to the foregoing, the initial scoping to identify key issues and potential impacts for the development has informed the preparation and contents of this TOR.

This TOR should guide the EIA process and the preparation of the environmental impact statement (EIS). The TOR will also guide the EIA Committee and other stakeholders in their review of the EIS.

Project Description

Lots 5 through 9 have one public beach access which is taken between Lots 9 and "One Sandy Lane" which is to the south of the site. The site lies within Zone D of the newly formulated BWA Water Protection Zones, is within the Urban Corridor and is designated as Tourism by the Physical Development Plan (PDP) Amended 2023. There are a number of coastal structures along this site. The southern most structure is a seawall and cemented stone rubble on the site of "Heronetta". Boulder revetment was also utilised along this area. Further to the north are damaged geo-tubes that have been used as groynes (these tubes are unauthorized works). The furthest coastal structures to the north were made up of damaged gabion baskets which provide protection to the toe of seawalls.

The applicant proposes coastal engineering interventions to reduce wave energy, stabilize the shoreline and to increase usable beach area. These works will include

- *Three submerged breakwaters where degraded or absent reefs are located*
- *Seven groynes which would extend from the of the beach past the shoreline into the nearshore.*
- *Beach nourishment with a proposed beach width of 3-5m*
- *Removal of the geo-tubes*
- *Removal of the cemented stone rubble along the southern section of the site*

Legal Basis for EIA

The requirement for an EIA as part of the planning and development process is established by the Planning and Development Act, 2019; the Planning and Development (Amendment) Act 2020; and the Planning and Development (Environmental Impact Assessment) Regulations 2021 (hereafter referred to as the Environmental Impact Assessment Regulations).

An EIA is required for this proposed development by virtue of its nature as a coastal development and mining operation (deposit of beach materials on the foreshore or seabed)

This draft TOR has been developed by the EIA Committee in keeping with the Committee's functions as specified in the Environmental Impact Assessment Regulations.

The applicant may submit to the Director of Planning and Development proposals for the revision of this draft TOR. These proposals should be based on consultations with relevant government agencies, non-governmental organisations, and members of the public with respect to the scope of works for the EIA.

Tasks to be Carried Out in the EIA Process

To ensure a thorough EIA, the following tasks, at a minimum, should be carried out:

- Describe in detail the proposed project and ancillary facilities, including definition of the project footprint and areas of influence, during the construction, operation, and end-of-life stages of the proposed development
- Identify the policies, laws, regulations, standards and guidelines relevant to the project and with which the project must comply
- Examine alternatives to the project, including alternative designs, alternative locations, and the no-option alternative
- Characterise the physical, biological, and socio-economic environment likely to be affected by the project

- Identify and assess impacts of the development on the environment and impacts of the environment on the development
- Consult with stakeholders and the public to obtain their views regarding the development and its environmental and social impacts, and take account of these views throughout the EIA process
- Formulate mitigation measures to avoid, prevent, reduce, remedy and, where possible, offset any significant adverse effects of the development on the environment
- Clearly describe and assess any residual impacts remaining after mitigation
- Develop an Environmental Management Plan (EMP) containing measures to mitigate and monitor adverse environmental impacts and maximise positive environmental impacts

Review of Regulatory Framework

The EIA should include, but should not be limited to, review of the following policies, laws, regulations, standards, and guidelines:

- *Physical Development Plan Amended 2023*
- *Planning and Development Act, 2019-5*
- *Marine Pollution Control Act Cap. 392A1*
- *Coastal Zone Management Act CAP.394*
- *Integrated Coastal Zone Management Plan 1999*
- *National Conservation Commission Act CAP. 393*

Public Participation

During the EIA, opportunity should be given to the interested members of the public to gather information on the proposed project and share any concerns regarding the development. The procedures for public involvement must comprise:

1. A virtual or in-person public meeting held at an appropriate time of day with a minimum period of 14 days' notice. Notice of the meeting should be publicised in at least one daily newspaper and through the service of a notice on the owners and occupiers of adjoining lands.
2. Opportunities for members of the public to make written submissions on their concerns with respect to the potential environmental impacts of the proposed development.
3. A record of the concerns of the community regarding the potential environmental effects of the proposed development.

In cases where social, economic, and cultural conditions are included in a detailed social impact assessment, the EIS should describe the process and outcomes of stakeholder engagement and consultation during the EIA process. This should include, but is not limited to, the following information:

- Key findings from engagement, including a summary of issues and concerns raised by various stakeholder groups and how these will be addressed or have been incorporated into the project design and mitigation measures.
- Future engagement and consultation activities planned to ensure that stakeholders remain informed about the project.

Potential Impacts to be Studied

The EIA should include, but should not be limited to, assessment of the following impacts deemed by the EIA Committee to be potentially significant:

- *Coastal Processes – Possible alteration to natural sediment transport along the shoreline*
- *Water Quality – Effects of construction on turbidity and marine life in the near vicinity*
- *Land use and physical environment – description of topography, geology, land use patterns and land use designations in strategic policy and potential visual impacts of proposed development, and implications for the strategic development of the area.*
- *Social, economic and cultural - description of the project on the social, economic and cultural activities in the area, Eg. Temporary disruption of beach access by fisherfolk, recreational users.*
- *Site Management during and after construction - dewatering plan during construction, sediment, dust and control, noise and safety measures during construction, monitoring after construction for structural integrity*
- *Environmental impact – description of possible effects on sea turtle nesting, effectiveness of revetment against sea level rise and/or further beach erosion, impacts on ecology*
- *Traffic - description of the road network, baseline traffic data, access and mobility arrangements, and potential impacts of the proposed development on transport and mobility arrangements and vice vers*

Environmental Impact Statement

The findings of the EIA are to be presented in an EIS, with contents as outlined below.

Non-Technical Summary

A concise summary of the key contents of the EIS, written using language and vocabulary that can be easily understood by the general public.

Table of Contents

The table of contents should support logical presentation and easy navigation of the information in the EIS.

Glossary and/or List of Acronyms and Abbreviations

A glossary and a list of acronyms and abbreviations should be included to provide clear, understandable explanations of technical terminology used in the EIS.

Introduction

This section should provide an overview of the project and its proponents, including:

- General description of the project, including whether it is a new project, or an expansion or upgrade of an existing development, or it will be conducted in phases and activities of those phases
- Analysis of alternative designs, technologies, and locations for the project
- The purpose and objectives of the project, and the justification for the project (e.g., an explanation of the needs being met by the project at the proposed site, a description of the environmental and/or socio-economic benefits to surrounding communities and the country)
- Brief descriptions of the key entities involved in the project (i.e., the applicant, the proponents, managers of future operations, etc.) including names and contact information for responsible persons within each identified entity

Policy, Legal and Administrative Framework

An outline of relevant laws, regulations, standards, policies, guidelines, laws, and commitments under multilateral environmental agreements that apply to the development. This should consider, *inter alia*, the policy and legal frameworks related to land use and physical development, water resources, waste management, natural resources management, and protected areas management.

Comprehensive Description of the Proposed Project

A full description of the proposed project and ancillary facilities and operations including, but not limited to, details of:

1. Project location, project footprint (including transmission lines) and area of influence, accompanied by clear maps and diagrams as necessary
2. Project design, components, infrastructure and activities during the construction, and operation phases

3. Predicted resource and material requirements during the construction and operation phases
4. Predicted type and quantity of emissions, discharges, and wastes outputs during the construction and operation phases
5. Expected workforce size during the construction and operation phases

Description of the Baseline Environment

A comprehensive description of the baseline environmental and socio-economic conditions within the project footprint and area of influence, including, but not limited to details of*:*

1. Land use and landscape
    a. Land use patterns and land use designations
    b. Landscape and visual amenity
    c. Topography
2. Infrastructure, transport, and mobility
    a. Infrastructure
    b. Traffic and access
3. Natural resources
    a. Geology
    b. Hydrology and water resources, including surface and groundwater quantity and quality
4. Environmental quality
    a. Climate
    b. Air quality
    c. Noise and vibration
5. Biodiversity, species, and habitats
    a. Sensitive biodiversity and ecosystems, whether terrestrial or marine
    b. Natural heritage and conservation areas
6. Social, economic, and cultural conditions

All information about the baseline environment shall be clearly substantiated and verifiable, and appropriately referenced.

Impact Assessment

All impact assessment information shall be clearly substantiated and verifiable, and appropriately referenced. The EIS shall describe the methods used to determine the range of impacts. It shall also clearly identify which impacts are significant and the criteria used to make this assessment. The sources of information used in the assessment and the uncertainties associated with the assessment methods should be clearly identified.

Impacts of project on the environment

The EIS shall describe and present an assessment of potential impacts (including negative and positive; immediate, short-term and long-term; unavoidable, irreversible and reversible; secondary and cumulative) of the proposed development on the environment, including impacts on:

1. Land use and landscape
    a. Land use patterns and land use designations
    b. Landscape and visual amenity
    c. Topography
2. Infrastructure, transport, and mobility
    a. Transport and mobility infrastructure and public access
    b. Traffic and access during and post construction
3. Natural resources
    a. Geology
    b. Hydrology and water resources, including surface and groundwater quantity and quality
4. Environmental quality
    a. Construction activities such as site clearance, earthworks, material storage and spoil disposal
    b. Operation and maintenance activities
    c. Noise and vibration during construction activities
5. Biodiversity, species, and habitats
    d. Sensitive biodiversity and ecosystems, whether terrestrial or marine
    e. Natural heritage and conservation areas
6. Social, economic, and cultural conditions

Consideration shall be given to all relevant environmental hazards and environmental change processes and how they are likely to change, affect, or be exacerbated by the project, either directly or indirectly; the type of changes or affects; and over what area, or on what scale, the changes or affects are likely to take place.

Impacts of the environment on the project

The EIS shall describe and present an assessment of potential impacts (including negative and positive; immediate, short-term and long-term; unavoidable, irreversible and reversible; secondary and cumulative) of the environment, including physical, biological and socio-economic-cultural conditions, on the proposed development.

Environmental Management, Mitigation, and Monitoring

The EIS shall include a draft EMP to prevent, mitigate and monitor impacts identified in the EIA. The EMP should clearly explain how the included measures address the identified

impacts and should cover all phases of the project, including construction, operation, and end-of-life. There should be provision for the EMP to be further advanced and refined following the conclusion of the EIA process, including the public consultation phase. Provision should also be made for periodic review of the EMP once the project becomes operational.

The EMP should include, *inter alia*:

- Environmental performance objectives for the project
- An environmental management framework
- Focused management plans with a high level of operational detail for sensitive or high-risk aspects of the project
- A detailed monitoring plan, including performance criteria for measuring the extent of environmental impacts or the success of mitigation measures, and for ensuring early detection of impacts.
- Environmental management and stakeholder consultation requirements that will need to be met by project contractors.
- Staffing facilities and amenities and equipment requirements and training programmes or capacity development necessary to ensure the successful EMP implementation.
- Considerations related to hazard vulnerability and risk mitigation.
- A process for responding to accidents and emergencies, including those arising from operations of the facility and those arising for technological and natural events outside the facility.
- A process for managing and responding to stakeholder concerns or complaints.
- A general closure and decommissioning plan, as appropriate.

The contents of the EMP should be cross-referenced to relevant text in the body of the EIA report.

Conclusions and Recommendations

This section typically provides justification for project approval. It should provide an overall evaluation of the positive and negative impacts of the project and present the main conclusions arising from the EIA and recommendations for advancing the project, including key environmental management and mitigation measures that should be undertaken. A tabular summary may be presented of the anticipated impacts, magnitude, mitigation measures (if mitigable), and residual impacts after mitigation.

The conclusions and recommendations should be clearly cross-referenced to relevant text in the body of the EIS, and should include a matrix summarising how the TOR have been addressed, cross-referencing the contents of the TOR to relevant sections of the EIS.

Disclosure of consultants

This section should identify professionals/experts who have contributed to the EIA and preparation of the EIS, including information about their areas of expertise, qualifications and experience, the services provided, and their contact details. This section assists in the verification that the EIS has been prepared by persons with the appropriate qualifications and expertise.

References

All information sources that have been used or consulted during the EIA and preparation of the EIS should be appropriately referenced.

Appendices

Appendices contain materials that support the main body of the EIS. These may include, but are not limited to:

- Detailed technical information, e.g., geotechnical studies, engineering reports, technical calculations
- Maps, site plans, schematic drawings, photographs, and other illustrative figures
- Draft management plans
- Summaries of public outreach and consultation activities and their results
- A table summarising environmental mitigation and management commitments.

ANNEX B
(Application)

Application No.: 0932/07/2024C
Land Registration No.: 37.16.01.012/X
Date Received.: July 10, 2024

PLANNING AND DEVELOPMENT DEPARTMENT

Planning and Development Act, 2019

Application for Permission to Develop Land

TO THE DIRECTOR OF PLANNING:

I HEREBY make an application for permission to carry out the development described hereunder and on the attached plans and drawings.

(Signed) _____

FULL NAME AND ADDRESS OF APPLICANT:

D'EMPAIRE
Mr. Francisco Bolinaga
Lot 7
Bougainvillea Sandy Lane, Saint James Barbados
St. James

Telephone: +58 212 264 3565
Email: fbolinaga@dra.com.ve

NAME AND ADDRESS OF AGENT:

W.F. BAIRD & ASSOCIATES
Mr. David Turner
Lot Suite No. 4 Evergreen house
3rd Avenue Belleville
Belleville
St. Michael
BB11114

Telephone: 2464300845
Email: dturner@baird.com

For Office Use Only:
Officer's Comments: N/A

Accepted By: Wade Herbert **Fee: 500.00** **Receipt No. 668ECC6059EEF**

PARTICULARS OF APPLICATION
(the word "land" includes any buildings thereon)

(1) (i) Particulars of the applicant's interest in the land (e.g., free holder, lessee, prospective purchaser,) etc.:
FREEHOLDER

(ii) Is the land bound by any restrictive covenants? NO

(iii) If the applicant is a prospective purchaser of lessee of the land, state whether the vendor or lessee has consented to the proposed development - NO

(2) Address or location of the land to be developed	(2) Lot 5 - 9 Bougainvillea Sandy Lane, Barbados St. James
(3) Describe briefly the proposed development, including the purpose for which the land and/or buildings are to be used. If they are to be used for more than one purpose, give details.	(3) Proposal for beach enhancement and stabilization including boulder reefs, boulder groynes and beach sand to be built in the nearshore. subdivision no. 0004/01/1961C dated January 17, 1961.
(4) (a) Area of site in square metres/hectares (b) Gross floor area metres/feet (c) Gross roof area metres/feet	(4) (a) 950m^2 (b) 39071m^2 (c) N/A
(5) Where applicable state the number of lots to be created.	(5) 0
(6) State the purpose for which the land and/or buildings are now used, and if used for more than one purpose, give details.	(6) Other NA
(7) (a) State whether the proposed development involves the use or construction of a vehicle access onto a road other than a Class IV road.	(7) (a) NO
(b) State whether the development is on the coastline.	(b) YES
(8) Does the land form part of a sub-division plan approved or permitted by -	(8)
(a) The General Board of Health; or	(a) N/A
(b) The Chief Town Planner;	(b) YES
If so, state the reference number and date of approval or permission.	subdivision no. 0004/01/1961C dated January 17, 1961. (January 17, 1961)
(9) Where applicable state whether the development has been served with an enforcement notice?	(9) NO
If so, state the enforcement notice number and date	N/A
(10) If the land is to be used wholly or partly for industrial or commercial use state -	(10)
(i) the nature of the proposed industry or business, including, if for industrial use, a brief description of the type of processes to be carried on:	(i) N/A

(10)	(ii)	if for industrial use -	(10)	(ii)	
		(a) the amount and the means of disposal of any SOLID, LIQUID, or GASEOUS trade refuse or trade effluents.			(a) N/A
		(b) estimated water requirements in gallons per day.			(b) N/A
		(c) estimated electricity requirements in Kilowatts.			(c) N/A
		(d) estimated number of persons to be employed			(d) N/A
	(iii)	if for industrial use -		(iii)	
		(a) Does the proposal involve use or storage of any hazardous material.			(a) NO
		(b) If yes, state materials and approximate quantities			(b) N/A
(11)	Where appropriate state -		(11)		
	(i)	Source of water supply -		(i)	
		(a) existing.			(a) Barbados Water Authority
		(b) proposed.			(b) Barbados Water Authority
	(ii)	Means of waster water and sewage disposal -		(ii)	
		(a) existing.			(a) NONE
		(b) proposed.			(b) NONE
(12)	Where appropriate state building materials -		(12)		
	(i)	Walls.		(i)	N/a
	(ii)	Roof Covering.		(ii)	N/a
	(iii)	Roof Supports.		(iii)	N/a
(13)	The amount of floor space involved		(13)		
	(a)	the amount of retail floor space.		(a)	N/A
	(b)	the amount of office floor space		(b)	N/A
	(c)	the amount of institutional floor space.		(c)	N/A
	(d)	the amount of warehouse floor space.		(d)	N/A
	(e)	the amount of industrial floor space.		(e)	N/A
	(f)	the amount of floor space common to more than one use (e.g, service area).		(f)	N/A
(14)	(a)	Where applicable state the number of storeys/floors to be created.	(14)	(a)	N/A
	(b)	State the height of the proposed building(s) from the lowest point of the building(s).		(b)	N/A
(15)	(i)	For apartments/hotels or town houses, state the number of units proposed.	(15)	(i)	0
	(ii)	For hotels and guest houses, state the number of bedrooms proposed.		(ii)	N/A
(16)	For places of public assembly, state the maximum number seating capacity.		(16)	N/A	