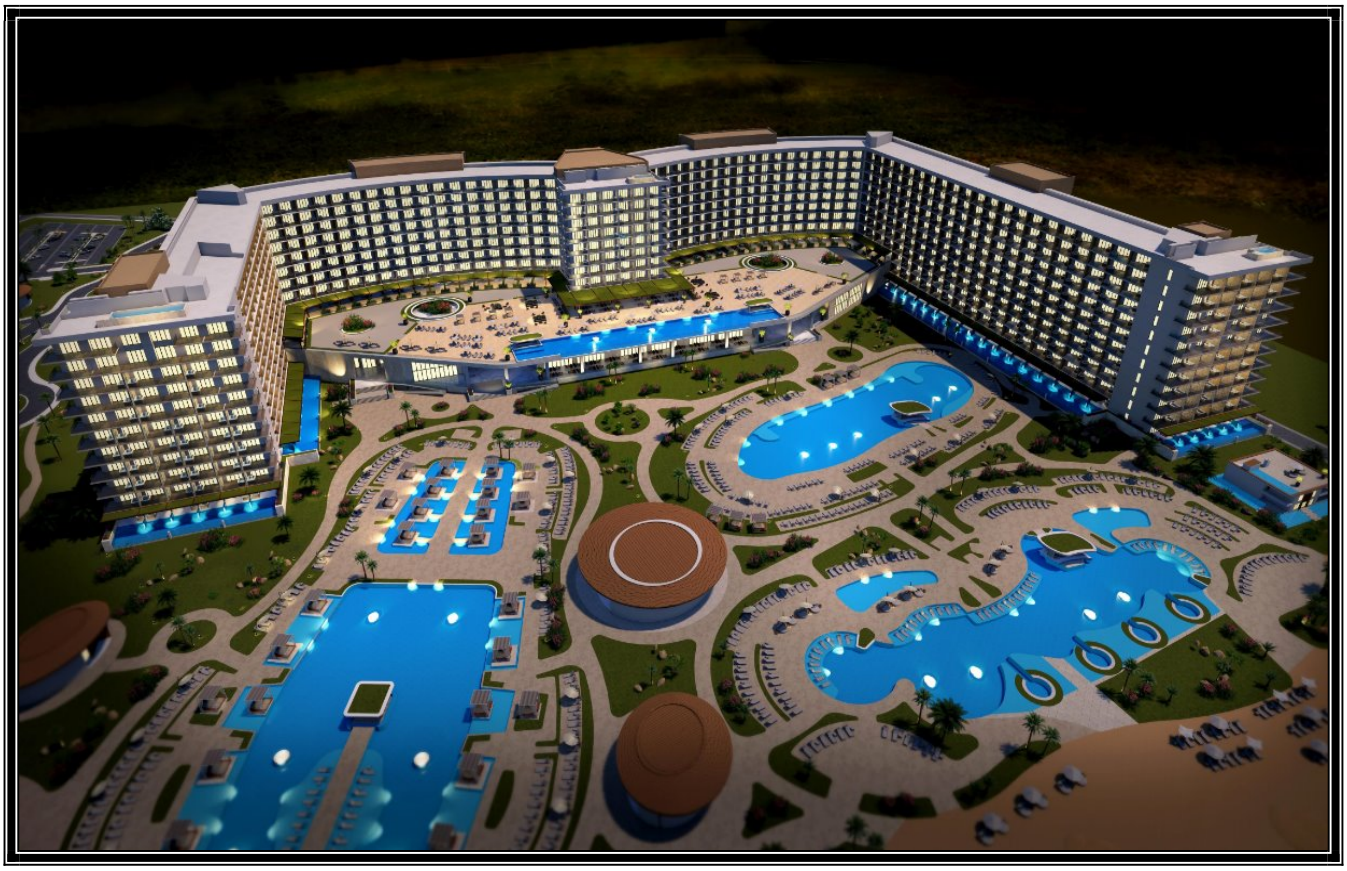
ENVIRONMENTAL IMPACT STATEMENT (EIS)
MOON PALACE RESORT DEVELOPMENT
PR: 18748 - 60604/20, 254, 255, 497 & 498 AND 60900/269
GRACE BAY BEACH, LEEWARD
PROVIDENCIALES, TURKS AND CAICOS



THE MOON PALACE COMPANY LIMITED

OCTOBER 2026

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List of Acronyms

AGRRA	Atlantic and Gulf Rapid Reef Assessment
AR6	IPCC Sixth Assessment Report
BCI	Business/Commercial/Industry
CEC	Certificate of Environmental Clearance
CEDA	Caribbean Environmental Design Associates
CITES	Convention on International Trade of Endangered Species
CVI	Coastal Vulnerability Index
DDP	Detailed Development Permission
DECR	Department of Environmental and Coastal Resources
DHI	Danish Hydraulic Institute
DoP	Department of Planning
DSAS	Digital Shoreline Analysis System
EBA	Ecosystem-Based Approach
EHD	Environmental Health Department
EIA	Environmental Impact Assessment
EM	Environmental Monitoring
EMP	Environmental Management Plan
ENGOS	Environmental NGOs
EPA	Environmental Protection Agency
ESA	Environmental Sensitive Area
GDP	Gross Domestic Product
GPS	Global Positioning System
GIS	Geographic Information Systems
GSLR	Global Sea Level Rise
ICZM	Integrated Coastal Zone Management
IMA	Institute of Marine Affairs
IUCN	International Union for Conservation of Nature
LiDAR	Light Detection and Ranging

LPG	Liquefied Petroleum Gas
MCA	Multi-criteria Analysis
MSL	Mean Sea Level
NHC	National Hurricane Center
NEC	National Electrical Code
NOAA	National Oceanic and Atmospheric Administration (of the United States)
NPDP	National Physical Development Plan
NRCS	Nature Resources Conservation Services
ODP	Outline Development Permission
ODPM	Office of Disaster Preparedness and Management
PANP	Princess Alexandra National Park
PDP	Progressive Democratic Patriots
PWC	Provo Water Company
ROP	Reverse Osmosis Plant
SDB	Satellite-Derived Bathymetry
SIDA	Small Island Developing States
SLR	Sea Level Rise
SMP	Shoreline Management Plan
SWI	Smith Warner International Ltd.
SWOT	Strengths-Weaknesses-Opportunities-Threats
TCIG	Turks and Caicos Islands Government
UTM	Universal Transverse Mercator
UAV	Unmanned Aerial Vehicle

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SECTION I

Non-Technical Summary

1. Arising out of the Outline Development Permission (ODP) is the requirement for an environmental impact assessment (EIA) to be carried out on the proposed development and the report of findings (EIS) submitted.

2. The proposed Moon Palace development **is** unprecedented and will be the only project of the scale on Grace Bay Beach to date and is to be completed within a two-year period for opening 29th November 2029. The development is currently planned for Grace Bay Beach, an excellent location with sufficient acreage. Grace Bay Beach is consistently named one of the best beaches in the world.

3. The proposed development will feature two distinct, co-located luxury all-inclusive resorts situated on a 40-acre parcel in the Leeward area of Providenciales, namely: **Moon** Palace: A multi-generational, family-friendly coastal resort featuring approximately 792 keys, expansive oceanfront accommodations, family amenities, water parks, multi-cuisine gourmet dining options, and indoor entertainment facilities. **Le Blanc:** An adults-only luxury sanctuary comprising roughly 235 premium guest rooms, high-end spa infrastructure, specialized fine dining restaurants, and personalized butler service workflows.

4. Throughout the continuation of the planning and design phases of the proposed development, the effects of Climate Change and how it is reshaping the natural and built environments and how we create resilience will be the focus, and actions to mitigate the against the grave effects. The proponents are committed to adhering to the Climate Change Charter as a corporation citizen and building relationships with the relevant Government Agencies and other private sector agencies towards the same.

5. It is anticipated that the proposed development as a private sector component in line with the TCI Governments' overall strategy of development will perform the following, to bring about positive economic and social benefits:

    - Comprehensive stakeholder engagement.
    - The natural environment must be protected. Everything in the TCI is linked to the natural environment – Tourism, Construction, etc.
    - Investing in renewable energy wherever necessary is the preferred choice.
    - Continued development of linkages to the tourism/hotel industry.
    - Invest in staff housing.
    - Foster social cohesion and economic justice.
    - Focus on Sustainability.

6. The Moon Palace Resort is proposed is a major 1.2 billion luxury hotel resort development for world renowned Grace Bay beach at, Leeward, Providenciales in the Turks and Caicos Islands.

Hydrogeological

The Hydrogeological Assessment provides baseline evaluations of the physical environmental conditions relative to the components of the proposed project, namely the construction of a major hotel, restaurants, swimming pools and other support amenities.

Ecological Terrestrial

7. This biological baseline assessment considers potential effects of construction and operations using information provided at the time of completing this report. The biological assessment focuses on the areas of impact that can be reasonably affected by the development, including the coastal and dune habitats, terrestrial habitats, and marine habitats. It should be noted that there is no planned development for the marine environment.

8. The terrestrial ecosystem is predominantly characterized as a coastal dry broadleaf human-altered environment, with clear evidence of past anthropogenic disturbance, including a man-made roadway that traverses the site and extensive areas used for recreational and commercial activities. The nearshore marine environment consisted primarily of bare sand habitat with patches of hard bottom and sand bottom with macroalgae and rubble. Three (3) groynes were observed in the nearshore marine environment.

9. There were fifty (50) botanical species, eight (8) avian species, four (4) seabird species, twelve (12) other terrestrial fauna species, twenty-two (22) marine flora species, fourteen (14) coral species, and twenty-nine (29) fish species observed during the assessment. No sea turtles, marine or terrestrial mammals, fungi or amphibians observed during the assessment. Of the species observed, six (6) botanical species, eight (8) avian species, four (4) seabird species, one (1) other terrestrial fauna species, no marine flora species, ten (10) coral species, and twenty-seven (27) fish species observed on the Convention on International Trade of Endangered Species (CITIES) list and/or the International Union for Conservation of Nature (IUCN) Red List.

10. No cave systems were observed. Also, no sea turtle nesting was observed and it's unlikely that the beach in front of The Project site is used for nesting.

11. Potential impacts on the biological environment include vegetation removal for the upland and dune ecosystems (direct footprint of works), noise pollution, construction fires, light pollution during operations, waste accumulation during the construction and operations, displacement of wildlife during construction, disturbance of wildlife during operations, and the decrease in water quality due potential storm water runoff, fuel and oil spills (groundwater only) and increase sedimentation due to an increase recreational activities in the nearshore environment.

12. Key mitigation measures will include:
    - Landscape restoration includes the use of native species.
    - Removal and management of invasive species according to the Invasive Species Management Plan.
    - Use of designated access points to limit trampling of retained dune vegetation.
    - Implementation of erosion, sedimentation and storm water controls.
    - Implementing lighting controls and limit works to alight as much as possible.
    - Management of noise during construction activities.

- Prohibit, harassing, feeding, collection and unnecessary handling of wildlife during the construction and operational phase. Wildlife management protocols should be always followed.

- Proper waste management practices will be complied with according to the Waste Management Plan.

- All fuel and oil spills will be addressed according to the Fuel Spill Management Plan.
- Education of visitors and staff on responsible use of the coastal and marine environment.

- Complying will applicable legislation.

13. As The Project occurs in an area that is already human altered, already experiences recreational activity and characterized by similar high-rise developments in the surrounding area; The Project can be developed and operated without overall significant impact to the biological environment, provided that recommended mitigation and monitoring activities are implemented. Most potential impacts are localized and minimal. Monitoring of the biotic environment should ensure all mitigation measures are implemented and protection of the biological environment.

Marine Processes

14. Marine water quality measurements were with range of coastal ecosystem except for slightly elevated salinity. However, slightly elevated salinity is plausible for marine waters of the Caribbean under localized conditions. Total coliform was also elevated; however, this reading alone is not a definitive indicator of faecal contamination or influx of sewage.

Coastal Processes

15. The proposed Palace Resorts development is located along a coastal by the offshore coral reef during normal conditions, but it remains exposed to structure-modified section of coastline in Providenciales. The beach is generally sheltered erosion, energetic winter swells, hurricanes, storm surge and long-term sea-level rise. Historical analysis shows that much of the northern and central shoreline moved landward between 2018 and 2026.

16. Computer models were used to assess waves, currents, sand movement, wave runup and flooding under normal, swell and hurricane conditions. Results indicate that the reef reduces wave energy during normal conditions, but severe events can still cause beach erosion and coastal flooding. Impact modelling found that the proposed land-based development would not significantly change existing coastal processes.
17. No construction is proposed on the beach, seabed or within the marine environment, and a 100ft buffer from the High-Water Mark will be maintained. The development is therefore not expected to significantly change waves, currents, sediment movement or nearby marine habitats. Potential impacts would mainly arise indirectly from runoff, pollution, litter, construction debris, disturbance of **dune vegetation and increased beach use.**

Utilities, Solid Waste, Liquid Waste, Water Supply and Electrical Infrastructure

18 The proposed Moon Palace and Le Grande project is a tourism development proposal that is projected to provide an invaluable boost to the tourism product offering and room inventory in the Turks and Caicos Islands. The project, like all other developments will draw heavily on existing utility, waste and waste management systems currently existing on the island of Providenciales. The utility systems and waste-management infrastructure required to support the proposed hotel development on Providenciales was assessed as a part of the assessment process for the development process.

18. Based on this assessment of the proposed demand for utilities and other services, the systems outlined within the treatise are designed to ensure compliance with national regulations and international best practices, minimize environmental impacts, and support long-term sustainable operation of the Moon Palace and Le Grande development Hotel project.

Solid Waste Management

19. Providenciales relies on a single municipal landfill for disposal of solid waste. There is limited recycling capacity. This is limited but expanding, with selective acceptance of cardboard, metals, and glass. Providenciales has no centralized composting facility.
20. Using available data from regional and local waste generation rates, the proposed hotel is expected to generate several tonnes of solid waste daily. This generated waste includes waste from guest room refuse (paper, plastics, general waste), food waste from kitchens and restaurants, general waste and packaging materials

(cardboard, glass, metals), landscaping debris, occasional bulk waste from maintenance and refurbishment

21. The proposed hotel project will manage waste generated during the operational phase by implementing a structured waste-segregation program that will achieve the three R's of waste management (Reduce, Reuse and Recycle). It is proposed that Recyclables will be separated at source where feasible and reused to minimize the amount of waste entering the waste stream. Organic waste will be wholly minimized through efficient kitchen management practices, that minimize food wastage. General waste will be stored in properly secured and ventilated waste-storage rooms or other suitable storage bins designed to prevent pests and odours. Finally, daily internal collection using approved and satisfactory waste receptacles or containers using designated service corridors.

22. All waste will be transported by licensed haulers to the Providenciales Landfill. Bulk waste when generated will be removed under special arrangements. Waste volumes and disposal frequency will be documented and reported as required.

23. The assessment considered the potential impacts of not properly managing waste from this and any development. The possible potential impacts include odour, pests, and increased landfill pressure. The proposal considered mitigation measures that include pest-control systems in waste storage areas of the development, impermeable flooring in waste storage area and wash-down facilities, staff training in waste segregation and safe handling, regular monitoring and reporting to Environmental Health Department.

Liquid Waste (Wastewater) Management

24 All developments must treat wastewater on-site using approved treatment technologies. The Moon Palace and Le Grande development will incorporate appropriate and suitable treatment technologies to ensure that waste generated during the construction and operation of the resort is treated to national and international wastewater treatment standards.

25. It is anticipated that during construction and operation Wastewater will originate from several sources. These include guest bathrooms and staff facilities, Kitchens and other food-service areas, hotel laundry operations, swimming pool backwash and general cleaning

On-Site Wastewater Treatment Plant (WWTP)

26. The hotel will design and construct a dedicated Wastewater Treatment Plant designed for peak flows associated with all hotel rooms. The system will include inter alia Primary, secondary, and tertiary treatment processes, grease traps on all kitchen lines, sludge drying beds and periodic removal by licensed contractors and effluent quality monitoring to meet any stipulated standards for effluent treatment and discharge of both Department of Environmental Health (DEH) and Department of Environment and Coastal Resources (DECR).

27 The proposed Moon Palace and Le Grande has committed to reuse of volumes of the effluent generated by the operation to supplement or reduce the reliance on the potable water supply. Treated effluent will be reused for irrigation of landscaped areas and dust control during maintenance activities This reuse of effluent will reduce potable water demand and will support sustainable operations.

28. The assessment can advise that possible mitigation measures include the continuous monitoring of effluent quality, the development of Emergency or contingency plans and containment systems, the development of buffer zones between wastewater treatment plant infrastructure and any coastal or environmentally areas, and regular maintenance and inspection schedules

Potable Water Supply

29 Providenciales, as with the wider Turks and Caicos Islands, has no natural freshwater sources, such as lakes or rivers. Given this reality, potable water is mainly produced through reverse osmosis (RO) desalination by the water utility Provo Water Company (PWC), private reverse osmosis plants, rainwater catchment systems at private residences.

30. It is proposed that water consumed by the operation of the development will be supplied through the main distribution by Provo Water Supply and supplemented by onsite backup storage capability and reverse osmosis (RO) desalination plant.

31. A determination of potential impacts includes brine discharge and energy consumption to produce potable water for use as back up supply. As necessary, mitigation measures may include the controlled discharge of brine designed to meet Department of Environmental and Coastal Resources marine and environmental protection standards, the use of energy-efficient RO membranes and pumps and the inclusion or use of water-efficient fixtures and appliances throughout the development.

Electrical Infrastructure

32. Electricity on Providenciales is supplied by Pelican Energy through its island-wide distribution network, and as such is the intended source of electricity supply to the development. This may be supplemented by an emergency backup supply to ensure continuous operation of critical areas in the event of a power failure from the supplier.

33. It is anticipated that the electrical demand for the Moon Palace and Le Grande project will include, or will stem from included Heating, ventilation and air-conditioning (HVAC) systems, guest-room lighting, associated equipment and appliances, kitchens, laundry, and included mechanical equipment, pools, spas, and other recreational facilities, property lighting and landscape lighting, and administrative and back-of-house operations.

34. electricity will be provided by Pelican Energy through included electrical infrastructure that would include a dedicated high-voltage connection, on-site transformers or a small substation and metering and load-management systems. Backup and emergency power will be supplied by will be supplied by diesel generators sized to maintain essential services and automatic transfer switches for seamless transition.

35. As a part of the hotel's operation procedures, crucial energy efficiency measures will be incorporated into the development. The hotel will incorporate LED lighting and high-efficiency HVAC systems, building-management systems to optimize energy use and solar-ready infrastructure for future renewable-energy integration should this be the desire of the principals in future.

36. It is anticipated that there would not be large volumes of bulk fuel stored on the site during operation, but rather a sufficient supply to run backup generated during period of failure. The fuel (diesel) for beck up power generators will be stored will be stored in adequately sized, double-walled tanks with secondary containment as may be necessary. There will be a comprehensive spill-prevention plan, with monitoring systems compliant with any Environmental Health Department stipulation or regulations that may be enforced.

37. The hotel's utility and waste-management systems will be or are specifically designed to:

- mitigate or minimize any environmental impacts of the development
- Protect any groundwater and coastal marine ecosystems
- Reduce potable water demand through effluent reuse and use of water saving technologies
- Lower energy consumption through use of energy efficient building design and technologies
- Ensure compliance with all Department of Environment and Coastal Resources, Environmental Health Department, Pelican Energy, and Provo Water Company standards and requirements.

Recommendations and conclusions

38. The site on which the building is proposed was previously cleared. Given the conversation, planning and design measures are stipulated in the environmental statement for implementation. The proposed development will enhance biodiversity on the site.

39. Apart from job creation during the construction and operational phases of development, there are further positive ripple effects resulting from the proposed development.

40. The benefits to be derived to the Turks and Caicos Islands from having the proposed development far outweigh the potential environmental impacts. There will not be any negative environmental impacts caused directly by the proposed development. Any unforeseen impacts from the proposed development will be minimal, mitigated and monitored. In conclusion, there are no substantial environmental impacts associated with the proposed development and proper justifications are given for it being allowed.

41. The Construction Waste Management Plan provides a comprehensive framework for managing all waste streams generated during the construction of the Moon Palace & Le Grand Hotel.

42. Through segregation, recycling, safe handling of hazardous materials, and strict monitoring, the project will minimize environmental impacts, reduce landfill burden, and comply fully with national regulations and best practices for sustainable construction in the Turks and Caicos Islands.

43. Overall, the Project presents an opportunity to balance economic development with environmental responsibility. When designed and operated in accordance with appropriate mitigation measures, the resort can contribute to national tourism development while supporting improved site management, protection of coastal resources, and the enhancement of landscaped areas using native species.

44. The Project therefore represents an opportunity to transform an already disturbed property into a well-managed resort environment that supports livelihoods and tourism growth while promoting long-term environmental stewardship.

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1.0 Introduction and Overview

This document comprises the Environmental Impact Statement (EIS) for the Moon Palace Resort Development on Gace Bay Beach, Providenciales, Turks and Caicos Islands.

Turks and Caicos Islands Government (TCIG) has signed a $1.2 billion development agreement with The Palace Company, representing the largest single private investment in the nation's history. The proposed development will feature two distinct, co-located luxury all-inclusive resorts situated on a 44.5-acres parcel in the Grace Bay Beach, Leeward area of Providenciales, namely:

Moon Palace Grand: A multi-generational, family-friendly coastal resort featuring approximately 792 keys, expansive oceanfront accommodations, family amenities, water parks, multi-cuisine gourmet dining options, and indoor entertainment facilities.

Le Blanc: An adults-only luxury sanctuary comprising roughly 235 premium guest rooms, high-end spa infrastructure, specialized fine dining restaurants, and personalized butler service workflows.

Whilst the proposed development will become a major anchor project for Providenciales and the wider Turks and Caicos Islands, generating hundreds of jobs during both its construction and operational phases, additional to its other positive economic impacts that are detailed in the statement, its placement along Providenciales' environmentally sensitive shoreline, Grace Bay Beach, necessitates a comprehensive analysis of physical, biological, and socio-economic variables. Grace Bay Beach, located on the northern coast of Providenciales, is widely considered the crown jewel of the Turks and Caicos Islands and ranks among the best beaches in the world. Where specific section of Grace Bay Beach where the proposed development is highly dynamic and prone to severe erosion and shoreline loss.

The purpose of the Environmental Impact Assessment (EIA) is to systematically identify, predict, and evaluate the potential environmental and socio-economic impacts

associated with the construction and operation of the proposed Moon Palace Grand/ Le Blanc Resort Development.

The identification of mitigation measures, actionable plans for the implementation of the mitigation measures, and monitoring to elevate their success have also been carried out and reported. Specifically, this EIA seeks to:

- Establish a baseline data for the 44.5-acres terrestrial, coastal, and marine areas, socio-economic and cultural/heritage aspects and for all affected areas of study.
- Identify potential impacts.
- Formulate an Environmental Management Plan (EMP) outlining specific mitigation strategies and continuous monitoring indicators to minimize the development's impact.

The relevant pieces of legislation and regulations have been detailed. The scope of this EIA covers all phases of the project including construction and operations.

1.1 The Study

The study, the proposed Moon Palace Resort is a major 1.2 billion tourism hotel development, hereafter refer to as the "Project", located on the world-famous Grace Bay beach within the Leeward development community in Providenciales, Turks and Caicos Islands. The study addresses the potential environmental, socio-economic and heritage cultural impacts of the proposed development on the receiving physical environment, adjacent communities and general the island of Providenciales.

The Project will comprise 909 hotel rooms (1,024 keys) and supporting amenities, including The Le Blanc Spa All Inclusive Resort (Adults Only) will be a twelve (12) story structure and The Family Oriented All Inclusive Moon Palace Resort will also be a 12-storey structure. Throughout the report the total number of rooms has been referenced as 1000 -rooms. The project also includes the necessary supporting infrastructure for the development including but not limited to desalination plant, wastewater system, underground electricity, and landscaping. Staff housing comprising fifteen 5-stories buildings also forms part of the project.

1.2 Aims and objectives of the assessment.

The primary aim of the Moon Palace Resort development EIA study is to evaluate the environmental, social and economic impact of building such as major development on the island. The study will establish a sustainable framework that balances physical development with the conservation of the island's natural landscape and resources. The study will focus on the following key areas:

- An assessment of the geological environment on which the proposed development is to be located and identify any perceived impacts to the hydrological environment.

- Analysis sediment transport – to evaluate how the proposed footprint would affect the natural sediment movement from northeast to southwest along Grace Bay beach.

- Preserve Endemic Species – identify and protect terrestrial and marine flora and fauna unique to the Leeward and Grace Bay coastal zones.

- Manage Solid Waste and Sewage – The study would recommend guidelines for addressing the large volume of waste to be generated by the proposed development, including greywater recycling and recycling of solid waste.

- Identify Economy Opportunities – Identify local employment generation opportunities for the Belonger population.

- Regulatory Compliance – Ensure that the proposed development conforms with local Physical Planning requirements, including the National Physical Development Plan, Physical Planning Ordinance and the Turks and Caicos Building Code.

- Design Climate Adaptation Systems – Ensure that the development conforms to the building line coastal setbacks and limit physical developments within the coastal zone areas.

. The document also defines the Environmental Impacts and Mitigation needed to implement work procedures. Such procedures will be developed and implemented during the execution of The Project with the specific objective of eliminating or

ensuring the minimization of environmental impacts. The overall purpose of this document is to:

- Record and document:
  - The vegetation types of The Project area;
  - The presence and abundance of marine, terrestrial and avian fauna in the proposed area of work;
  - The presence and abundance of invasive species in the proposed area of work;
  - Presence and abundance of protected species in the proposed area of work;
  - The benthic composition of the coastal ecosystem;
  - Coral health inclusive of Bleaching, Stony Coral Tissue Loss Disease (SCTLD), and other diseases;
  - Sea turtle nesting assessment.
- Document environmental impacts and implement appropriate protection measures.
- Outline a monitoring program for The Project.
- Provide a reference to applicable legislative requirements.

1.3 Organization of the EIS Report

This Environmental Impact Statement (EIS) report is organized in a manner that is consistent with the Terms of Reference (TOR) issued by the Department of the Department of Planning (DoP) in the Ministry of Physical Planning and Infrastructure Development in the Turks and Caicos Islands Government on December 10, 2025.

Section one provides an introduction and overview of the study, including the aims and objectives of the assessment, an overview of areas/topics to be addressed, an analysis of the methods used to assess the receiving environment and a brief description of the project.

Section two gives a detailed account of baseline studies conducted, including an historical overview of the site and existing development in the surrounding area and provides a detailed assessment of the terrestrial, marine, and physical environments. This section also details various modelling scenarios that detail current wave conditions and how the project would respond.

Section three reviews the existing and appropriate legislative and regulatory framework under which the proposed project will be constructed and operated. It goes on to discuss how project design, construction and operation are affected by such ordinances and regulations.

Section four gives a detailed description of the various components of the proposed development, including design, construction, and operational infrastructural components. Here construction activities and programs, including a detailed description and timeframes for all construction and related activities are outlined. Socio-economic parameters, e.g. demographics, employment safety and security concerns etc.) are also discussed in this section. Safety and security measures during the construction and operational phases of the development are evaluated.

Impact assessment is the focus of Section five. Here potential environmental impacts associated with the proposed development are identified using computer modelling and other methodologies.

Mitigation and Monitoring measures are detailed in Section Six, which includes proposed actions and schedules to mitigate against identified environmental impacts.

Recommendations and conclusions can be found in section seven.

A Statement of the understanding of the Environmental Charter (2010 and the Climate Change Charter (2022) and the proponent's declaration of intent to be guided by the recommendations of the EIA consultants are listed in section eight.

Appendices are included in section nine. These include the Terms of Reference (ToR), Resumes detailing the qualifications and experiences of the EIA Team, reference floral faunal lists and Government permits.

1.4 Names and contact information of the developers and EIA Team

The names and contact information of the EIA team are listed in table 1.0 below.

Table 1 – EIA Team and their contact information

Team Member	Study Area	Nationality	Contact Information	
			Phone	Email
Janeen Bullard JSS Consulting	Terrestrial and Marine Ecology	Bahamian	242-393-3235	Janeen @JSS Consultants.com

Christina McPhee		Bahamian	242-393-3235	christinam@jsconsultants.com
Philip Warner Smith Warner International Ltd	Coastal Processes	Jamaican	1876-9788-8950	philip@smithwarner.com
Clyde Robinson Paradise Solutions	Socio-economic and Cultural Heritage	TCI	649-331-3420	Paradise.solutions.tci@gmail.com
Ezekiel Hall Environmental ALL	Geology	TCI	649-246-8263	Hallenvironment1@gmail.com
Joaquin Vargas – TrafTech Engineering Inc.	Traffic Planning	Florida, US	954-582-0988	Joaquin@traftech.biz
Lorne Robinson	Solid Waste Management	TCI	649-231-0371	oswaldwilliams51@gmail.com
Clyde Robinson – Paradise Solutions	Socio-economic & Cultural Heritage	TCI	649-231-0371	Paradise.solutions.tci@gmail.com
Oswald R. Williams Caribbean Environmental Design Associates	Coordinator/ Planning & Statutory	TCI	649-231-0371	envirorobin@gmail.com

1.5 Brief description of the proposed development

The proposed Moon Palace resort development is a 1.2 billion landmark project by The Moon Palace Company to build two luxury 12-story resort towers and supporting amenities across a 44.5-acres site on Grace Bay beach in the Leeward area of Providenciales, Turks and Caicos Islands.

In a historical Agreement signed between Palace Company and the Government of the Turks and Caicos Islands, the planned resorts will include:

- The Moon Palace Grand – A family-friendly luxury resort featuring roughly 792 spacious oceanfront rooms and suites, gourmet dining options, a spa, and all-ages entertainment facilities.
- Le Banc – An upscale adults-only sanctuary planned with roughly 235 rooms, butler service, and fine dining facilities.

1.5.1 The Developers

The key founders and leaders (proponents) of The Moon Palace Company (the parent company of the Moon Palace Resort are members of the Chapur family, led by founder Jose Chapur Zahoul and CEO Gibran Chapur.

1.5.2 Project Location

The proposed Moon Palace Grand and Le Blanc luxury resorts by The Palace Company are planned for a 44.5-acres site situated on the far eastern edge of Grace Bay Beach near the Leeward residential community on Providenciales, Turks and Caicos Islands.

The site sits on the border of the pristine Leeward residential community and borders coastal residential properties and undeveloped or low-density stretches rather than sitting tight against other major commercial hotel resort like Seven Stars or The Ritz Carlton which are located further west in the central Grace Bay entertainment district.

The Kempinski, Grace Bay is an 11-acre resort development under construction, comprising 119 luxury residences and 4 beachfront villas on Grace Bay Beach is in the vicinity of the Moon Palace Resort. Other neighbouring developments include Sunset Beach Villa, Coral House Villa, Legacy Palms Villa and Caribbean Dimond Residences. The Leeward Palms, a Belonger residential community is also located nearby. The location of the property relative to the world-famous Grace Bay beach and the Leeward Residential Community is shown in Figure 1.0 below.

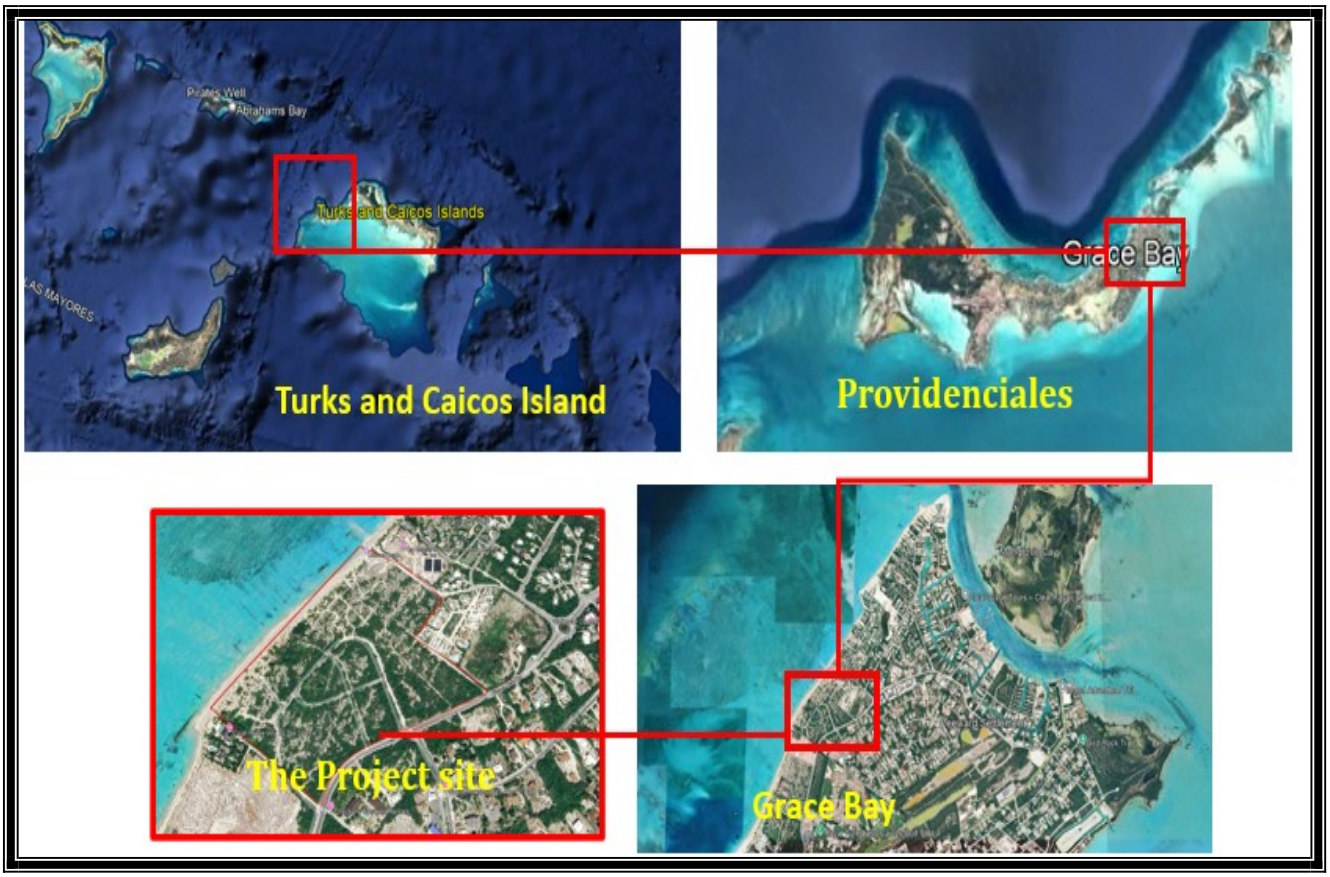


Figure 1 – Project Location Relative to the Turks and Caicos Islands



Figure 2 – Project Location Relative to Grace Bay and Leeward

1.5.3 Project Concept and Description

The design concept for the proposed Moon Palace resorts on the 44.5-acres site on Grace Bay Beach, Leeward, Providenciales will focus on a dual-resort layout that balances upscale modern hospitality with regional environmental protection. Moon Palace Grand – Turks and Caicos would be designed as a 792 rooms family-friendly, orientated entertainment-forward and all-ages luxury destination. Accommodation will feature large, spacious oceanfront rooms and suites tailored for families. Amenities include multiple gourmet dining venues, state-of-the-art wellness spa, and dedicated recreation areas for children and teenagers.

The Le Blanc – Turks and Caicos (Adults-Only) designed as a 12-story structure comprising roughly 235 rooms styled with a tranquil, high-end sanctuary design concept emphasizing elegance and quiet relaxation. Amenities for The Le Blanc will focus on fine-dining gastronomy and serene adult-centric spaces. Details of the design concept are shown in figures 3, 4 and 5.

The design concepts emphasize environmental protection, cultural preservation and sustainable building practices to safeguard the local coastline.

1.5.4 Development relationship with other developments in the area

The proposed Moon Palace Grand and Le Blanc resort complex will physically interface as a dormant transitional buffer zone that bridges the high-density commercial tourism corridor of Grace Bay with the low-density, gated residential community of Leeward. Situated at the easternmost edge of Grace Bay Beach this major high-rise development marks the physical endpoint of the continuous resort development along the Grace Bay Beach coastline.

The Grace Bay Beach Interface – The Moon Palace resort property sits on one of the remaining vacant beachfront parcels extending east from the existing hotel strip. This development extends the commercial footprint of the tourism boundary eastward right up against the Leeward residential community.

Physically, the Moon Palace site sits directly between the Coral House and the Leeward residential community gate entrance. The main relationship between the proposed Moon Palace resort complex would be a drastic contrast in the development's density and architectural scale. The Leeward community is characterized by low-density low-rise single-family homes and luxury rental villas as opposed to the projects multi-story complex.

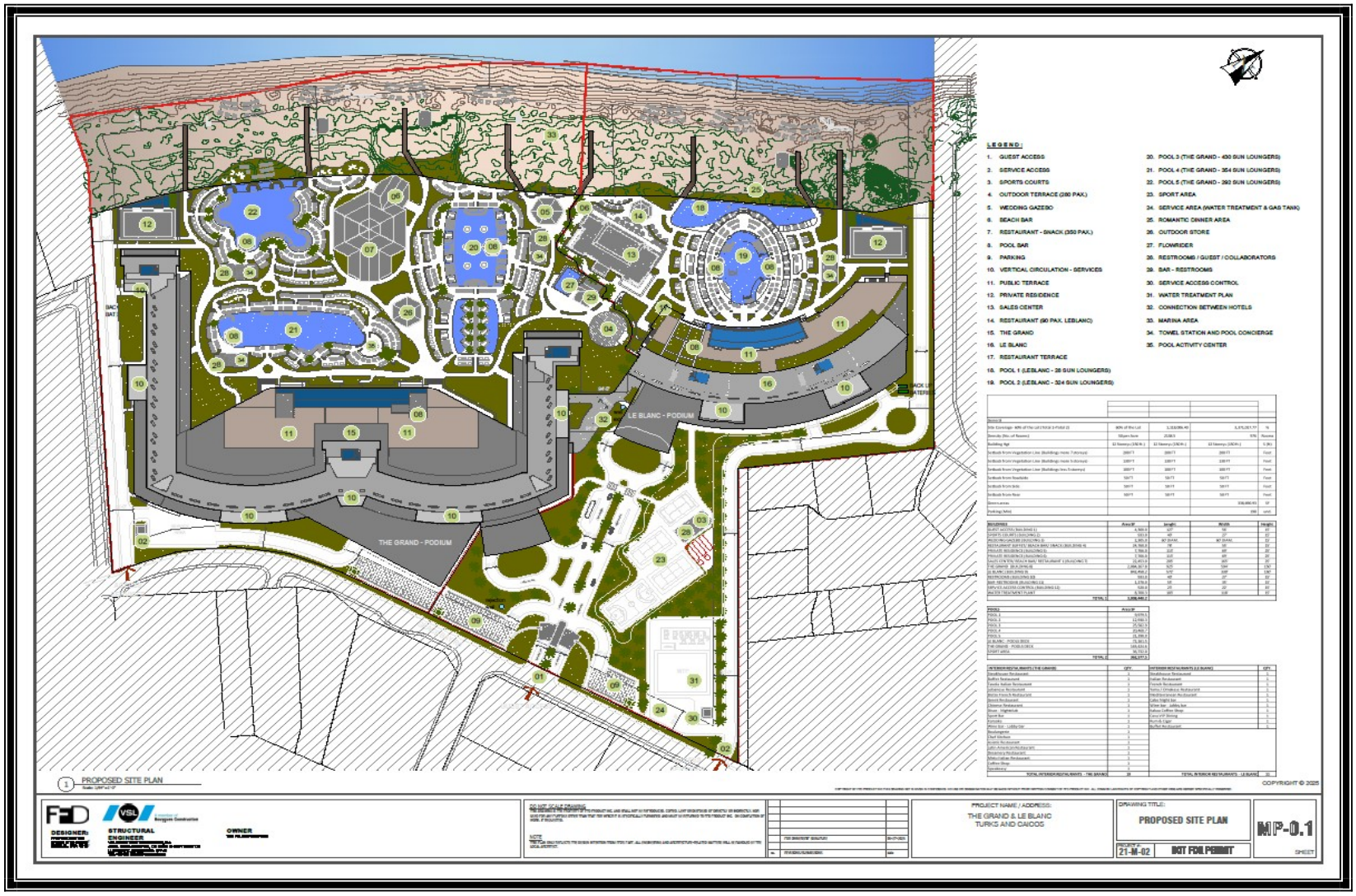


Figure 3. Site Layout plan of the proposed development

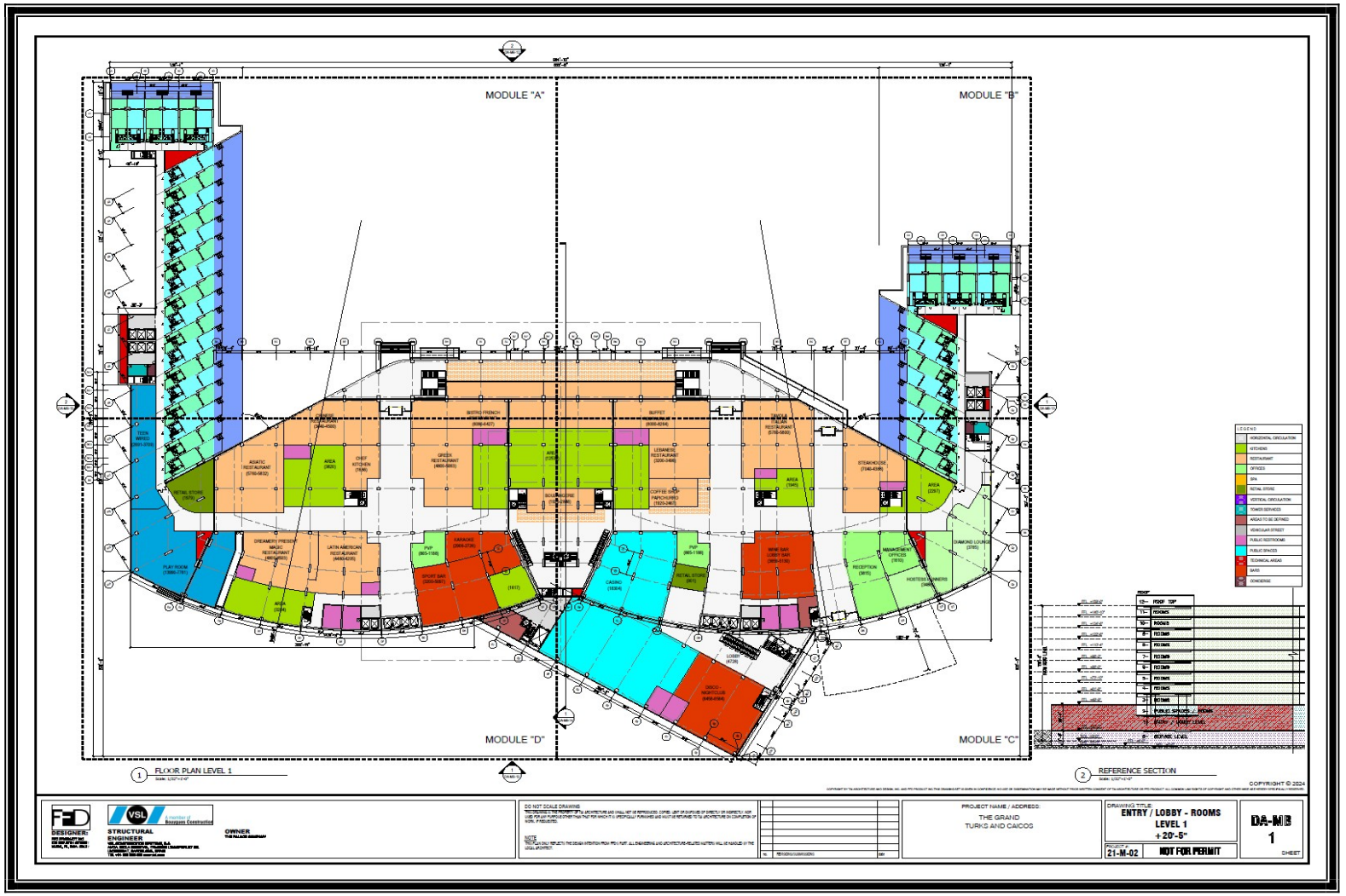


Figure 4 – Floor plan of the proposed development

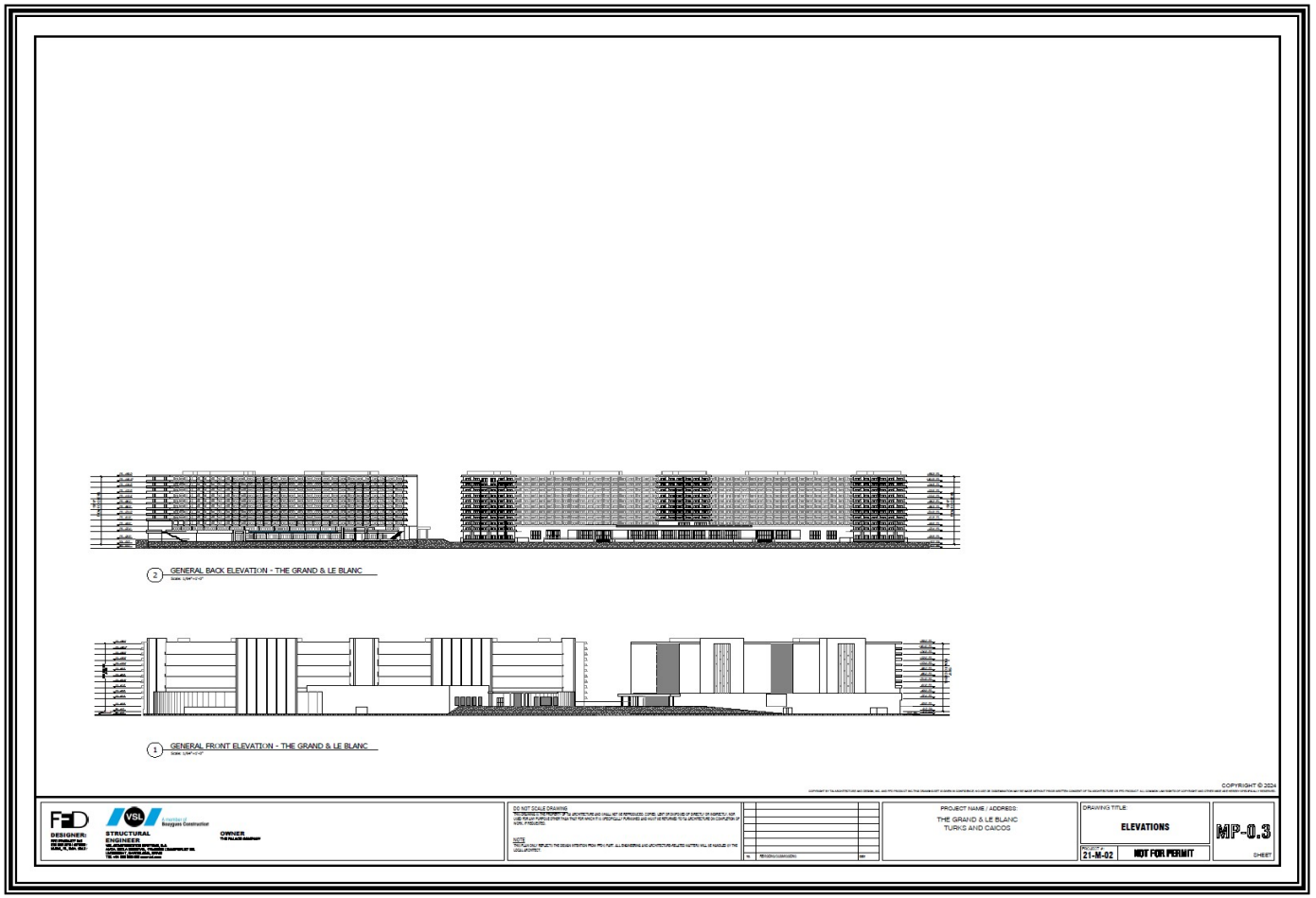


Figure 5 – Elevation plan of the proposed development (The Grand & Le Blanc)

The Proposed Moon Palace resort complex would alter traffic patterns in the area, particularly along the Grace Bay Road that provides access into the Leeward residential communities.

The coastal and environmental footprint of the proposed development on the area that was once perceived as a pristine, uninterrupted stretch of shoreline changes the physical coastal dynamics. The public beach access, the beach and coastal views would now have to be shared with additional visitors and beach goers.

There is no direct marine work proposed for this project or forms part of the Terms of Reference or issues of impacts to be addressed by this study.

1.6 Overview of the area/topics to be addressed.

An Environmental Impact Assessment (EIA) scoping exercise defines the extended topics and studies boundaries needed to capture a project's full potential footprint beyond standard biophysical review.

The general areas to be addressed in this study are those outlined in the detailed Terms of Reference (ToR) and include the hydrogeological, terrestrial, coastal and marine environments, the socio-economic and cultural heritage settings and the legal context in which the proposed development will occur.

When examining the hydrogeological context of the proposed development four basic parameters have been considered in determining the key hydrogeological issues including surface water and ground water, water quality, and environmental air quality.

Surface Water and Groundwater

No surface water bodies were observed within and surrounding the development site. The development parcel is situated within a coastal zone and immediately adjacent to the Princess Alexandra National Park. The Pleistocene Sandy formation is highly conducive to the formation of a classical Ghyben-Hertzberg groundwater regime where fresh groundwater floats above brackish water that is underlain by saltwater.

Water Quality

The occurrence of potential fresh groundwater lens exists below the land surface and is susceptible to groundwater pollution during the construction and post construction phases of the project. Potential point sources of pollution include nutrient loading, sewerage disposal, and over abstraction of fresh groundwater that leads to saltwater encroachment.

Other key areas from the scoping exercise include the cumulative effects, climate change integration and ecosystem services.

This Environmental Baseline Assessment details the existing conditions of the proposed site and surrounding area, the associated impacts and mitigation plan for proposed works associated with The Project and monitoring program for environmental impacts. Table 2 Below gives an overview of the scope of work for the marine and terrestrial components of the study and the name of people involved.

Table 2 – Marine and Terrestrial Baseline Assessment Scope of works

Topic	Detail	Person Contacted
Baseline Studies	1. Marine Benthic Assessment – A quantitative description of the marine benthic to be directly impacted by works (This included the nearshore environment 0-100m from the shoreline) and the marine flora and fauna species observed. A qualitative description of the marine benthic habitats that will be indirectly impacted by marine works (this included the offshore (100m -500m from the shoreline). 2. Coastal Species List 3. Commercially Important, Threatened and Endangered Species List 4. Turtle Nesting Survey 5. Water Quality Analysis	JSS Consulting
Baseline Studies	1. Terrestrial Assessment – Description and quantification of habitats and ecosystems present (including documentation of historically disturbed site). 2. Botanical Species List includes invasive and protected species.	

Topic	Detail	Person Contacted
	3. Avian Assessment – List, range, and conservation status of avian species observed (inclusive of sea birds) 4. Fauna and Flora species list. 5. Commercially Important, Threatened and Endangered Species List	
Project Description and alternatives	1. Project Description 2. Project justification, 3. Marine and Costal Traffic Flow Safety 4. Landscaping	
Legislation and Regulation Context	1. Outline Legislation applicable to marine environment	
Project Impacts	1. Impacts on the Biotic environment 2. Impacts due to added lighting. 3. Impacts on endemic, near endemic, rare, threatened, or endangered species. 4. Impact on any species due to building height and architecture. 5. Impact on geological environment. 6. Impacts to the aesthetic and other built environment. 7. Potential impacts on sunlight patterns include shadow-casting due to building height, and description of annual changes to shadow cast.	
Mitigation and Monitoring Plan	1. Actions and schedules to mitigate against any environmental impact, 2. Proposed actions to mitigate against noise pollution. 3. Proposed actions to mitigate changes to natural light and shadow cycles. 4. Proposed actions to mitigate against environmental impacts of building height. 5. Building around, or rescue and removal of rare, threatened, and	

Topic	Detail	Person Contacted
	endangered species of plants where possible. 6. Landscaping/ replanting plan utilizing native species (list species). 7. Environmental Management Plan. 8. Financial resources for mitigation. 9. Environmental monitoring and financial requirements. 10. Public Consultation/social listening/monitoring	

1.7 Impact assessment methods/analysis

To determine the hydrogeology, terrestrial, coastal, and marine species that could be affected by the project, both a literature search and field surveys were completed, as described hereafter.

Existing features and conditions on the site were evaluated first to provide a baseline condition. Impacts were then assessed by comparing baseline conditions and proposed development parameters. Baseline and proposed conditions were simulated in a verified numerical model that simulates wave heights and water levels under certain events. The events included hurricanes, swell waves and average wave conditions. These events are generally described statistically, based on return period or exceedance probability. For each event listed the wave climate is compared by a side-by-side comparison of wave parameters during and after the implementation of coastal structures, which contrasts both magnitude and patterns.

Construction impacts are categorised based on their area of impact and duration. The likelihood of the impact is also incorporated to determine the significance of the impacts on the project.

1.7.1 Conducting literature search.

The literature search involved querying the databases the Government of the Turks and Caicos Islands used for information pertinent to the site, including lists of terrestrial and aquatic flora and fauna designated as Endangered, Threatened, and/or Endemic. It also

included querying protected species lists maintained by international conservation organizations to which the Turks and Caicos Islands are signatories, including the International Union for the Conservation of Nature (IUCN) and the Convention on International Trade of Endangered Species (CITES).

1.7.2 Field surveys

Direct, site-specific field studies to compile baseline information on hydrogeological environment were conducted 25th May 2026, 26th May 2026, 2nd June 2024, 3rd June 2026, 8th July 2026, 21 July 2024 and 22nd July 2024.

Hydrogeology

Six- (6) test pits situated within the project site were constructed using a Caterpillar 360 Excavator machine equipped with a 24" wide rock cutting bucket. The test pits were constructed at one-(1) foot intervals where samples of cutting samples were collected and examined. The total depth of investigation was approximately twelve-(12) feet below land surface. The test pits remained undisturbed for a period of five-(5) days to allow the groundwater in the test pits to equilibrate. After equilibration, groundwater occurring in the test pits were evaluated. Depth to the water surface was measured and recorded. Subsequently, depth versus salinity profiles were conducted in the test pit. Additional geophysical logging techniques including temperature, pH, odour, colour and lithological profiles were conducted. Data collected was used to assess the groundwater configuration, depth to water table and subsurface geology.

Sieve analysis was conducted on samples from individual test pits and grain size distribution curves were generated to get a feel for the characteristics of the earth materials to be used throughout the development. Additional sand samples were taken across the beach face.

Environmental Air Quality

Six criteria pollutants (USEPA) were measured over an eight-(8) hour time using the 'filtration method' and analyzed using a HACH DR/2100 Spectrophotometer. Particulate Matter $_{(10)}$ was assessed using a 'collection jar method' and analyzed using the 'Beam Method'. Air pollution contributes to a wide variety of adverse health effects. EPA has established national ambient air quality standards (NAAQS) for six of the most common air pollutants— carbon monoxide, lead, ground-level ozone, particulate matter, nitrogen dioxide, and sulfur dioxide—known as "criteria" air

pollutants (or simply "criteria pollutants"). The presence of these pollutants in ambient air is generally due to numerous diverse and widespread sources of emissions. The primary NAAQS are set to protect public health.

Ozone (Oppm)

Ground-level ozone forms through the reaction of pollutants emitted by industrial facilities, electric utilities, and motor vehicles; chemicals that are precursors to ozone formation can also be emitted by natural sources, particularly trees and other plants. Ground-level ozone can pose risks to human health, in contrast to the stratospheric ozone layer that protects the earth from harmful wavelengths of solar ultraviolet radiation. Short-term exposure to ground-level ozone can cause a variety of respiratory health effects, including inflammation of the lining of the lungs, reduced lung function, and respiratory symptoms such as cough, wheezing, chest pain, burning in the chest, and shortness of breath.

Particulate Matter (Oppm)

Particulate matter (PM) is a generic term for a broad class of chemically and physically diverse substances that exist as discrete particles (liquid droplets or solids) over a wide range of sizes. Particles originate from a variety of man-made stationary and mobile sources, as well as from natural sources such as forest fires. Particles may be emitted directly or may be formed in the atmosphere by transformations of gaseous emissions such as oxides of sulfur (SO_X), oxides of nitrogen (NO_X), and volatile organic compounds (VOCs).

Sulfur Dioxide (O ppm)

Fossil fuel combustion by electrical utilities and industry is the primary source of sulfur dioxide. People with asthma are especially susceptible to the effects of sulfur dioxide. Short-term exposures of asthmatic individuals to elevated levels of sulfur dioxide while exercising at a moderate level may result in breathing difficulties, accompanied by symptoms such as wheezing, chest tightness, or shortness of breath.

Nitrogen Dioxide (O ppm)

Nitric oxide (NO) and nitrogen dioxide (NO_2) are emitted by cars, trucks, buses, power plants, and non-road engines and equipment. Emitted NO is rapidly oxidized into NO_2 in the atmosphere. Exposure to nitrogen dioxide has been associated with a

variety of health effects, including respiratory symptoms, especially among asthmatic children, and respiratory-related emergency department visits and hospital admissions, particularly for children and older adults.

Lead (O ppm)

Historically, the major source of lead emissions into the air was combustion of lead gasoline in motor vehicles (such as cars and trucks). Following the elimination of lead gasoline by the mid-1990s, the remaining sources of lead air emissions have been industrial sources, including lead smelting and battery recycling operations, and piston-engine small aircraft that use lead aviation gasoline. Lead accumulates in bones, blood, and soft tissues of the body. Exposure to lead can affect development of the central nervous system in young children, resulting in neurodevelopmental effects such as lowered IQ and behavioral problems.

Carbon Monoxide (Oppm)

Gasoline-fueled vehicles and other on-road and non-road mobile sources are the primary sources of carbon monoxide (CO) in the United States. Exposure to carbon monoxide reduces the capacity of the blood to carry oxygen, thereby decreasing the supply of oxygen to tissues and organs such as the heart.

Hydrogeological Analysis

Qualitative analysis was conducted to describe the subsurface geology and determine the status of surface and groundwater quality. Quantitative analysis (thickness of freshwater lens) was employed to define and map the geometry of the freshwater lens. Exercises in Physical Geology, 5th edition, was used to identify lithological samples from the test pits and WHO standards for groundwater quality were used to ascertain water quality and define groundwater configuration.

Grain size distribution analysis was conducted on samples collected from the test pit to calculate the coefficient of uniformity (C_u) and coefficient of gradation (C_c) that are used to determine the classification of the earth materials as well graded or poorly graded and well sorted or poorly sorted.

Direct measurements of the salinity, temperature and pH were obtained from individual water samples collected using a discrete 'hand grab' sampler and measured using a 'handheld' YSI Pro DSS Multiparameter Digital Water Quality Meter. A soil penetrometer was used to collect field data

Botanical Assessment

On the 20th – 24th of July 2026, field studies for the botanical assessment were conducted on The Project site within the surveyed area below (see Figure 6). A four (4) person team consisting of JSS Consulting team members conducted terrestrial and marine assessments.

Vegetation types were mapped and verified by firstly using Google Earth software to map The Project and create a grid pattern using pre-established foot paths as a guide (see Figure 7). Once the grid was created field surveys conducted throughout each grid noting all flora species observed. Vegetation type taxonomy was based on Areces et al. (1999). Plant taxonomy was based on Correll and Correll (1982). Rare, threatened and endangered species were categorized using the Government of the Turks and Caicos Islands, Department of Environment and Coastal Resources (DECR), Schedule of Protected Flora and Fauna in the Turks and Caicos Islands and were noted when encountered. Botanical surveys were conducted during various hours of the day (see Table2 3).

Table 3: Botanical Survey Hours

Date	Start Time	End Time	Duration
July 19th	13:30pm	15:00pm	1.5 hours
July 20th	06:00am	08:30pm	2.5 hours
	12:00pm	14:00pm	2 hours
July 21st	06:00am	08:00am	2 hours
	15:00pm	17:00pm	2 hours
July 22nd	16:00pm	18:00pm	2 hours
		Total Survey Hours	**12hours**

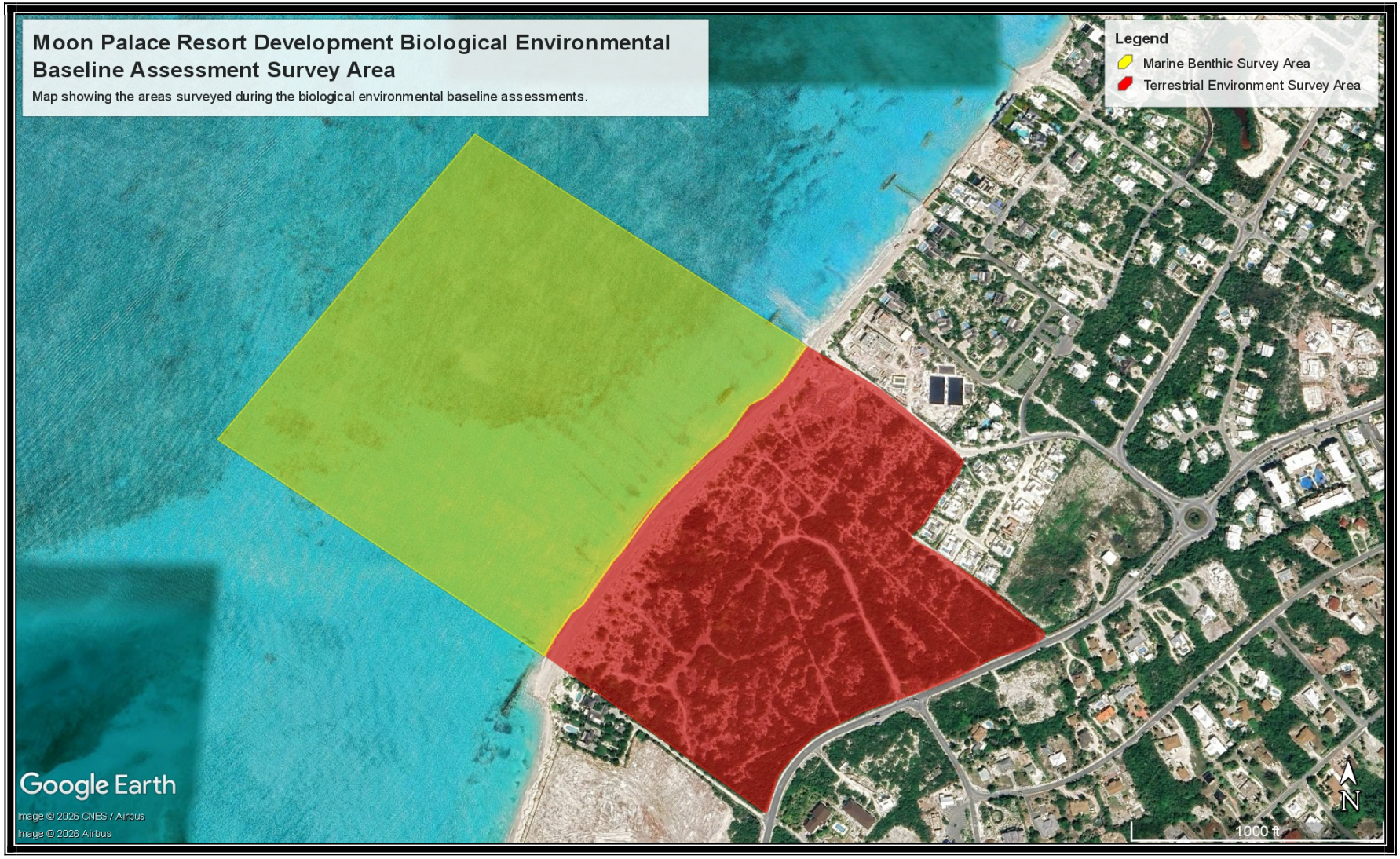


Figure 6 – Moon Palace Resort Biological Environmental Baseline Assessment Survey Area Map

Avian Survey

The fauna assessment comprised a total of thirteen hours (13hr) of field surveys conducted at various times throughout the day (see Table 4).

Table 4 – Times Avian Surveys were Conducted

Date	Start Time	End Time	Duration
19-July 2026	14:00 pm	15:00 pm	1 hour
20-July-2026	6::00 pm	08:30 am	2.5 hours
	12:00 pm	14:00 pm	2 hours
21-July-2026	06:00 pm	08:00 am	2 hours
	15:00 pm	17:00 pm	2 hours
	18:00 pm	19:30 pm	1.5 hours
22-July-2026	16:00 pm	18:00 pm	2 hours
Total Hours of Observation			13 hours

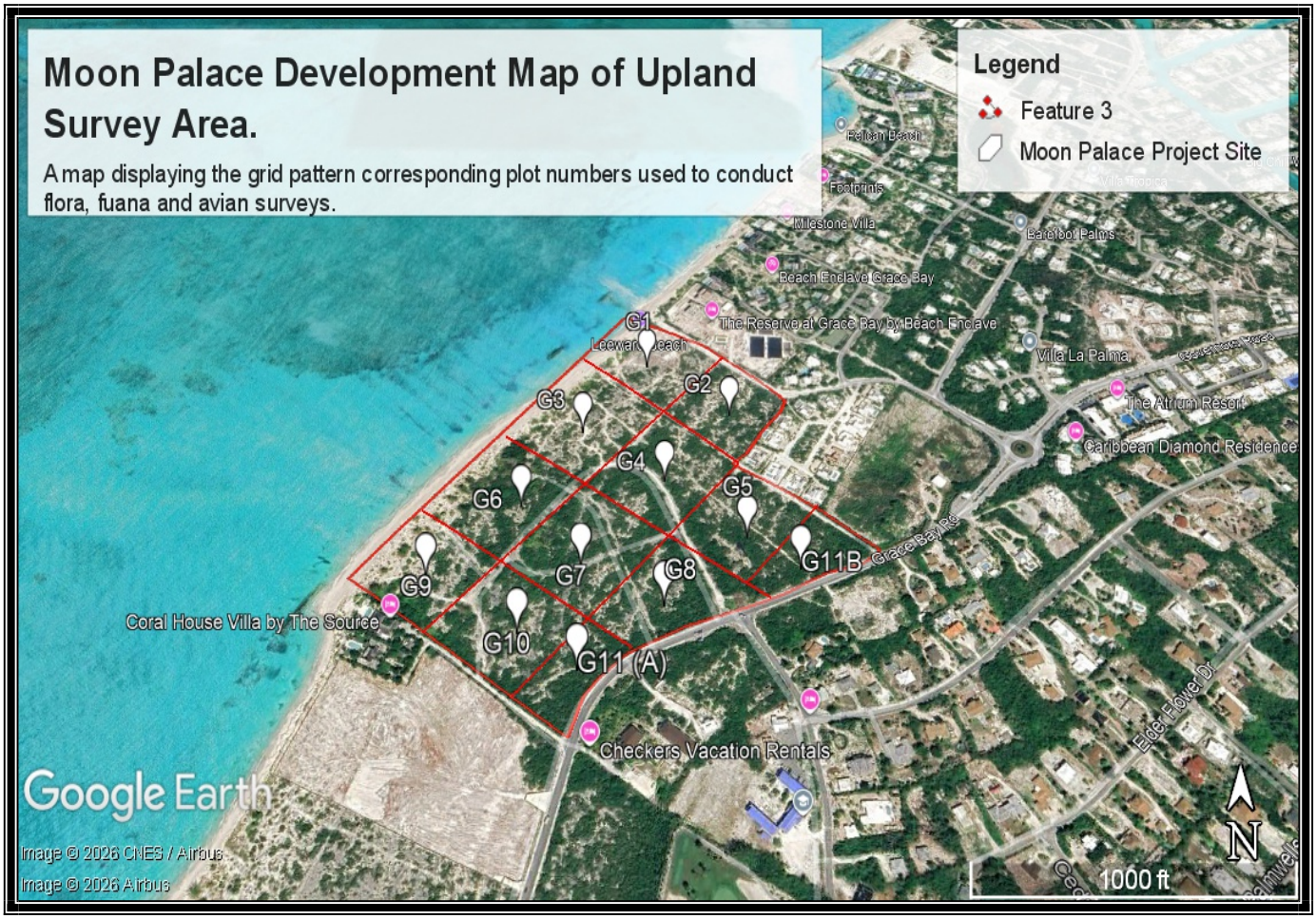


Figure 7 – Moon Palace Terrestrial Survey Area

Other Fauna Survey

The fauna was assessed and recorded by walking through the already established footpaths and roadways throughout the property site. Fauna taxonomy listed is based on Currie et al (2019).

Marine Benthic Assessment

Marine benthic assessments occurred over a two (2) day period. Table 5 below outlines the dates, time and duration that assessments occurred.

Table 5: Benthic Assessment Survey Time

Date	Start Time	End Time	Duration
20th July 2026	1:33 pm	4:05 pm	2 hours and 35 minutes
21st July 2026	9:30 am	1: 23 pm	3 hours and 57 minutes
Total			**6 hours 32 minutes**

The benthic surveyed area was divided into two (2) areas, nearshore and offshore. The nearshore environment consisted of the beach shoreline up to one hundred meters (100 m.) seawards and the offshore environment consisted of one hundred meters to five hundred meters (100 m. to 500 m.) seaward (see Figure 8). The nearshore environment has the potential to be directly impacted by development, whereas the offshore environment has the potential to be indirectly impacted by development.

Table 5 above shows the time the benthic survey was carried out.

A qualitative analysis was completed for the offshore environments, and a quantitative analysis was completed for nearshore environments.

Quantitative Analysis

The near-shore marine ecosystem was assessed using the transect method. The assessment was carried out using snorkel gear, and digital photographs of representative and notable conditions were taken using two (2) Olympus TG 6 cameras and one (1) Olympus TG 7 camera.

Four (4) transects were conducted parallel to the shore within the survey area (see Figure 9). Table 6 outlines the transect coordinates as well as the length of each transect. Transects were on average, twenty-five meters (25 m.) apart.

Table 6: Moon Palace Resort Development nearshore transect GPS Points and Measurements

Transect	Start		End		Measurement (m)
	Latitude	Longitude	Latitude	Longitude	
Transect 1	21°48'56.19"N	72° 9'45.04"W	21°48'42.86"N	72° 9'56.71"W	530
Transect 2	21°48'56.57"N	72° 9'45.73"W	21°48'43.25"N	72° 9'57.52"W	535
Transect 3	21°48'43.73"N	72° 9'58.41"W	21°48'56.98"N	72° 9'46.68"W	529
Transect 4	21°48'44.31"N	72° 9'59.28"W	21°48'57.73"N	72° 9'47.44"W	534

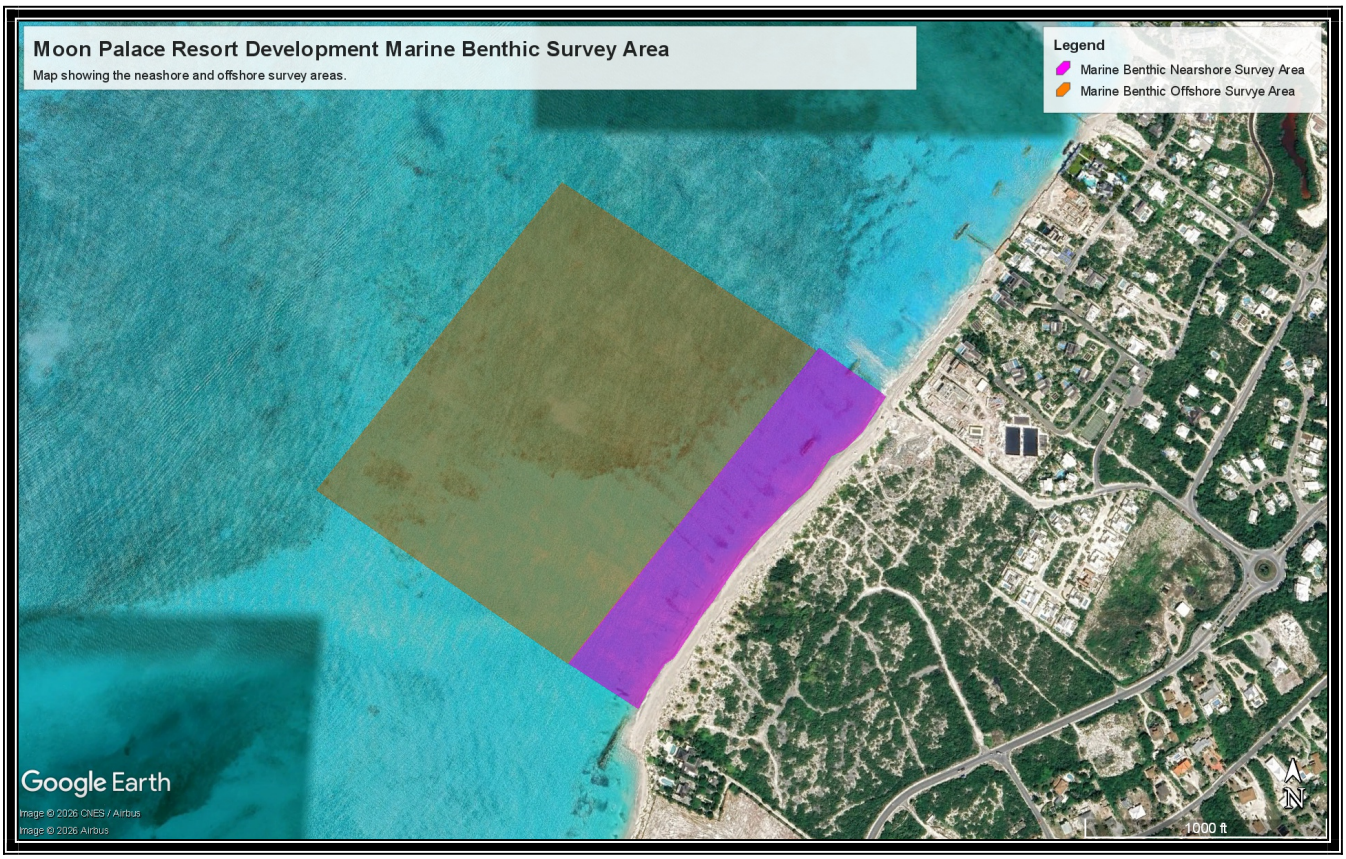


Figure 8 – Moon Palace Resort Development Marine Benthic Survey Map



Figure 9 – Moon Palace Resort Development Nearshore Marine Transect Map

Qualitative Analysis

Due to the high amount of boating traffic in the area, the offshore environment was assessed using both manta tows and spot checks. The assessment was carried out using snorkel gear, and digital photographs of representative and notable conditions were taken using two (2) Olympus TG 6 cameras and one (1) Olympus TG 7.

Manta tows were conducted in the offshore environment, one hundred to two hundred meters (100 – 200 m.) seaward and parallel to the shore along four (4) transect lines (see Figure 10). Table 7 outlines the transect coordinates as well as the length of each transect. Transects were on average, twenty-five meters (25 m.) apart.

Table 7: Moon Palace Resort Development Offshore Manta tow transects GPS Points and measurements

Transect	Start		End		Measurement (m)
	Latitude	Longitude	Latitude	Longitude	
Transect 5	21°48'44.60"N	72° 9'59.81"W	21°48'58.32"N	72° 9'48.31"W	536
Transect 6	21°48'58.68"N	72° 9'49.11"W	21°48'45.08"N	72°10'0.57"W	532
Transect 7	21°48'45.59"N	72°10'1.25"W	21°48'59.00"N	72° 9'49.82"W	527
Transect 8	21°48'59.45"N	72° 9'50.58"W	21°48'46.09"N	72°10'1.99"W	525

Spot checks were conducted at random within the offshore environment three hundred to five hundred meters (300 – 500 m.) seaward. Nine (9) spot checks were completed to note benthic habitat and provide a general description of the area (see Figure 10). GPS Coordinates were taken for each spot check using a Garmin Montana 680t.

Habitat Characterization and Mapping

The benthic habitat was identified by the substrate type (e.g., sand, silt, seagrass, hard bottom, etc.). The important areas, including those supporting ecologically and commercially significant species were identified and documented. The representative photographs were taken to characterize the conditions of the site.

Habitat types identified and recorded were reviewed and used to create a GIS habitat map. For the near-shore environment, aerial photos of them were taken using the DJI Mini Pro 4 Aerial Drone to provide up to date imagery of the assessed area. Due to the general size of the assessed area, multiple photos with permanent markers (beach contour, and groynes) were taken and overlaid onto satellite imagery in Google Earth Pro. Habitat types identified and recorded by divers were then marked (over the aerial

photos where applicable) to develop a GIS-based map and calculate the benthic habitat percent cover.

Species Diversity

During the assessment, a record of all flora and fauna species was taken, and a species list was created. Each was classified into a genus and species using Humann et. al. 2013 Reef Fish Identification, Humann et. al. 2013 Reef Coral Identification, and Humann et. al. 2013 Reef Creature Identification. Algae were identified to genus and species if possible or to the functional group (e.g., turf algae, fleshy macroalgae etc.). Data will be presented in a table with species scientific and common name, and abundance. Species abundance was recorded as Single (1), Few (2-10 individuals), Many (11-100 individuals), and Abundant (100+ individuals).

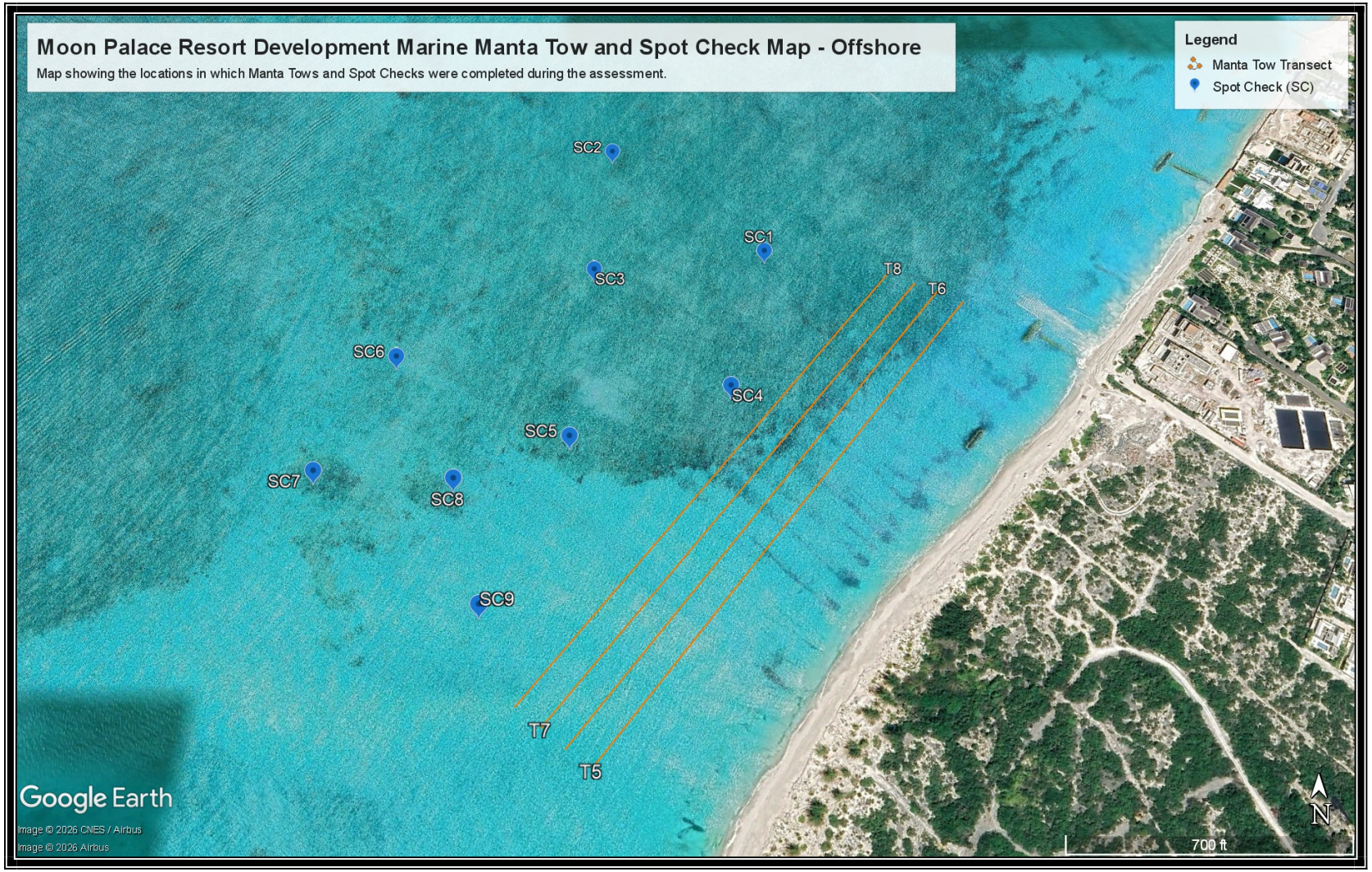


Figure 10 – Moon Palace Resort Development Manta Tow and Spot Check Map

Sea Turtle Nesting Survey

Sea turtle nesting assessments were conducted to determine if the beach in front of The Project site is being used as a nesting place for sea turtles. Assessments occurred over a three (3) day period. Table 8 below outlines the dates, time and duration that assessments occurred.

Table 8: Benthic assessment survey time

Date	Start Time	End Time	Duration
20th July 2026	6:03 am	7:30 am	1 hour and 27 minutes
21st July 2026	6:10 am	7:30 am	1 hour and 20 minutes
22nd July 2026	6:30 am	7:30 am	1 hour
		Total	**3 hours 47 minutes**

Team members walked along the beach looking for the presence of sea turtle tracks or sea turtle nest. Any findings were noted and presentative photos were taken.

Seabird Assessment

Field studies consist of a summer avian survey (April–August). The seabird assessment was assessed and recorded by walking along the sandy shore and by observation from a boat (see Table 9). Avifauna is based on Currie et al (2019). Observed species numbers were recorded in the abundance categories, Single (1), Few (2–10), and Many (11–100). Observations from all survey periods were compiled to produce the final abundance estimates. The conservation status of each species is based on the International Union for Conservation of Nature (IUCN) Red List.

Table 9. Times Avian surveys were conducted.

Date	Start Time	End Time	Duration
19-July 2026	14:00 pm	15:00 pm	1 hour
20-July-2026	06:00 am	08:30 am	2.5 hours
	12:00pm	14:00pm	2 hours
21-July-2026	06:00 am	08:00 am	2 hours
	10:00 am	1:00 pm	3 hours
	15:00 pm	17:00 pm	2 hours
	18:00	19:30	1.5 hours
		Total Hours of Observation	**14 hours**

Water Quality Analysis

Surface water quality sampling was conducted to document baseline water quality conditions of the surveyed area.

Physical Parameter Analysis

Physical water quality testing was conducted in both the nearshore and the offshore environment using the U-53G Multiparameter Water Quality Meter. Parameters measured included:

- Temperature
- Dissolved oxygen
- Total dissolved solid
- Salinity

pH within the surveyed area was measured using the Yieryi BLE-C600 Water Quality Pen. See Appendix O for a U-52 Multiparameter Water Quality Meter specifications.

Chemical Analysis

A chemical analysis was conducted by Adka Laboratories in Nassau, The Bahamas. Three (3) water samples were collected within the nearshore marine environment, stored in sterile containers in the field and shipped to Adka to be analyzed. Parameters tested included:

- Ammonia (as mgN/l),
- Nitrate/nitrite (as mnN/l),
- Nitrite (as mgN/l),
- Total dissolved phosphorus (mg/l),
- Total chlorophyll (µg/l),
- Pheophytin (µg/l),
- Active chlorophyll (µg/l) and
- Total Coliform
- Turbidity

See Appendix P for the Adka Laboratory Certificate of Accreditation and Certificate of Proficiency.

Depth Measurements

Depth measurements were taken at the same location as water quality samples using the Hawkeye Depth Thrax 1 HR depth finder.

A traffic count survey was conducted during the morning and afternoon peak periods (7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM) on two days, Thursday and Friday, August 13 and 14, 2026 at the following e9ght (8) locations:

- Leeward Highway – East of Millennium
- Leeward Highway – West of Millennium Road
- Leeward Highway East of Allegro Road
- Lower Bight Road – East of Beaches
- Lower Bight Road – West of Beaches
- Grace Bay Road – East of Project Site
- Grace Bay Road – West of Project Site
- Grace Bay Road – West of Allegro Road

SECTION II

2.0 Baseline Studies

Key components of baseline studies conducted for the Moon Palace Grand and Le Blanc resort development included marine and coastal surveys; Terrestrial ecology surveys and socio-economic assessments. Permitting and compliance rules applicable to the TCI were also research.

Analyses of baseline features and environments were done to quantify conditions on the site before the construction of the proposed development. These findings were then used to indicate the sensitivity of the area to impacts after construction. Under the scope of the project, mainly coastal conditions were investigated. These included erosion and accretion on the site, general wave climate, sediment classification and water quality information.

2.1 Historical overview of the site and existing development

The 44.5-acres Moon Palace resort development site – 60604/20, 254, 255, 497 & 498 and 60900/269 represents some highly significant parcels of land located on the eastern edge of Grace Bay Beach, bordering the affluent Leeward residential community on Providenciales, TCI. Historically a pristine, untouched stretch of coastal wilderness once part of the Leeward Development subdivision, this property has transitioned from early low-density residential neighbourhood zoning into the epicenter into one of the largest single private high-density tourism developments in the history of the TCI.

Being one of the largest stretches of vacant land available in the area, there were several speculative developers who eyed the area for several years with proposal to develop mega-resorts on this property. However, the trajectory of the 44.5-acres site completely shifted in August of 2025 when the TCIG officially signed the historic development agreement with the Moon Palace Company to construct the dual -resort luxury development on the site.

2.1.1 Historical ownership and land use of the site, proposed development, and surrounding areas

The historical chain of ownership title for the specific 44.5-acres tract of land located on Grace Beach, Leeward, Providenciales is not clear, though the land traces back to the broader master-planned Leeward development area originating from historical lease agreement with the TCIG.

The early historical background of the property shows that most coastal acreage on Providenciales was historically Crown land before large-scale lease-purchase agreements began in the late 1960s with companies like Provident Limited that kick-started tourism development on Providenciales.

The Leeward peninsula on the northeast tip of Providenciales evolved from raw coastal scrub into a master-planned, gated residential and marina community in the early 1960s.

2.2 Biological Environmental Baseline Assessment

2.2.1 Baseline terrestrial environment

Data collected from diver surveys, satellite imagery and review of underwater images are described below.

General Observations

The Project site is a highly active, human-altered environment. Both the upland and coastal areas are subject to frequent human use associated with recreational and commercial activities. The upland area is regularly utilized by four-wheel tour operators and serves as an access route for vehicles. The coastal area is used for recreational swimming and fishing and serves as a designated drop-off and pick-up point for boat tour operators and other water-based recreational activities. In addition, portions of the site are actively used for construction-related activities. Construction workers were observed in the western portion of the site, while heavy machinery and remnants of a turbidity curtain were observed in the northern portion.



Photo 1 – Heavy machinery observed in the northern section of The Project site



Photo 2 – Construction workers using areas on the site for parking.

2.2.1.1 Description and Quantification of Habitats and Ecosystems Present

The terrestrial area spans approximately forty-four and a half acres (44.5 ac). The Project site comprises two (2) distinct terrestrial ecosystems: Interior Upland and Coastal. Within these ecosystems, three (3) vegetation classes were identified: Coastal Dry Broadleaf Evergreen Formation, Human Altered Environment, and Sandy Shoreline (see Figure 11).

The Project site is predominantly characterized as a coastal dry broadleaf human-altered environment, with clear evidence of past anthropogenic disturbance, including a man-made roadway that traverses the site and extensive areas used for recreational and commercial activities. Scattered throughout the Human Altered Environment are remnant patches of Coastal Dry Broadleaf Evergreen Formation, consisting primarily of coastal evergreen plant species that are representative of the Lucayan Archipelago. The coastal area is characterized by a vegetated sandy shoreline supporting plant species adapted to coastal conditions.

Soils across The Project site are predominantly composed of sandy substrate. Within the vegetated upland areas, localized accumulations of organic leaf litter were observed. Domestic and construction waste were observed in various areas throughout The Project site, indicating ongoing and historical human activity. A structure was also observed in the human altered environment on The Project site GPS Coordinates: 21°48'43.60"N, 72° 9'40.22"W. The waste observed consisted of concrete wash out, used turbidity curtains and domestic waste (see Photos 3 – 5).



Photo 3 – Domestic waste observed on The Project site.



Photo 4 – Concrete washout activities observed on site.



Photo 5 – Old potential drainage system observed on site.

Interior Upland

Two (2) interior upland vegetation types were identified on The Project site, Coastal Dry Broadleaf Evergreen Formation and Human Altered Environment.

Coastal Dry Broadleaf Evergreen Shrubland

Coastal Dry Broadleaf Evergreen Formation (DBEF) is an interior upland vegetation community that typically occurs on sandy substrates (see Photo 6). These formations are generally characterized by a dominance of broadleaf evergreen vegetation and semi-deciduous woody species, a defined canopy structure, and variable vegetation heights. Within The Project site, the vegetation class was primarily represented by shrubland (an area with a higher flora density without a well canopy). Approximately fifty-five percent (55%) of The Project site is a Coastal DBEF.

One (1) variation of Coastal DBEF was identified and is described as the *Metopium toxiferum-Mosiera longipes-Reynosia septentrionalis* association. These species were among the most frequently encountered throughout the DBEF areas of The Project site; however, their relative dominance varied spatially, with species composition and abundance changing across different portions of the site.

Metopium toxiferum- Mosiera longipes-Renoysia septentrionalis association.

This vegetation class was observed throughout the entire upland ecosystem. The area is dominated by Poison wood (*Metopium toxiferum*), Sweet Margaret (*Mosiera longipes*), and Darling plum (*Reynosia septentrionalis).* Other species located within this vegetation class include Joe Wood (*Jacquinia keyensis),* Small-leaved Blolly (*Guapira discolor*), Silver Top Palm (*Leucothrinax morrisi*), Black Torch (*Erithalis fruticosa*), Wild Dilly (*Manilkara bahamensis*) and Ram's Horn (*Pithocellobium keyense*) among others. Waste was observed within this vegetation class.



Photo 6 – Coastal Dry Broadleaf Evergreen Formation.

Human Altered Environment

Human Altered Environments (HAE) are areas where the natural habitat has been modified or degraded due to human activities. These habitats are typically dominated by regenerating vegetation, pioneer species, horticultural plantings, and invasive non-native species (see Photo 7). Approximately thirty percent (30%) of The Project is categorized as a HAE.

Within The Project site, the HAE was characterized by an extensive network of pathways, roadways, and fencing associated with recreational and commercial activities. Frequently used pathways were largely devoid of vegetation due to continuous pedestrian and vehicular traffic, while less frequently used areas supported

sparse vegetation cover. The vegetation within this habitat consisted primarily of horticultural and non-native species, including Coconut (*Cocos nucifera*), Bougainvillea (*Bougainvillea* spp.), and Jum Bay (*Leucaena leucocephala*), along with scattered patches of regenerating native vegetation. It was observed that fencing runs through multiple areas across The Project site. Waste was observed within this vegetation class.



Photo 7 – Fencing place throughout The Project site.

Coastal

There was One (1) coastal vegetation type observed on The Project site, a Sandy Shoreline.

Sandy Shoreline

Sandy shorelines are coastal habitats that lack a rigid topography but are dominated by a sandy substrate. The normal predominant vegetation in this class includes salt-tolerant plants, succulents, and grass. There was one (1) type of sandy shoreline community that was observed, a *Causarina equisetifolia – Scaevola taccada – Uniola paniculata* beach strand alliance. The vegetative habitat is approximately fifteen percent (15%) sandy shoreline.

Causarina equisetifolia- Scaevola taccada- Uniola paniculata beach strand Alliance.

The vegetation class was observed in the northwestern region of The Project site. A sparsely vegetated sand dune was observed with a ridge of Australian Pine (*Causarina equisetifolia)* and Suckering Australian Pine (*Casuarina glauca*) in the back of the dune. Other species observed in this vegetation class include Sea grape (*Coccoloba uvifera*), Sea Oats (*Uniola paniculata*), White Ink Berry (*Scaevola taccada*), Black Ink Berry (*Scaevola plumieri*), and Goat's Foot (*Ipomoea pes-caprae*) observed in the fore dune (see Photo 8).



Photo 8 – Sandy Shoreline.

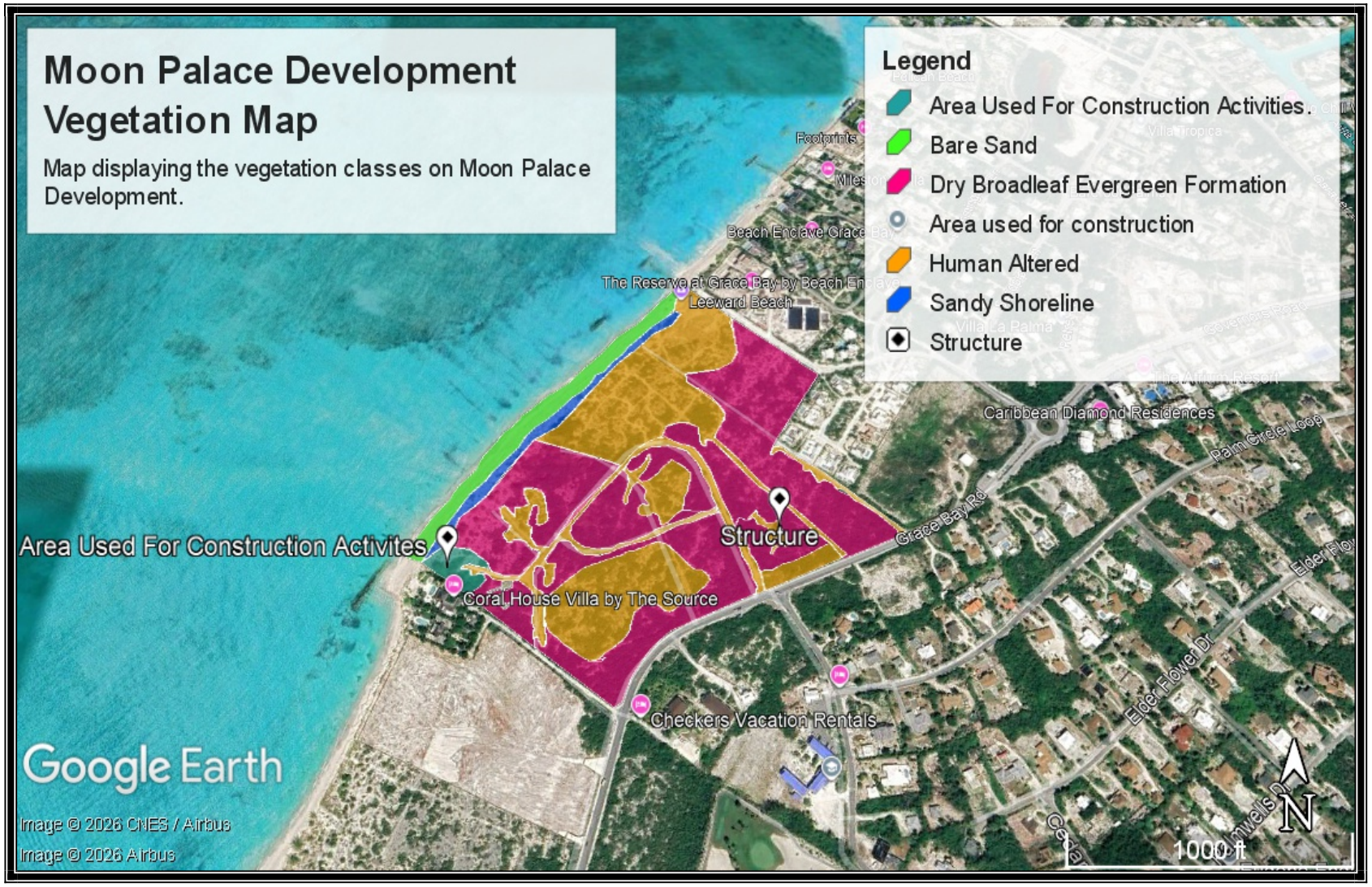


Figure 11 – Moon Palace Resort Development Vegetation Map.

2.2.1.2 Complete list and description of rare, threatened, and endangered species

There were seventeen (17) terrestrial species observed during the assessment that are listed on the Convention on International Trade of Endangered Species (CITIES) list and/or the International Union for Conservation of Nature (IUCN) Red List (see Table 10).

There was only one (1) species observed during the assessment that are listed within CITIES and includes species not necessarily threatened with extinction, but in which trade must be controlled to avoid utilization incompatible with their survival.

The IUCN Red List Categories and Criteria classify species at high risk of global extinction. It divides species into nine (9) categories: not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild, and Extinct. Table 10 highlights the species observed that are listed as Near Threatened or Least Concerned.

Table 10: IUCN and CITIES status for species observed.

Common Name	Scientific Name	CITIES Listing	IUCN
Flora Species			
Yellow wood	*Zanthoxylum flavum*	N/A	Vulnerable
Strongback	*Bourreria succulenta*	N/A	Least Concern
Wild Tamarind	*Lysiloma latisiliquum*	N/A	Least Concern
Sweet Margaret	*Mosiera longipes*	N/A	Near Threatened
Seven – year apple	*Casasia clusiifolia*	N/A	Least Concern
Brooks' Dildo Cactus	*Harrisia brookii*	Appendix II	N/A
Avian Species			
Laughing Gull	*Leucophaeus atricilla*	N/A	Least Concern
Common Ground Dove	*Columbina passerina bahamensis*	N/A	Least Concern
Zenaida Dove	*Zenaida aurita*	N/A	Least Concern

Common Name	Scientific Name	CITIES Listing	IUCN
Grey Kingbird	*Tyrannus dominicensis*	N/A	Least Concern
White Crown Pigeon	*Patagioenas leucocephala*	N/A	Near Threatened
Antillean Nighthawk	*Chordeiles gundlachii*	N/A	Least Concern
Northern Mockingbird	*Mimus polygottos*	N/A	Least Concern
Bananaquit	*Coereba flaveola*	N/A	Least Concern
Green Heron	*Butorides virescens*	N/A	Least Concern
Brown Peligan	*Pelecanus occidentalis*	N/A	Least Concern
Fauna Species			
Dragonfly	*Trithemis pallidinervis*	N/A	Least Concern

2.2.1.3 Complete List of Flora (Plants) Species

Botanical and terrestrial fauna surveys were conducted on The Project site. Species lists of all observations and locations were recorded in the tables below.

A total of fifty (50) species were recorded on The Project site (see Table 11).

Table 11 Key:	
CDBEF	Coastal Dry Broadleaf Evergreen Formation
HAE	Human Altered Environment
SS	Sandy Shoreline

Table 11 – Flora species recorded.

Family Name	Common Name	Botanical Name	Location		
			CDBEF	HAE	SS
Apocynaceae	Wild Alamander	*Allamanda cathartica*	✓		
Asteraceae	Bay Gerina	*Androsia hispidia*			✓
Evolvulus	Broom bush	*Baccharis dioica*	✓		✓

Family Name	Common Name	Botanical Name	Location		
			CDBEF	HAE	SS
Mycaginaceae	Bougainvillea	*Bougainvillea sp.*		✓	
Boraginaceae	Strongback	*Bourreria succulenta*	✓		
Rubiaceae	Seven-year apple	*Casasia clusiifolia*	✓		✓
Lauraceae	Love vine	*Cassytha filliformis*	✓		✓
Casuarinaceae	Australian Pine	*Casuarina equisetifolia*		✓	✓
Casuarinaceae	Suckering Australian Pine	*Casuarina glauca*		✓	✓
Poaceae	Sand Bur	*Cenchrus incertus*			✓
Clusiaceae	Pitch Apple	*Clusia rosea*			✓
Polyganaceae	Seagrape	*Coccoloba uvifera*	✓	✓	✓
Arecaceae	Coconut Tree	*Coccus nucifera*	✓	✓	✓
Combretaceae	Buttonwood	*Conocarpus erectus*	✓		
Malvaceae	Wooly Booger	*Corchorus hirsutus*	✓		
Apocynaceae	Devil's Potatoe	*Echites umbellatus*	✓		
Cyperaceae	White Head rush	*Eleocharis geniculata*	✓		
Rubiaceae	Black Torch	*Eritalis fruiticosa*	✓		
Rubiaceae	Golden Creeper	*Ernodea littoralis*	✓		✓
Rubiaceae	Bedstraw	*Galium hispidulum*	✓		
Rubiaceae	Crown Flower	*Gardenia jasminoides*	✓		
Nyctaginaceae	Small Leaved Blolly	*Guapira discolor*	✓		
Cactaceae	Brooks Dildo Cacti*	*Harrisii brooki*	✓		
Convolvuceae	Goats foot	*Ipomoea pes-caprae*			✓

Family Name	Common Name	Botanical Name	Location		
			CDBEF	HAE	SS
Asteraceae	Beach Iva	*Iva imbricata*			✓
Convolvulaceae	Havana Cluster vine	*Jacquemontia havensis*	✓		
Theophrastaceae	Joewood	*Jacquinia keyensis*	✓		
Verbenaceae	Sea sage *	*Lantana involucrata*	✓		
Poaceae	Bamboo grass	*Lasiacis divaricata*	✓		
Fabaceae	Jumbay	*Leucoceana leucocephala*	✓	✓	
Fabaceae	Wild Tamarind	*Lysiloma latisiliquum*	✓		
Sapotaceae	Wild Dilly	*Manilkara bahamensis*	✓		
Anacardiaceae	Poisonwood	*Metopium toxiferum*	✓		
Fabaceae	Haul back	*Mimosa bahamensis*	✓		
Myrtaceae	Sweet Margaret	*Mosiera longipes*	✓		
Fabaceae	Rams Horn	*Pithecellobium keyensis*	✓		
Rhamnaceae	Darling Plum	*Reynosia septentrionalis*	✓		
Goodeniaceae	Black Ink Berry	*Scaevola plumieri*			✓
Goodeniaceae	Haiiwan Seagrape	*Scaevola taccada*	✓	✓	✓
Fabaceae	Coastal Senna	*Senna mexicana var. chapmanii*	✓		
Sapotaceae	Willow Bustic	*Sideroxylon salicifolia*	✓		
Smilacaceae	Chaney Briar	*Smilax havensis*	✓		
Rubiaceae	Mosquito bush	*Strumpfia maritima*	✓		
Bignoniaceae	White Cedar	*Tabebuia heterophylla*	✓		
Malvaceae	Seaside mahoe	*Thespesia populnea*			✓

Family Name	Common Name	Botanical Name	Location		
			CDBEF	HAE	SS
Bromeliaceae	Tillandsia	*Tillandsia bulbosa*	✓		
Ranunculaceae	Buttercup	*Turnera ulmifolia*	✓		
Poaceae	Sea Oat	*Uniola paniculata*			✓
Fabaceae	Cinnecord *	*Vachellia choriophylla*	✓		
Rutaceae	Yellow wood	*Zanthoxylum flavum*	✓		

2.2.1.4 Complete List of Bird Species

Eight (8) species were recorded during the avian survey (See Table 12). A Summer Avian survey was completed. Once a winter avian assessment is completed for The Project, result will be incorporated.

Table 12 Key

Range	Status
PRB = Permanent Resident Breeding	LC = Least Concern (Conservation-IUCN)
WRN = Winter Resident Non-Breeding	
SRB = Summer Resident Breeding	NT = Near Threatened (Conservation-IUCN)
E =Endemic Species	IUCN = International Union of Conservation of Nature
UWR = Uncommon winter resident	VU = Vulnerable

Table 12 – Avian Species observed within The Project site.

Family	Common Name	Scientific Name	Master Observation	Range/Conservation Status
Columbidae	Common Ground Dove	*Columbina passerina bahamensis*	Few	PRB/e/LC
Columbidae	Zenaida Dove	*Zenaida aurita*	Few	PRB/LC
Tyrannidae	Grey Kingbird	*Tyrannus dominicensis*	Few	SRB/LC
Columbidae	White Crown Pigeon	*Patagioenas leucocephala*	Many	PRB/NT
Caprimulgidae	Antillean Nighthawk	*Chordeiles gundlachii*	Single	SRB/LC
Mimidae	Northern Mockingbird	*Mimus polygottos*	Few	PRB/LC
Thraupidae	Bananaquit	*Coereba flaveola*	Single	PRB/LC
Arideidae	Green Heron	*Butorides virescens*	Single	PRB/LC

***** Note: All avifauna are protected under Schedule of Protected Flora and Fauna in the Turks and Caicos Islands.***



Photo 9 – Grey Kingbird (Tyrannus dominicensis).

Range

A species' range can be defined as an area in which a particular species can be found. Migratory birds tend to have seasonal ranges while species with restricted ranges spend their entire life on the same island or in the same geographical region.

Permanent Resident Breeding

Permanent Resident Breeding (PRB) species refers to the resident species that live and breed year-round throughout the Lucayan Archipelago. There were six (6) PBR species observed during the assessment. Seventy-five percent (75%) of species observed were PBR.

Summer Resident Breeding

Summer Resident Breeding (SRB) refers to species that migrate to the Lucayan Archipelago from North America from April through August. Two (2) SBR species were observed on site. Approximately twenty-five percent (25%) of the species recorded during the survey were SBR species.

Endemic Species and Subspecies

Endemic species and subspecies are birds that only exist only in the Turks and Caicos Islands. No birds observed on The Project site are endemic to the Turks and Caicos Islands.

Habitat Utilization

Avifauna and other terrestrial fauna were observed utilizing both the Sandy shore, Coastal Dry Broadleaf Evergreen Formation, and Human Altered Environment. The Seagrape (*Coccoloba uvifera),* Love vine (*Cassytha filliformis*), and Darling plum (*Renoysia septentrionalis*) with fruits or buds would provide food for avian species. No active nest was observed on The Project site.

An additional winter avian field survey would be beneficial to identifying other species that reside within The Project site. Other surveys were repeated over a period are likely to record other species on the site; these species would utilize the site for perching, nesting and feeding.

2.2.1.5 Complete List of All Reptile and Amphibian Species Present

There were no amphibians or reptile species observed on The Project site.

2.2.1.6 Complete List of Any freshwater fish species Present

There were no freshwater fish species observed on The Project site.

2.2.1.7 Complete List of Any Mammal Species Present

There was no mammal species observed on The Project site.

2.2.1.8 Representative lists of invertebrates and fungi presents.

The Project site contains insects, arachnids, molluscs (gastropods), and a myriad of invertebrates. A total of twelve (12) species were observed on The Project (see Table 13). No fungi were observed on The Project site.

Table 13 – Fauna Species observed During the Assessment.

Family	Common Name	Scientific Name
Apidae	Carpenter Bee	*Xylocopa cubaecola*
Araneidae	Crab Spider	*Gasteracantha cancriformis*
Araneidae	Golden Orb	*Nephila clavipes*
Pieridae	Lyside Sulphur	*Kricogonia lyside*

Family	Common Name	Scientific Name
Cepolidae	Sea Grape Snail	*Hemitrochus sp.*
Vespidae	Paper Wasps	*Polistes major*
Rhinotermitidae	Termite	*Reticulitermes sp.*
Polychrotidae	Cuban Brown Anole	*Anolis sagrei*
Lestidae	Antillean Spreadwing	*Lestes spumarius*
Nymphalidae	Mexican Fritillary	*Euptoieta hegesia*
Cicadidea	Cicada	*Diceroprocta bonhotei*
Libellulidae	Dragonfly	*Trithemis pallidinervis*



Photo 10 – Mexican Fritillary (Euptoitea hegesia)



Photo 11 – Seagrape snail (Hemitrochus sp.)



Photo 12 – Dragonfly (Trithemis pallidinervis).

2.2.1.9 Complete Lists of Cave Biota, Both Terrestrial and Aquatic, From Qualified Researchers.

There were no karst formation or caves observed on The Project site; therefore, no cave biota was present.

2.2.1.10 Qualitative and Quantitative Study of Dune Ecosystem and Coastal Coppice Ecosystem on Subject Parcels

See section 2.2.1.10 for a qualitative and quantitative description of the coastal and coastal coppice ecosystem.

Discussion

The scope of works for The Project is the construction of a resort inclusive of hotels, sports courts, outdoor terrace, wedding gazebo, beach bar, restaurants, pools, pool bar, parking private residence, sales center, restrooms and back of house utility infrastructure. Currently there are no marine works scheduled for The Project.

The descriptions of botanical habitats observed are a fair representation of biodiversity on the site. While it is likely that additional species would be recorded with further field studies, this is not likely to impact the results of this study for the purposes it is intended.

Botanical

The Project site exhibited a high abundance of individual plants; however, overall floristic diversity was relatively low, with the same plant species recurring throughout much of the site. The botanical community was composed primarily of species typically associated with Human Altered Environments, Coastal Dry Broadleaf Evergreen Formation, and Coastal Sandy Shoreline ecosystems.

The widespread occurrence of the same species across the site is likely attributable to the high level of anthropogenic disturbance and the site's continued use for recreational, commercial, and construction-related activities. A construction man camp and laydown area were observed in the southwestern portion of The Project site, further contributing to habitat modification and the predominance of disturbance-tolerant species. However, this is in relation to construction on adjacent property.

Avian

The avian community observed within The Project site was typical of highly disturbed, human-altered habitats. Most bird activity was recorded during the late afternoon and evening survey periods, when birds were observed foraging and moving through the site.

Overall avian abundance was relatively low, likely due to the high level of human activity, persistent noise, and ongoing recreational and commercial use of the area. The species recorded are common, disturbance-tolerant birds that are well adapted to human-modified environments.

Based on the existing level of disturbance and the habitat preferences of the species observed, the proposed development is not expected to have a significant impact on the local avian community. The bird species currently utilizing the site are anticipated to continue using the area following development, provided that similar habitat features and surrounding foraging opportunities remain available.

2.2.2 Baseline Marine Environment

General Observations

The weather conditions during this assessment were partly cloudy and windy with winds out of the East Southeast at twenty-four to twenty-seven kilometres per hour (24 – 27 km/hr.). Air temperature was 80 – 84 °F. On the 20th of July 2026, high tide was observed, as the benthic assessment began and on the 21st of July 2026 low tide was observed at the beginning of the assessment.

Water depth was measured to be zero meters to six and seven tenths' meters (0 m. - 6.7 m.). Based on a range of one to ten (1-10) with one (1) being zero visibility and ten (10) being transparent, visibility in the area was seven (7) offshore and five (5) inshore.

It should be noted that there was significant human traffic and boating traffic within the near-shore surveyed area and significant boating traffic in the offshore survey area.

2.2.2.1 Description and Quantification of Marine Habitats and Ecosystem Present

Quantitative Analysis –Nearshore Environment

While there is no development scheduled for the marine environment, a quantitative analysis was completed for nearshore environment. Sections below provide the percent cover of each benthic habitat observed within the near-shore environment. See Appendix N1 for the in-field habitat description along transects with corresponding GPS Coordinates.

Due to the similarity in benthic habitat along transects conducted within the nearshore environment, the habitats encountered are separated into three (3) generalized categories and two (2) variations:

- Sandy Bottom
    - Sandy Bottom with Macroalgae
    - Bare Sand
- Hard Bottom
- Groynes

Sandy Bottom

Sandy bottom habitats were observed extending from the shoreline. Sandy bottom habitats include bare sand and sandy bottom with macroalgae.

Bare Sand

Bare sand benthic habitat made up eighty-eight percent (88%) of the near-shore environment. No flora was observed in this habitat and fauna diversity and abundance was low (see Photo 13). Only fauna observed were fish species such as Yellowfin Majorra (*Gerres cinereus*), Bar Jack (*Caranx rubber*), and Great Barracuda (*Sphyraena barracuda*) transitioning from one area to the next.

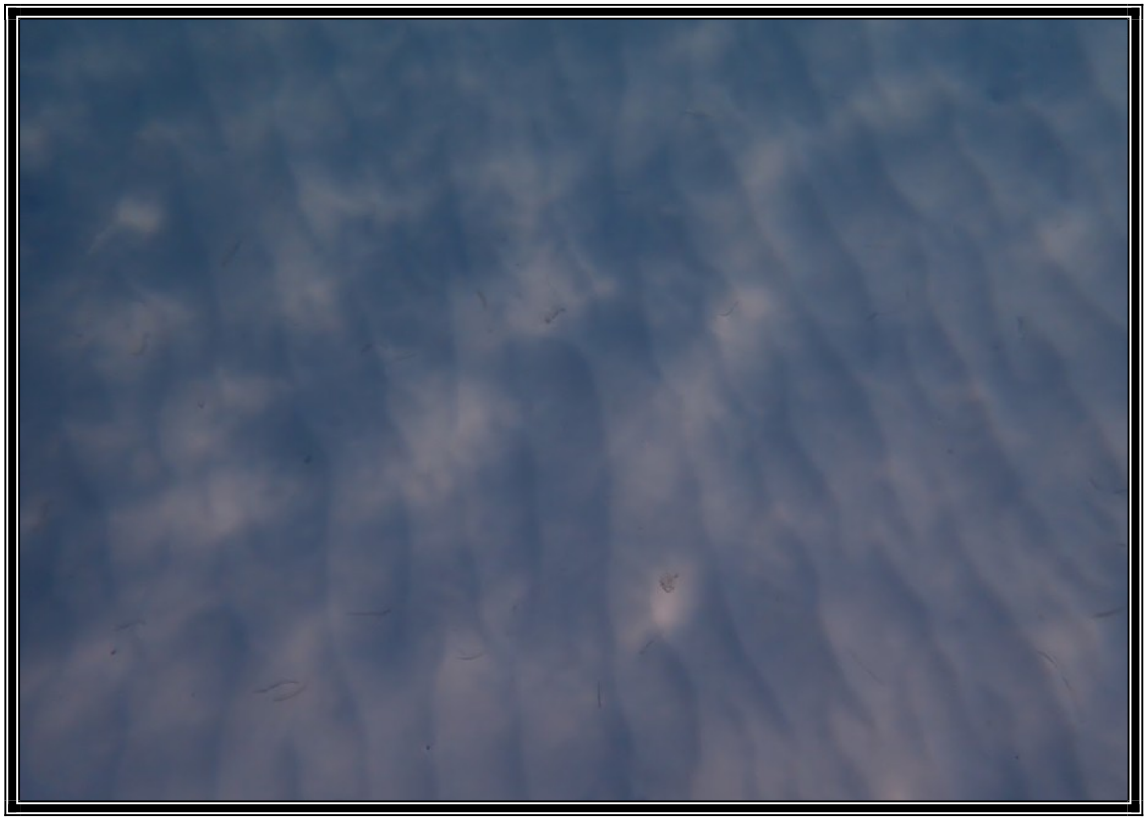


Photo 13 – Bare Sand

Within this habitat, three (3) structures were observed on the seafloor (see Photo 14 – 16). Macroalage dominated the structures, including Green Mermaid Wineglass (*Acetabularia crenulata*), Turf Algae, Laurencia (*Laurencia sp*.) and Spiny Seaweed (*Acanthophora spicifera*). Fish species observed around the structures included Lane Snapper (*Lutjanus synagris*), Yellow Tail Snapper (*Ocyurus chrysurus*), Slippery Dick (*Halichoeres bivittatus*), Dusky Damselfish (*Stegastes adustus*), Bar Jack (*Caranx ruber*), Blue Tang (*Acanthurus coeruleus*) and Ocean Surgeonfish (*Acanthurus bahianus*).



Photo 14 – Underwater structure



Photo 15 – Underwater structure

Sandy Bottom with Macroalgae and Rubble

Sandy bottom with macroalgae and rubble made up nine percent (9%) of the nearshore environment and was observed in patches within the bare sand habitats (see Photo 17). Rubble consisted of small rocks that sat on the sandy bottom (see Photo 18). Rocks were often observed with algae such as Fuzzy Finger Algae (*Dasycladus vermicularis)*, Pinecone Algae *(Rhipocephalus phoenix*), Mermaid's fan (*Udotea spp*.) Laurencia (Laurencia, sp.) Slender Cartilage Weed *(Chondria capillaris*), Spiny Seaweed (*Acanthophora spicifera*) and Three Finger Leaf Algae (*Halimeda incrassata*). Dead seagrass blades were often observed covering this benthic habitat (see Photo 18).



Photo 16 – Sandy Bottom with Macroalgae and rubble



Photo 17 – Sandy Bottom with Macroalgae and rubble



Photo 18 – Dead seagrass blades within the sandy bottom with macroalgae habitat

Fish species such as Yellowfin Majorra (*Gerres cinereus*), and Bar Jack (*Caranx rubber*), were observed transitioning through the area. The dominant epifauna observed within this habitat included Black Ball Sponges (*Ircinia strobilina*). Other invertebrates observed in this habitat included Stocky Ceriths (*Cerithium litteratum*).

Hard Bottom

Hard bottom habitat made up two percent (2%) of the nearshore environment and was observed extending from the bare sand habitats (see Photo 19 – 20). This area had low rugosity.



Photo 19 – Hard Bottom

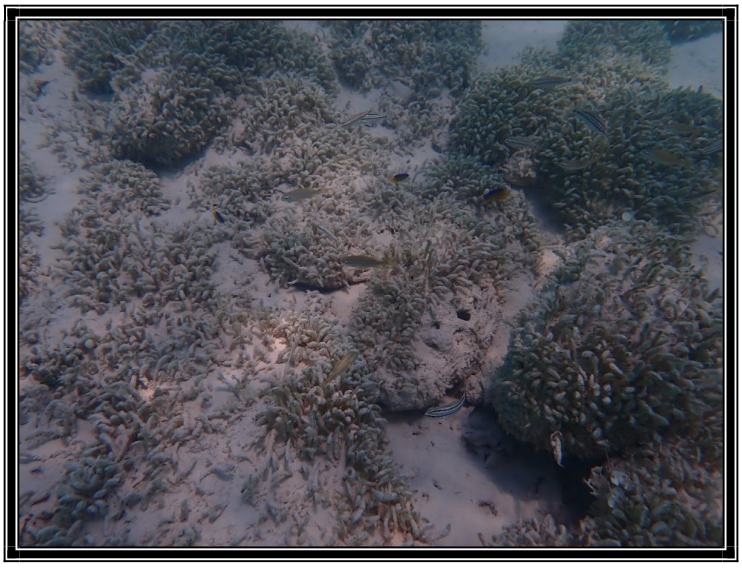


Photo 20 – Hard bottom

Several algae species were observed in this area including Y-Branched Algae (*Dicotya spp.*), White Scroll Algae (*Padina sanctae crucis*), Slender Cartilage Weed *(Chondria capillaris*), Spiny Seaweed (*Acanthophora spicifera*), Green Mermaid Wineglass (*Acetabularia crenulata*), Turf Algae, and Fuzzy Finger Algae (*Dasycladus vermicularis*),

Dominant stony corals found in this area included Mustard Hill Coral (*Porities astreoides*), and Lesser Starlet Coral (*Sideastrea radians*). Giant Sea Anemone (*Condylactis gigantea*) was the only epifauna observed in this benthic habitat

Fish species observed in this habitat included Slippery Dick (*Halichoeres bivittatus*), Blue Tang (*Acanthurus coeruleus*), juvenile grunts, French Grunts (*Haemulon flavolineatum*), and Beaugregory (*Stegastes leucostictus*).

Groyne

There were three (3) groynes located within the nearshore environment. Groynes consisted of large boulders stacked together, with the two (2) north-eastern groynes being partly submerged and the south-western groyne being fully submerged (see Photos 21 – 23). Groynes made up one percent (1%) of the near-shore environment and had high rugosity. Several algae species were observed on the groynes including Turf Algae, Y-Branched Algae (*Dicotya spp.*), Slender Cartilage Weed *(Chondria capillaris*), Spiny Seaweed (*Acanthophora spicifera*), Laurencia (*Laurencia sp.),* Pink Bush Algae (*Wrangelia penicillata*), Pink Thicke Algae (*Galaxaura sp.*), Filamentous Green Algae (*Cladophora sp.*), Cyanobacteria and Crustose Coralline Algae (CCA).



Photo 21 – Underwater photo of the groyne



Photo 22 – Above water photo of the groyne



Photo 23 – Fully submerged groyne

Fish species diversity and abundance was high around the groynes, specifically around the southwest groyne. Fish species observed in this habitat included Slippery Dick (*Halichoeres bivittatus*), Blue Tang (*Acanthurus coeruleus*), Spotted Goat Fish (*Pseudupeneus maculatus*), Queen Parrotfish (*Scarus vetula*), Foureye Butterflyfish (*Chaetodon capistratus*), Schoolmaster Snapper (*Lutjanus apodus*), Mahogany Snapper (*Lutjanus mahogoni*), Beaugregory (*Stegastes leucostictus*), Sergeant Major (*Abudefduf saxatilis*), Dusty Damselfish (*Stegastes adustus*), Silversides (*Atherinidae, Clupeidae, Engraulididae Family*), Yellowtail Snapper (*Ocyurus chrysurus*), Spotted Porcupine fish (*Diodon hystrix*), Permit (*Trachinotus falcatus*), French Grunts (*Haemulon flavolineatum*), Stoplight Parrotfish (*Sparisoma viride*), Blue Headed Wrasse (*Thalassoma bifasciatum*), Ocean Surgeonfish (*Acanthurus bahianus*), Blue Tang (*Acanthurus coeruleus*), Bar Jack (*Caranx ruber*), and Great Barracuda (*Sphyraena barracuda*).

Coral species observed included the Blushing Star Coral (*Stephanocoenia intersepta*), Branching Fire Coral (*Millepora alcicornis*), Grooved Brain Coral (*Diploria labyrinthiformis*) Finger Coral (*Porites porites*), Mountainous Star Coral (*Orbicella faveolata*), Lesser Starlet Coral (*Siderastrea radians*), Symmetrical Brain Coral (*Pseudodiploria strigosa*), (Knobby Brain Coral (*Pseudiploria clivosa*), Mustard Hill Coral (*Porites asteroids*), Finger Coral (*Porites sp.*), Corky Sea Finger (*Briareum asbestinum*), and Sea Rods (*Plexaurella spp.).*

The most dominant epifauna observed on the groynes were the Giant Sea Anemone (*Condylactis gigantea*). Other epifauna observed included the Coral Encrusting Sponge, CZOO (*Cliona Zooxanthellae*), Stocky Ceriths (*Cerithium litteratum*), Stinker Sponge (*Ircinia felix*), Christmas Tree Worm (*Spirobranchus giganteus*), Social Feather Duster Worm (*Bispira brunnea*) and Caribbean Spiny Lobster (*Panulirus argus*).

Qualitative Analysis

A qualitative analysis was completed for the offshore environment. Sections below provide benthic description of the offshore environment. See Appendix A-2 for the GPS Coordinates and corresponding benthic description for each manta tow-transect. See Appendix N-3 for GPS Coordinates of spot checks and corresponding benthic description.

Due to the similarity in benthic habitat along transects and spot checks conducted within the offshore environment, the habitats encountered are separated into three (3) generalized categories and two (2) variations:

- Sandy Bottom
    - Sandy Bottom with Macroalgae and Rubble
    - Bare Sand
- Hard Bottom with Seagrass
- Seagrass

Sandy Bottom

Sandy bottom habitats were observed along the western and south-western areas of the offshore environment. Sandy bottom habitats include bare sand and sandy bottom with macroalgae.

Bare Sand

Bare sand was observed along the eastern and south-western side of the offshore environment. No flora was observed in this habitat and fauna diversity and abundance was low (see Photo 24). Only fauna observed were fish species such as Yellowfin Majorra (*Gerres cinereus*) and Bar Jack (*Caranx rubber*) transitioning from one area to the next.



Photo 24 – Bare Sand

Sandy Bottom with Macroalgae and Rubble

Sandy bottom with macroalgae and rubble made was observed in patches within the bare sand habitats (see Photo 25). Rubble consisted of small rocks that sat on the sandy bottom. Rocks were often being observed with algae such as Fuzzy Finger Algae (Dasycladus vermicularis), Pinecone Algae (Rhipocephalus phoenix), Mermaid's fan (Udotea spp.), Slender Cartilage Weed (Chondria capillaris), Spiny Seaweed (Acanthophora spicifera) Green Mermaid Wine Glass (Acetabularia crenulata) and Three Finger Leaf Algae (Halimeda incrassata) (see Photos 26 – 27).

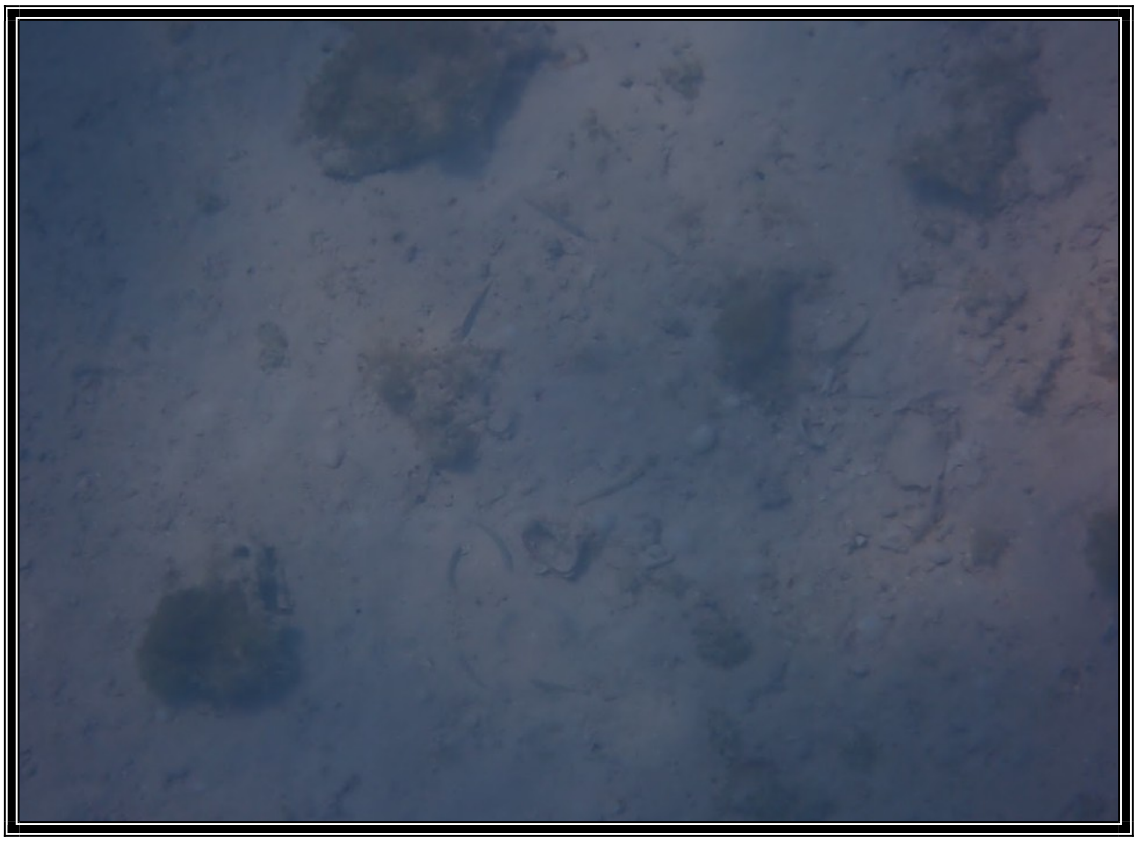


Photo 25 – Sandy bottom with macroalagae and rubble



Photo 26 – Macroalgae



Photo 27– Rubble with macrolagae

Fish species such as Yellowfin Majorra (*Gerres cinereus*), and Bar Jack (*Caranx ruber*), were observed transitioning through the area. No epifauna was observed in this benthic habitat.

Hard Bottom with Seagrass

bottom with seagrass was observed on the western side of the offshore environment (see Photos 28 – 30). Overall, this area had moderate rugosity with localized areas having high rugosity. The hard bottom substrate was covered with a thin layer of sand and seagrass, with the seagrass covering the area in sparse density (see Photo 18). Turtle Grass (*Thalassia testudinum*) was the only seagrass species observed in this habitat.



Photo 28 – Hard Bottom



Photo 29 – Localized area with high rugosity



Photo 30 – Hard Bottom with thin layer of sand and sparse seagrass

Several algae species were observed including Turf Algae, Y-Branched Algae (*Dicotya spp.*), Laurencia (*Laurenci sp.),* Cyanobacteria, Pink Thicket Algae (Galaxaura sp.), Filamentous Green Algae (*Cladophora sp.*), Green Jointed Stalk Algae (*Halimeda monile*), Mermaid's fan (*Udotea spp.*), Cyanobacteria, White Scroll Algae (*Padina sanctae-crucis*) and Encrusting Fan-Leaf Alga (*Lobophora variegata*).

Within the offshore environment fish species diversity and abundance was highest. Fish species observed in this habitat included Slippery Dick (*Halichoeres bivittatus*), Blue Tang (*Acanthurus coeruleus*), Foureye Butterflyfish (*Chaetodon capistratus*), Schoolmaster Snapper (*Lutjanus apodus*), Mahogany Snapper (*Lutjanus mahogoni*), Beaugregory (*Stegastes leucostictus*), Sergeant Major (*Abudefduf saxatilis*), Dusty Damselfish (*Stegastes adustus*), Silversides (Atherinidae, Clupeidae, Engraulididae Family), Yellowtail Snapper (*Ocyurus chrysurus*), French Grunts (*Haemulon flavolineatum*), Stoplight Parrotfish (*Sparisoma viride*), Blue Headed Wrasse (*Thalassoma bifasciatum*), Ocean Surgeonfish (*Acanthurus bahianus*), Bar Jack (*Caranx ruber*), Red Hind (*Epinephelus guttatus*), Queen Angelfish (*Holacanthus ciliaris*), Squirrelfish (*Holocentrus adscensionis*), and Longspine Squirrelfish (*Holocentrus adscensionis*).

Coral species observed included the Branching Fire Coral (*Millepora alcicornis*), Finger Coral (*Porites porites*), Branching Finger Coral (*Porites furcata*), Mountainous Star Coral (*Orbicella faveolata*), Lesser Starlet Coral (*Siderastrea radians*), Symmetrical Brain Coral (*Pseudodiploria strigosa*), Mustard Hill Coral (Porites asteroids), and Corky Sea Finger (*Briareum asbestinum*).

The most dominant epifauna observed were the Giant Sea Anenome (*Condylactis gigantea*) Erect Rope Sponge (*Amphimedon nodosa*), and Black Ball Sponge (*Ircinia strobilina*). Other epifauna observed included the Coral Encrusting Sponge, CZOO (*Cliona Zooxanthellae*), Stinker Sponge (*Ircinia felix*), Christmas Tree Worm (*Spirobranchus giganteus*), Social Feather Duster Worm (*Bispira brunnea*) Bearded Fireworm (*Hermodice carunculata*), *Erylus formosus*, Brown Variable Sponge (*Cliona varians*), Red Boring Sponge (*Cliothosa delitrix*), *Niphates amorpha*, Overgrowing Mat Tunicate (*Tridid*emnum *solidum*), Row Rope Pore Sponge (*Aplysina cauliformis*), and Yellow Branchlet Sponge (*Aplysina insularis*).

Seagrass

Seagrass was observed on the northern side of the offshore environment. The seagrass consisted of Turtle Grass (*Thalassia testudinum*) and macroalgae (see Photos 31 – 33). Turtle grass was observed to be sparse to moderate in density. Macroalage observed

within the seagrass included Pinecone Algae (*Rhipocephalus phoenix*), Green Jointed Stalk Algae (*Halimeda monile*), Mermaid's fan (*Udotea spp*.), and Laurencia (*Laurencia* sp.).

Queen Conch (*Aliger gigas*) was the only epifauna observed within the seagrass habitat.



Photo 31 – Seagrass



Photo 32 – Seagrass

Patches of bare sandy bottom were observed in the seagrass (see Photo 33).



Photo 33 – Patch of sandy bottoms within the seagrass

Patches of hard bottom were also observed within seagrass habitat (see Photo 34). These patches often contained sponges, such as Stinker Sponge (*Ircinia felix*) and Black Ball Sponge (*Ircinia strobilina*); other invertebrates such as CZOO (*Cliona Zooxanthellae*), Giant Sea Anaenome (*Condylactis gigantea*), *Niphates amorpha,* Overgrowing Mat Tunicate (*Tridídemnum solidum),* and Social Feather Duster Worms (*Bispira brunnea*); as well as stony corals such as Finger Coral (*Porities porities*), Lesser Starlet Coral (*Siderastrea radians*), and Mustard Hill Coral (*Porites asteroides*). Fish were often observed around the hard bottom patches. Fish included Beaugregory (*Stegastes leucostictus*), Blue Tangs (*Acanthurus coeruleus*) Schoolmaster Snapper (*Lutjanus apodus*) and Sergeant Major (*Abudefduf saxatilis).*



Photo 34 – Hard Bottom patch

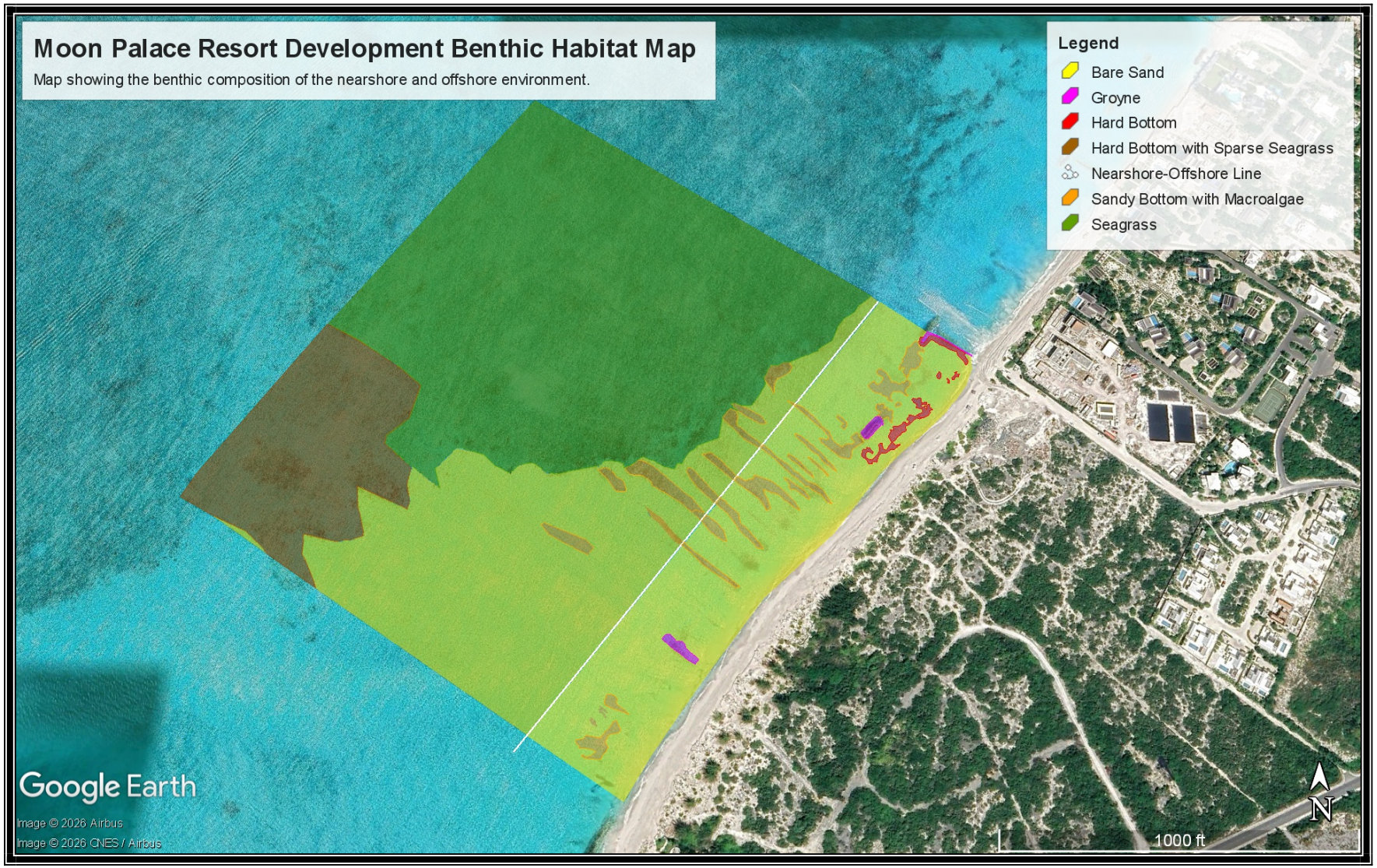


Figure 12 – Benthic Habitat Map

2.2.2.2 Complete list and description of rare, threatened, and endangered species

There were twenty-two (22) marine species observed during this assessment that are listed on the Convention on International Trade of Endangered Species (CITES) list and/or the International Union for Conservation of Nature (IUCN) Red List (see Table 14).

There were eleven (11) species observed during the assessment that are listed within CITES II. CITES II includes species not necessarily threatened with extinction, but in which trade must be controlled to avoid utilization being incompatible with their survival.

The IUCN Red List Categories and Criteria classify species at high risk of global extinction. It divides species into nine (9) categories: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct Table 14 highlights species observed that are listed as Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild.

Table 14 – ICUN and CITES status for species observed

Common Name	Scientific Name	CITES Listing	IUCN Listing
Coral Species			
Symmetrical Brain Coral	*Pseudodiploria strigose*	Appendix II	Critically Endangered
Mountainous Star Coral	*Orbicella faveolata*	Appendix II	Endangered
Knobby Brain Coral	*Diploria clivosa*	Appendix II	Near Threatened
Mustard Hill	*Porites astreoides*	Appendix II	Least Concern
Lesser Starlet Coral	*Siderastrea radians*	Appendix II	Least Concern
Blushing Star Coral	*Stephanocoenia intersepta*	Appendix II	Neat Threatened
Branch Fire Coral	*Millepora alcicornis*	Appendix II	Vulnerable
Grooved Brain Coral	*Diploria labyrinthiformis*	Appendix II	Critically Endangered
Finger Coral	*Porites*	Appendix II	Least Concern
Branched Finger Coral	*Porites furcata*	Appendix II	Least Concern
Fish Species			
Stoplight	*Sparisoma viride*	N/A	LC

Common Name	Scientific Name	CITES Listing	IUCN Listing
parrotfish			
Ocean Surgeonfish	*Acanthurus bahianus*	N/A	LC
Blue Tang	*Acanthurus coeruleus*	N/A	LC
Longspined Squirrelfish	*Holocentrus rufus*	N/A	LC
Grey Snapper	*Lutjanus griseus*	N/A	LC
Lane Snapper	*Lutjanus synagris*	N/A	NT
French Grunt	*Haemulon flavolineatum*	N/A	LC
Caesar Grunt	*Haemulon carbonarium*	N/A	LC
Blue Headed Wrasse	*Thalassoma bifasciatum*	N/A	LC
Slippery Dick	*Halichoeres bivittatus*	N/A	LC
Yellowtail Snapper	*Ocyurus chrysurus*	N/A	DD
Spotted Porcupine fish	*Diodon hystrix*	N/A	LC
Permit	*Trachinotus falcatus*	N/A	LC
Red Hind	*Epinephelus guttatus*	N/A	LC
Queen Angelfish	*Holacanthus ciliaris*	N/A	LC
Squirrelfish	*Holocentrus adscensionis*	N/A	LC
Bar Jack	*Caranx ruber*	N/A	LC
Great Barracuda	*Sphyraena barracuda*	N/A	LC
Yellowfin Majorra	*Gerres cinereus*	N/A	LC
Spotted Goat Fish	*Pseudupeneus maculatus*	N/A	LC
Yellowtail Parrotfish	*Sparisoma rubripinne*	N/A	LC
Queen Parrotfish	*Scarus vetula*	N/A	LC
Foureye Butterflyfish	*Chaetodon capistratus*	N/A	LC
Schoolmaster Snapper	*Lutjanus apodus*	N/A	LC
Mahogany Snapper	*Lutjanus mahogoni*	N/A	LC
Beaugregory	*Stegastes leucostictus*	N/A	LC
Sergeant Major	*Abudefduf saxatilis*	N/A	LC
Dusky Damselfish	*Stegastes adustus*	N/A	LC
Other Fauna and Epifauna			

Common Name	Scientific Name	CITES Listing	IUCN Listing
Queen Conch	*Aliger gigas*	Appendix II	N/A
Caribbean Spiny Lobster	*Panulirus argus*	N/A	DD



Photo 35 – Caribbean Spiny Lobster (Panulirus argus)



Photo 36 – Queen Conch (Aliger gigas)

2.2.2.3 Complete List of all marine Flora (plants including macroalgae) present

Flora species were found in abundance across the site. There were twenty-two (22) flora species observed (see Table 15).

Table 15 – Flora Species observed during the assessment

Common Name	Scientific name
Fuzzy Finger Algae	*Dasycladus vermicularis*
Halimeda	*Halimeda incrassate*
Bristle Ball Brush	*Penicillus dumetosus*
Pinecone Algae	*Rhipocephalus phoenix*
Green Jointed Stalked Algae	*Halimeda monile*
Tubular Thicket Algae	*Galaxaura sp.*
Green Mermaid Wine Glass	*Acetabularia calyculus*
White Scroll Algae	*Padina sanctae crucis*

Common Name	Scientific name
Y Branch Algae	*Dicotya spp.*
Encrusting Fan Leaf Algae	*Lobophora variegate*
Laurencia	*Laurencia sp.*
Crustose Coralline Algae	*Order: Corallinales*
Mermaid Fan	*Udotea spp.*
Bristle Ball Brush	*Penicillus dumetosus*
Green Algae	*Halimeda spp.*
Turf Algae	*N/A*
Turtle Grass	*Thalassia testudinum*
Cyantobacteria	*N/A*
Slender Cartilage Weed	*Chondria capillaris*
Spiny Seaweed	*Acanthophora spicifera*
White Scroll Algae	*Padina sanctae-crucis*
Filamentous Green Algae	*Cladophora sp.*

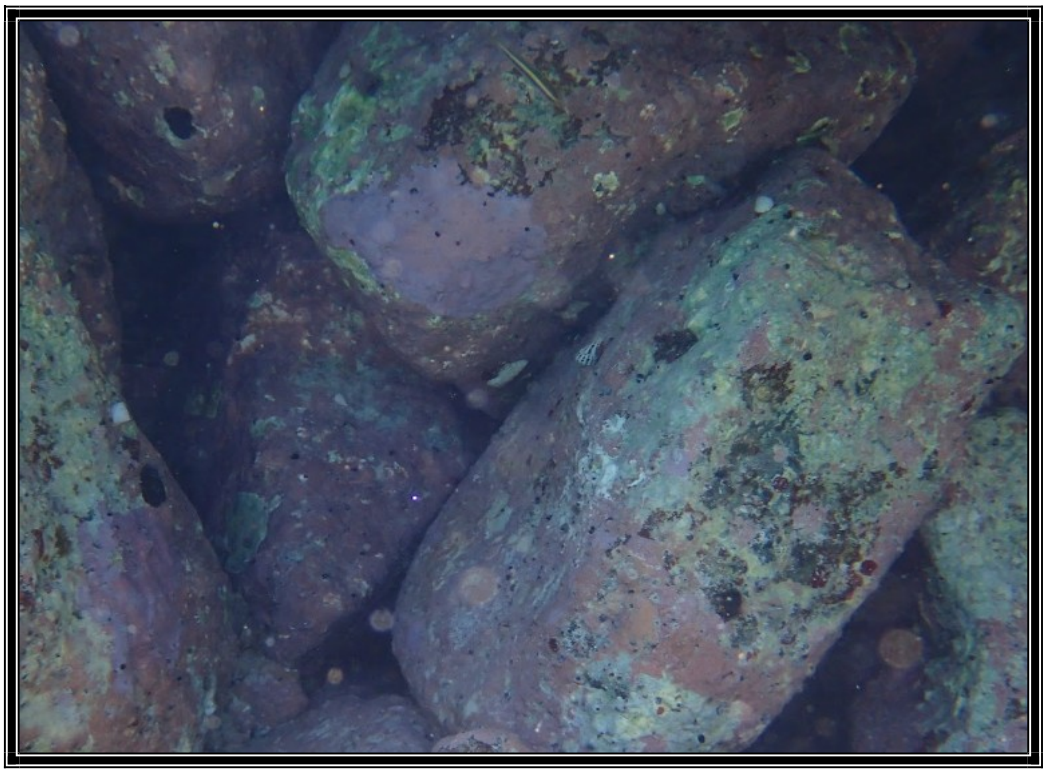


Photo 37- Crustose Coralline Algae



Photo 38 Fuzzy Finger Algae (Dasycladus vermicularis)



Photo 39 – Y-Branched Algae(Dicotya sp)

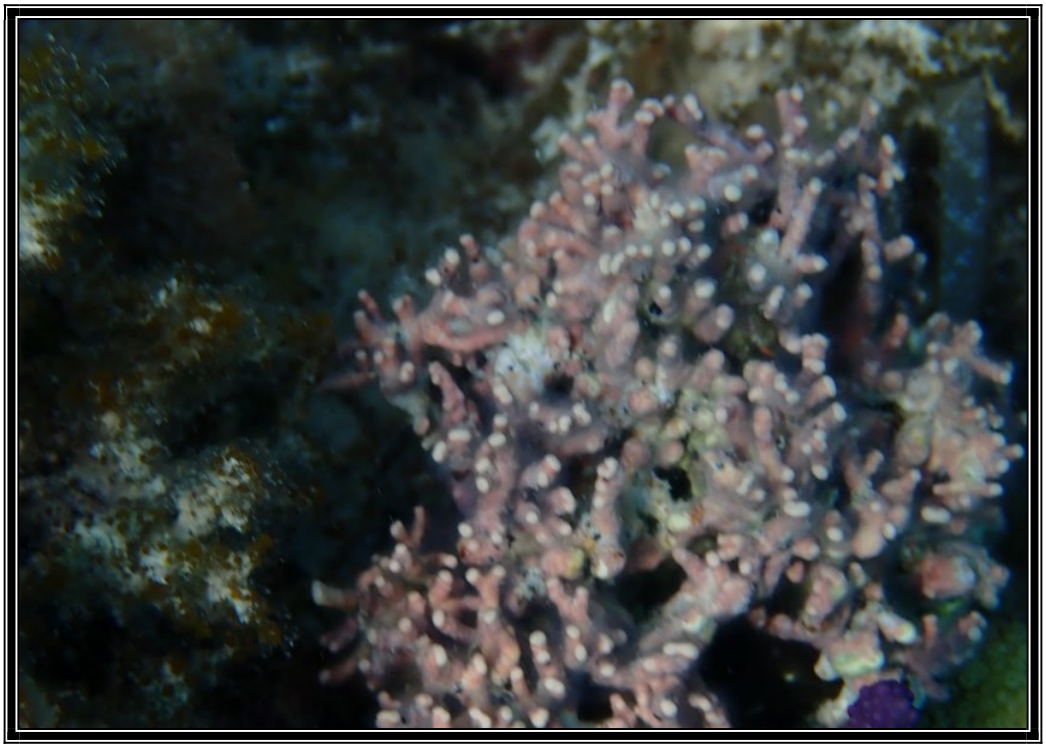


Photo 40 – Tubular Thicket Algae (Galaxaura sp.)



Photo 41 – White Scroll Algae(Padina sanctae crucis)

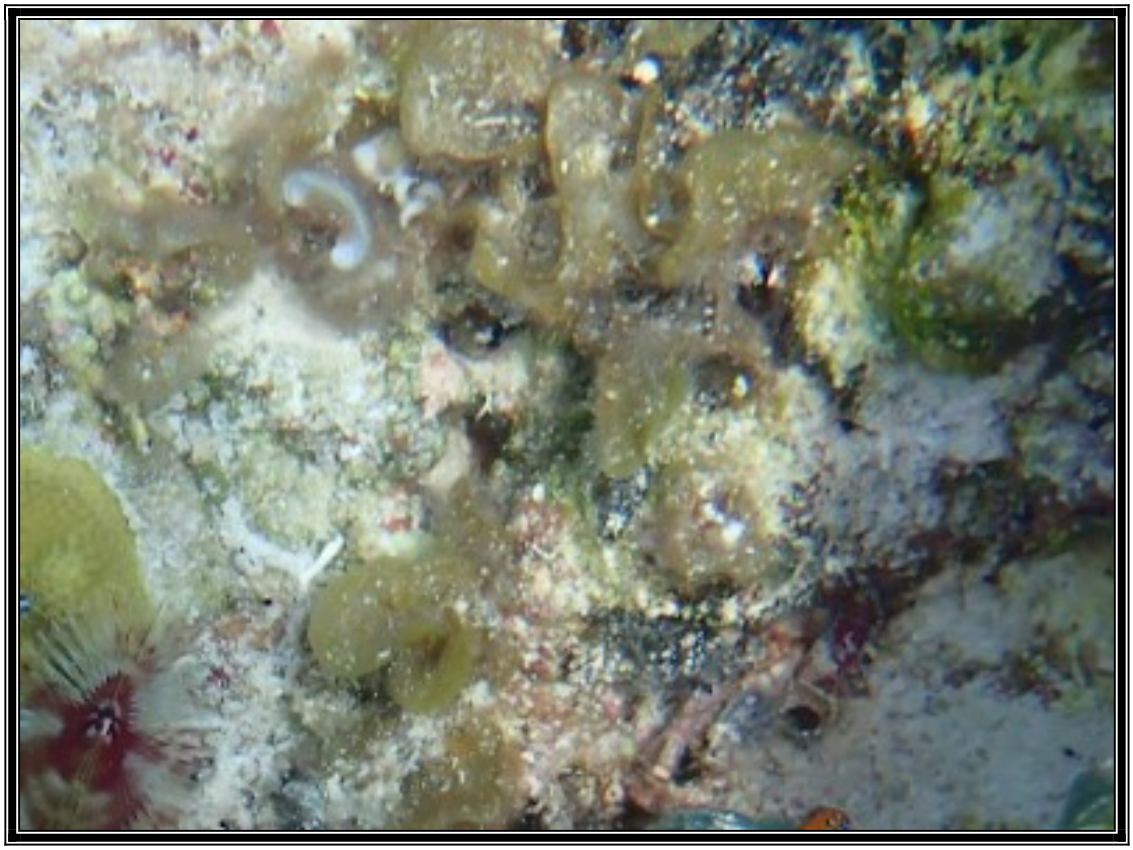


Photo 42 – Encrusting Fan Leaf Algae (Lobophora variegate)

2.2.2.4 Complete list of all coral species present, including soft coral

Coral species observed were identified and given a frequency rating (based on occurrence) of Single (1 individual), Few (2-10 individuals), Many (11-100 individuals), or Abundant (more than 100 individuals). Location where species were observed is listed as nearshore (N) and offshore (O).

Majority of coral species were observed in the hard bottom habitats and around the groynes. There were fourteen (14) coral species observed during the assessment (see Table 16).

Table 16 – Coral species observed during the assessment

Common Name	Scientific name	Abundance	Location
Branching Fire Coral	*Millepora alcicornis*	Many	N, O
Finger Coral	*Porites*	Many	N, O
Mountainous Star Coral	*Orbicella faveolata*	Few	N, O
Lesser Starlet Coral	*Siderastrea radians*	Many	N, O
Symmetrical Brain Coral	*Pseudodiploria strigosa*	Few	N, O
Grooved Brain Coral	*Diploria labyrinthiformis*	Single	N
Knobby Brain Coral	*Pseudiploria clivosa*	Few	N, O
Blushing Star Coral	*Stephanocoenia intersepta*	Single	N
Branching Finger Coral	*Porites furcata*	Few	N, O
Mustard Hill Coral	*Porites asteroides*	Many	N, O
Corky Sea Finger	*Briareum asbestinum*	Few	N, O
Sea Rods	*Plexaurella spp.*	Many	N, O
Porous Sea Rods	*Pseudoplexaura spp.*	Many	N
Knobby Sea Rod	*Eunicea spp*	Many	N



Photo 43 – Grooved Brain Coral (Diploria labyrinthiformis



Photo 44 – Knobby Brain Coral (Pseudiploria clivosa)

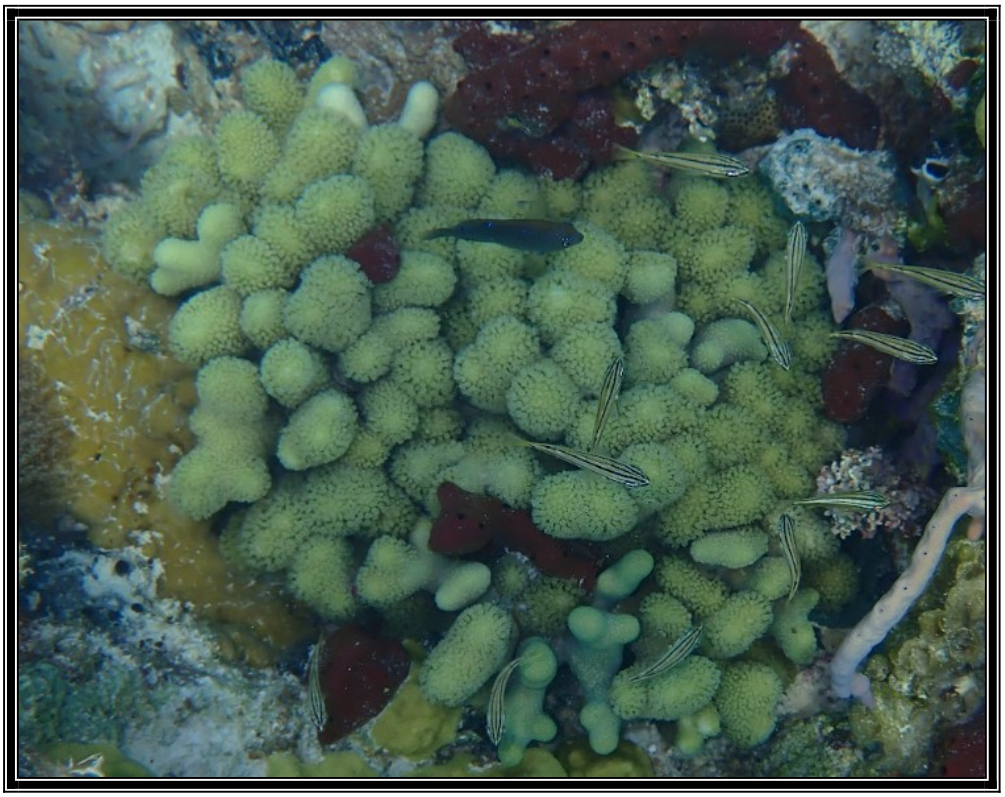


Photo 45 – Finger coral (Porites porites) and Branching Finger Coral (Porites furcata)



Photo 46 – Smooth Brain Coral (Pseudodiploria strigosa)

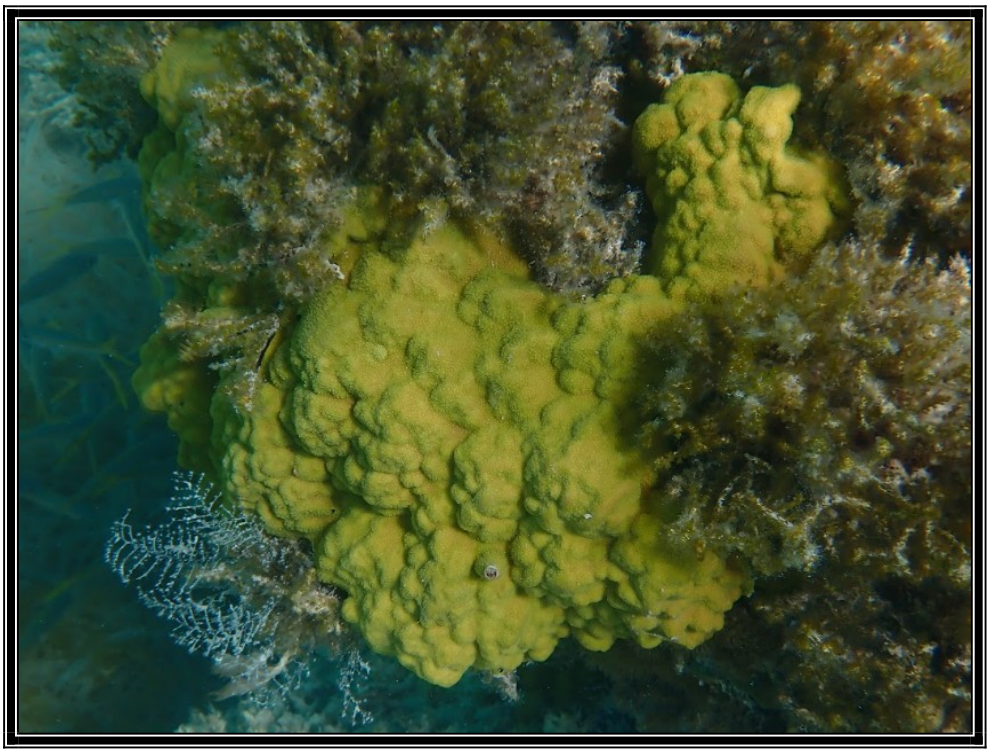


Photo 47 – Mustard Hill Coral (Porites asteroides)



Photo 48 – Mountainous Star Coral (Orbicella faveolata)

2.2.2.5 Complete list of seabirds' presents

Four (4) seabird species were recorded during the avian survey (See Table 17). A Summer Avian survey was completed. Once a winter avian assessment is completed for The Project, result will be incorporated.

Table 17 Key

Range	Status
PRB = Permanent Resident Breeding	LC = Least Concern (Conservation-IUCN)
WRN = Winter Resident Non-Breeding	
SRB = Summer Resident Breeding	NT = Near Threatened (Conservation-IUCN)
E =Endemic Species	IUCN = International Union of Conservation of Nature
UWR = Uncommon winter resident	VU = Vulnerable

Table 17 – Avian Species observed within The Project site.

Family	Common Name	Scientific Name	Master Observation	Range/Conservation Status
Laridae	Laughing Gull	*Leucophaeus articilla*	Many	PRB/LC
Pelecanidae	Brown Pelican	*Pelecanus occidentalis*	Few	PRB/LC
Sterninae	Least Tern	*Sternula antillarum*	Single	SRB/LC
Sterninae	Royal Tern	*Thalasseus maxima*	Single	WRN/LC

Range

A species' range can be defined as an area in which a particular species can be found. birds tend to have seasonal ranges while species with restricted ranges spend their entire life on the same island or in the same geographical region.

Permanent Resident Breeding

Permanent Resident Breeding (PRB) species refers to the resident species that live and breed year-round throughout the Lucayan Archipelago. There were two (2) PBR species observed during the assessment. Fifty percent (50%) of species observed was PBR.

Summer Resident Breeding

Summer Resident Breeding (SRB) refers to species that migrate to the Lucayan Archipelago from North America from April through August. One (1) SBR species were observed on site. Approximately twenty-five percent (25%) of the species recorded during the survey were SBR species.

Winter Resident Non-Breeding

Winter Resident Breeding (WRN) refers to species that migrate to the Lucayan Archipelago from North America from September through March. One (1) WRN species was observed on site. Approximately twenty-five percent (25%) of the species recorded during the survey were winter non-breeding residents.

Endemic Species and Subspecies

Endemic species and subspecies are birds that only exist only in the Turks and Caicos Islands. No birds observed on The Project site are endemic to the Turks and Caicos Islands.

Habitat Utilization

Avifauna and other terrestrial fauna were observed utilizing both the sandy shore and soaring over the open waters. Seabirds were observed feeding and flying over the site. No active nest was observed on The Project site.

An additional winter avian field survey would be beneficial to identifying other species that reside within The Project site. Other surveys were repeated over a period and are likely to record other species on the site; these species would utilize the site for perching and feeding.

2.2.2.6 Complete *list of marine reptile species present*

There are six (6) species of marine sea turtle found throughout the Turks and Caicos Islands, including the Loggerhead Turtle (*Caretta caretta*), Green Turtle (*Chelonia mydas*), Leatherback Turtle (*Dermochelys coriacea*), Hawksbill Turtle (*Eretmochelys imbricata*), Kemp's Ridley Turtle (*Lepidochelys kempii*), and Olive Ridley Turtle (*Lepidochelys olivacea*). Of the six (6) species, the Green Turtle (*Chelonia mydas*) and Hawksbill Turtle (*Eretmochelys imbricata*) are observed foraging and nesting in the Turks and Caicos Islands (Eckert & Eckert, 2019).

There were no turtles, turtle nest or turtle tracks observed during the assessment (see Photos 49 – 50). Previous research suggests that sea turtle nesting activity on Providenciales has been on the decline with nesting for these species now largely limited to remote cays (Godley et.al (2004)). Based on the beach conditions observed during the assessment, it is unlikely that the beach in front of The Project site is being used as a nesting site.

The beach contains a considerable number of debris and has temporary beach structures such as chairs and umbrellas (see Photos 51 – 52). Human activity was observed during the early morning and late evening periods which may reduce the suitability of the beach for nesting. Monitoring should be done during construction and post-construction to identify changes in nesting activity on the beach and ensure appropriate measures are implemented if nesting occurs.



Photo 49 – Beach during assessment showing no tracks



Photo 50 – Beach during the assessment showing no tracks



Photo 51 – Debris on the beach



Photo 52 – Beach Furniture

2.2.2.7 Complete list of fish species present

Roving diver visual fish surveys were conducted to form the species list. Fish species observed were identified and given a frequency rating (based on occurrence) of Single (1 individual), Few (2-10 individuals), Many (11-100 individuals), or Abundant (more than 100 individuals). Location where species were observed is listed as nearshore (N) and offshore (O).

Majority of the fish species were around the hard bottom habitat and around the groynes. There were twenty-seven (27) fish species observed during the assessment (see Table 18).

Table 18 – List of Fish Species and the amount observed during assessment

Common Name	Scientific name	Abundance	Location
French Grunt	*Haemulon flavolineatum*	Few	N,O
Caesar Grunt	*Haemulon carbonarium*	Few	N,O
Blue Headed Wrasse	*Thalassoma bifasciatum*	Few	N,M,O
Slippery Dick	*Halichoeres bivittatus*	Many	N,M,O
Ocean Surgeonfish	*Acanthurus bahianus*	Few	N,M.O
Blue Tang	*Acanthurus coeruleus*	Many	N,M,O
Bar Jack	*Caranx ruber*	Many	N,M,O
Great Barracuda	*Sphyraena barracuda*	Few	N
Yellowfin Majorra	*Gerres cinereus*	Many	N,M
Spotted Goat Fish	*Pseudupeneus maculatus*	Few	N
Yellowtail Parrotfish	*Sparisoma rubripinne*	Single	N
Queen Parrotfish	*Scarus vetula*	Few	N
Foureye Butterflyfish	*Chaetodon capistratus*	Few	N,O
Schoolmaster Snapper	*Lutjanus apodus*	Many	N,O
Mahogany Snapper	*Lutjanus mahogoni*	Few	N
Beaugregory	*Stegastes leucostictus*	Many	N,M,O
Sergeant Major	*Abudefduf saxatilis*	Many	N,M,O
Dusty Damselfish	*Stegastes adustus*	Many	N
Silversides	Atherinidae, Clupeidae, Engraulididae Family*	Many	N
Yellowtail Snapper	*Ocyurus chrysurus*	Few	N,O
Spotted Porcupine fish	*Diodon hystrix*	Few	N
Permit	*Trachinotus falcatus*	Single	N
Red Hind	*Epinephelus guttatus*	Single	O
Queen Angelfish	*Holacanthus ciliaris*	Single	O
Squirrelfish	*Holocentrus adscensionis*	Many	O
Longspine Squirrelfish	*Holocentrus adscensionis*	Few	O
Stoplight Parrotfish	*Sparisoma viride*	Many	N, O

` *****The common name Silverside refers to a group of fish from several different families that are usually found together. It is difficult to distinguish any one species when in a large group.



Photo 53 – Great Barracuda (Sphyraena barracuda)

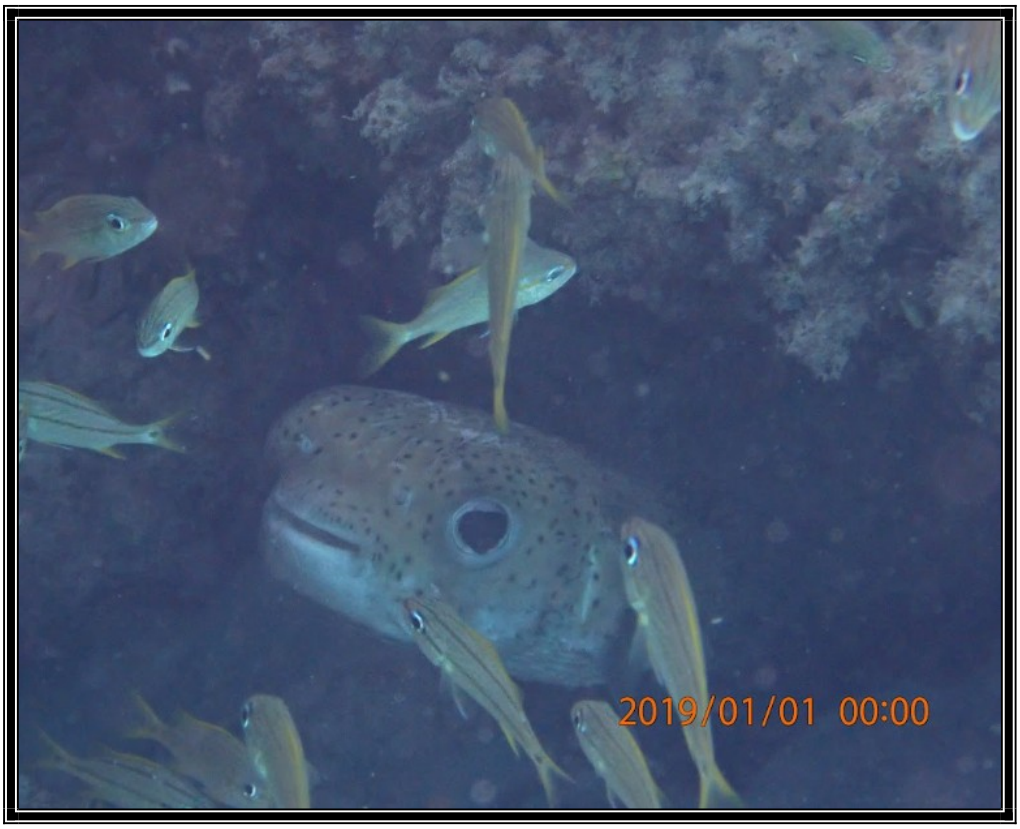


Photo 54 – Porcupine Fish (Diodon hystrix)



Photo 55 – Bluehead Wrasse (Thalassoma bifasciatum)



Photo 56 – Permit (Trachinotus falcatus)



Photo 57 – Yellowtail Snapper (Ocyurus chrysurus)



Photo 58 – French Grunts (Haemulon flavolineatum)



Photo 59 – Bar Jack (Caranx rubber)



Photo 60 – Queen Angelfish (Holacanthus ciliaris)

2.2.2.8 Complete List of Marine Mammal Species Present

There were no marine mammals observed during the assessment.

2.2.2.9 Representative List of Marine Invertebrate Species Present (Other Than Coral)

Fish species observed were identified and given a frequency rating (based on occurrence) of Single (1 individual), Few (2-10 individuals), Many (11-100 individuals), or Abundant (more than 100 individuals). Location where species were observed is listed as nearshore (N) and offshore (O).

There were twenty-one (21) other fauna and epifauna observed during the assessment (see Table 19). Many of the non-coral invertebrate species were observed either on the sea floor, on the groynes or within the hard-bottom habitats.

Table 19 - Names of non-coral invertebrate species observed during assessment

Common Name	Scientific name	Abundance	Location
Caribbean Spiny Lobster	*Panulirus argus*	Few	N
Giant Anemone	*Condylactis gigantean*	Many	N, O
Social Feather Duster	*Bispira brunnea*	Many	N, O
Split Crown Feather Duster	*Anamibaea oerstedi*	Many	N, O
Christmas Tree Worm	*Spirobranchus giganteus*	Many	O
Coral Encrusting Sponge	*Cliona caribbaea*	Many	N, O
Stinker Sponge	*Ircinia felix*	Many	N, O
Black Ball Sponge	*Ircinia strobilina*	Many	N, O
Reef Urchin	*Echinometra viridis*	Few	O
Stocky Cerith		Many	N, O
Christmas Tree Hydroid	*Pennaria disticha*	Single	N
Bearded Fireworm	*Hermodice carunculata*	Single	O
N/A	*Erylus formosus*	Few	O
Brown Variable Sponge	*Cliona varians*	Few	O
Erect Rope Sponge	*Amphimedon nodosa*	Few	O
Red Boring Sponge	*Cliothosa delitrix*	Few	O
N/A	*Niphates amorpha*	Many	O
Overgrowing Mat Tunicate	*Tridemnum solidum*	Few	O
Row Rope Pore Sponge	*Aplysina cauliformis*	Many	O
Yellow Branchlet Sponge	*Aplysina insularis*	Many	O
CZOO	*Cliona zooxanthellate*	Few	O

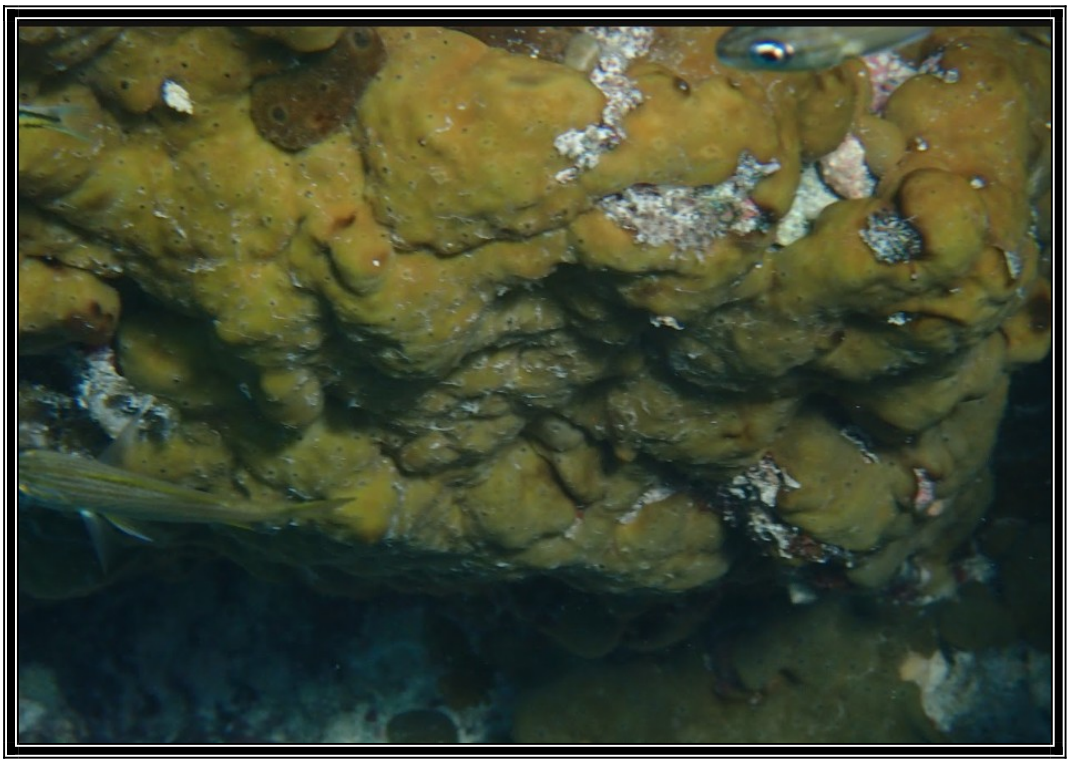


Photo 61 – Coral Encrusting Sponge (Cliona caribbaea)



Photo 62 – Social Feather Duster Worms (Bispira brunnea)



Photo 63 – Christmas Tree Hydroid (Pennaria disticha)



Photo 64 – Black Ball Sponge (Ircinia strobilina

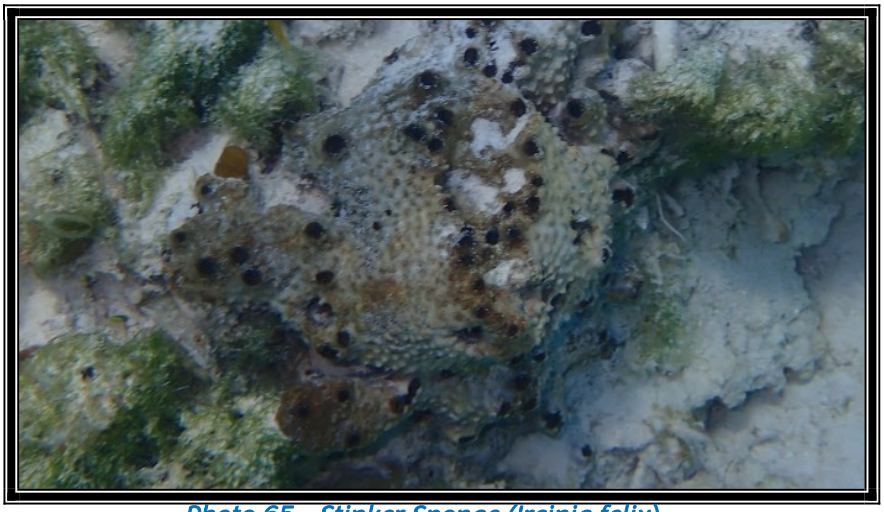


Photo 65 – Stinker Sponge (Ircinia felix)



Photo 66 – Bearded Fireworm (Hermodice carunculata)

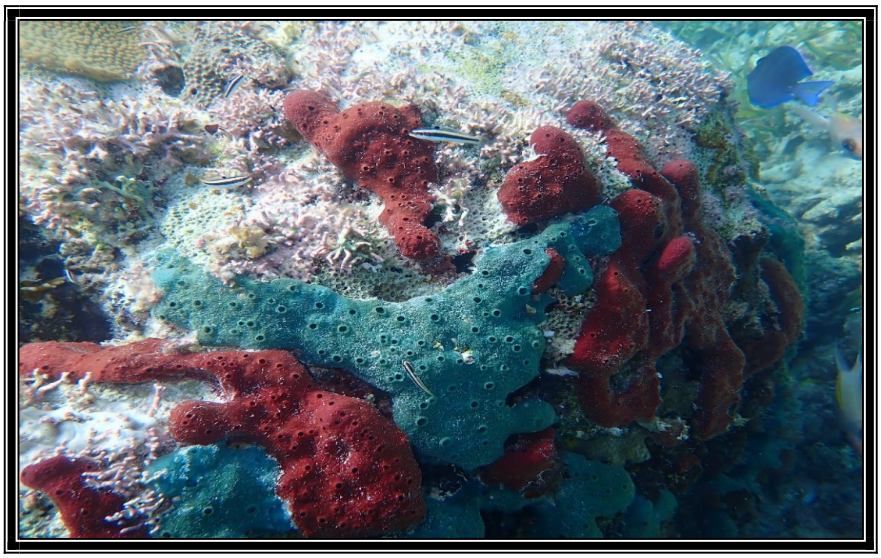


Photo 67 – Niphates amorpha and Erect Rope Sponge (Amphimedon nodosa)



Photo 68 – Overgrowing Mat Tunicate (Tridemnum solidum)



Photo 69 Giant Sea Anemone (Condylactis gigantean)

2.2.2.10 Description of Sargassum Situation in the Area

There were sparse fresh or dried mounds of Sargassum spp. observed during field studies. 2026 has been characterized by high regional Sargassum abundance, with the Caribbean Sea experiencing recorded high abundance in June 2026 (NASA Earth Observatory, 2026; University of South Florida, 2026). Although Sargassum levels are high within the Caribbean the effects are varied among individual coastlines.

Due to the offshore reefs, and the predominantly easterly winds, Leeward Beach is relatively protected from waves and currents that push Sargassum inshore (Turks and Caicos Islands Government, 2025).

As Sargassum is transported and redistributed by winds, and waves, the absence or limited presence of Sargassum at the time of the assessment does not preclude future accumulation. NOAA's Atlantic Oceanographic and Meteorological Laboratory's Sargassum Inundation Risk tool (SIR) outlines current conditions of sargassum density at sea and identifies beaches and other coastal areas that could potentially be affected in days or weeks. The map below outlines the risk of inundations and classifies the risk as low (blue), warning (yellow), medium (orange), and high (red) (see Figure 13). Based on the map, Turks and Caicos is at a high risk for Sargassum inundation, therefore continued observation of the shoreline is therefore recommended.

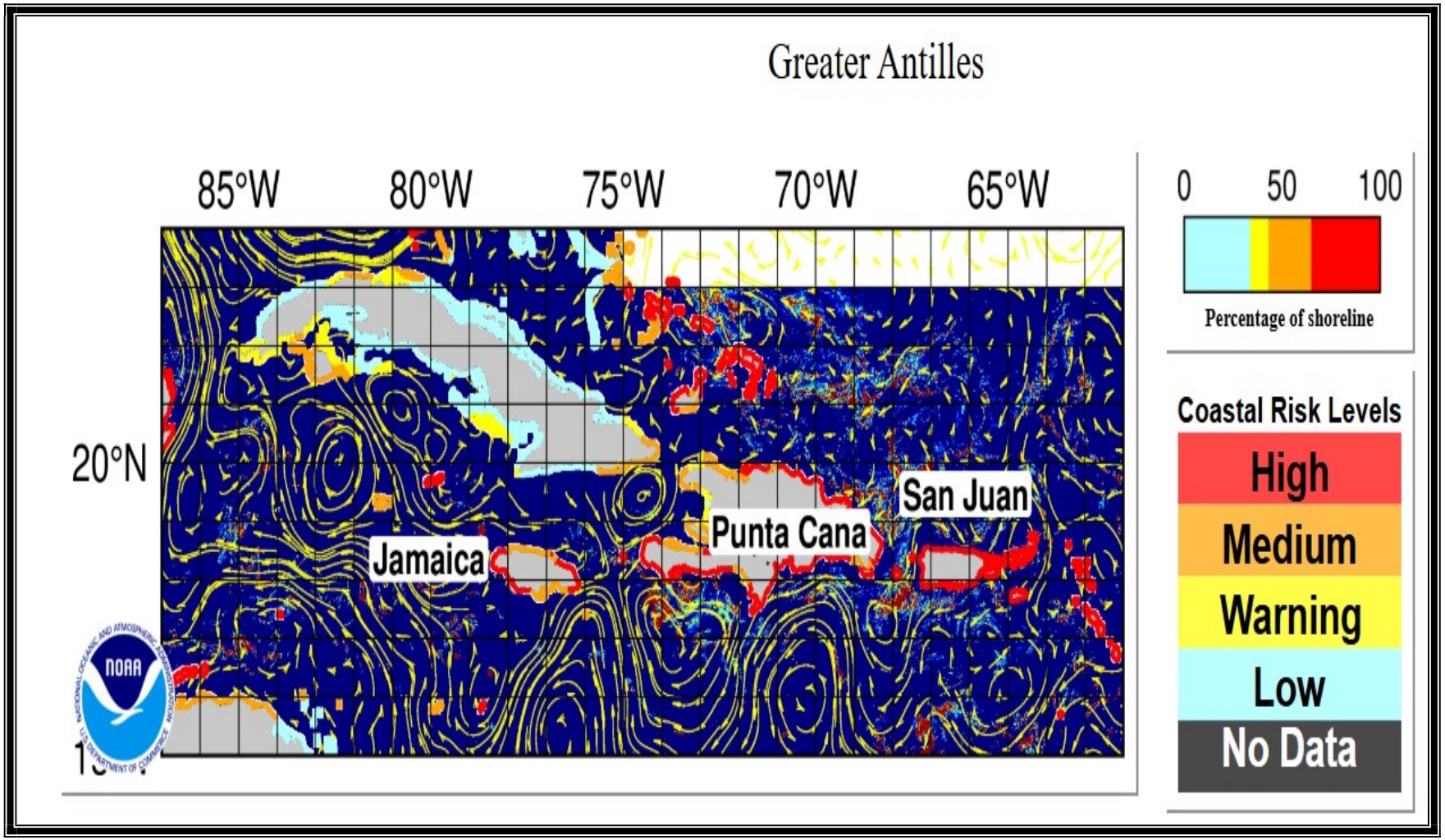


Figure 13 – NOAA's SIR for the Greater Antilles

Discussion

The scope of works for The Project is the construction of a resort inclusive of hotels, sports courts, outdoor terrace, wedding gazebo, beach bar, restaurants, pools, and pool bar, parking, private residence, sales centre, restrooms and back of house utility infrastructure. Currently there are no marine works schedules for The Project.

The descriptions of benthic habitats observed are a fair representation of biodiversity on the site. While it is likely that additional species would be recorded with further field studies, this is not likely to impact the results of this study for the purposes it is intended.

The benthic habitats appear to be healthy and consist of typical flora and fauna populations for the area. There was debris such as aluminum cans, glass bottle, and plastic observed within the marine environment (see Photo 70 – 71). This was to be expected due to the proximity to shore and the high level of human activity.

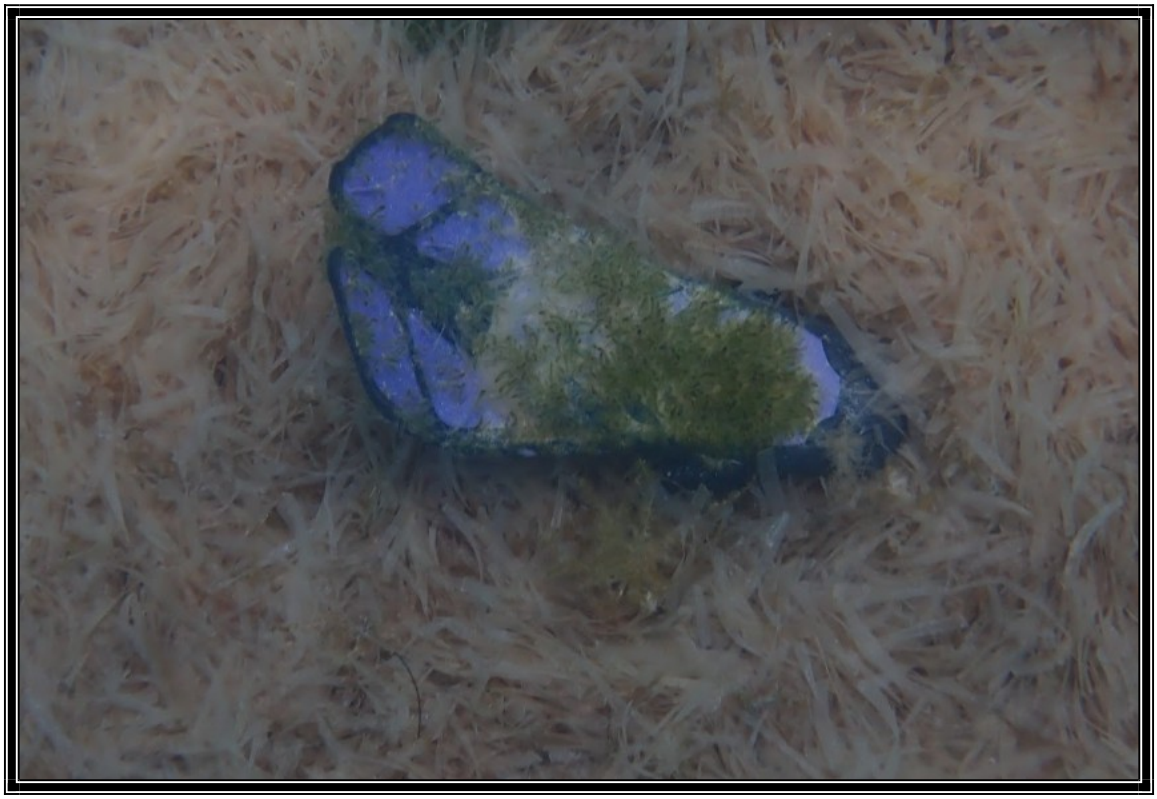


Photo 70 – Discarded fin



Photo 71 – Aluminum can

Benthic Description

Nearshore Environment

The nearshore environment consisted of predominantly bare sand that transitions into patches of sandy bottom with macroalgae and rubble and hard bottom. There were three (3) groynes located within the nearshore environments consisting of boulders stacked together.

Offshore Environment

As the survey progressed from the nearshore environment to the offshore environment, the benthic habitat consists of bare sand with patches of sandy bottom with macroalgae and rubble. On the northern side of the assessed area, the benthic habitat transitions from bare sand to seagrass. On the western side of the assessed area, the benthic habitat transitions from bare sand to hard bottom with seagrass.

Fish Diversity

Fish diversity and abundance was moderate. Majority of the fish species were observed within the hard bottom habitats and around the groynes. This was to be expected as the crevices and cavities provide shelter for these species. There were no vulnerable,

threatened, near threatened or endangered fish species observed during the assessment. There were no invasive fish species observed during the assessment.

Other Fauna and Epifauna

Non-coral invertebrate diversity and abundance was moderate across the entire site. Majority of the non-coral invertebrates were observed in the hard bottom with seagrass habitat and within crevices of the groynes; in particular, the fully submerged groyne on the south-western end of the nearshore environment. The dominant non-coral fauna and epifauna observed included Black Ball Sponge (*Ircinia strobilina*) and Giant Sea Anemone (*Condylactis gigantea*). There were no endangered non-coral fauna and epifauna observed on the site.

Seagrass

Seagrass was observed on the northern side of the offshore environment. Seagrass was often observed in sparse to moderate density and contained epifauna consistent with what would be expected of a healthy seagrass ecosystem. Turtle grass *(Thalassia testudinum*) was the only seagrass species observed during the assessment.

As there are no marine works scheduled for The Project; therefore, seagrass is not anticipated to be impacted.

Corals

Corals were observed along the hard bottom habitats and within the groynes. Highest coral abundance and diversity is located within the hard bottom with seagrass habitat and well as within the fully submerged groyne in the southwestern section of the nearshore environment.

Overall, corals appeared to be in good condition. Corals exhibited no recent mortality, although several colonies exhibited overgrowth by macroalgae and sponges, indicating areas of old mortality where previously dead coral skeleton were colonized by other biomass. There were no signs of any coral diseases, including Stony Coral Tissue Loss Disease (SCTLD) and there were no signs of bleaching. Project scope of works will not impact any corals in the marine habitat.

2.3 Physical Environmental Baseline aesthetics

2.3.1 Topography of the area

The topography of the project site has a general elevation of less than fifteen-(15) feet above mean sea level and dips seaward from the landside. Localized high points occur randomly across the project site and appear to have been created during past earth moving exercises, namely land clearing and access road building. The vegetation line runs east to west along an established beach dune ridge where the average elevation is approximately twelve-(12) feet above mean sea level. The elevation drops from approximately twelve-(12) feet to one-(1) foot across a 75-feet wide beach face. The landward areas of the project site are relatively flat with a low relief stretching from the coastal dune ridge to a primary road network where the average elevation is approximately eight-(8) feet above mean sea level.

The June 2026 UAV survey provides detailed coverage of surface elevations across the development site, beach and backshore. The photogrammetrically derived point-cloud dataset contains approximately 109,600 elevation points with a nominal horizontal spacing of about 1m. Within the processed point-cloud dataset, recorded surface elevations range from approximately 1.2m to 3.5m above MSL, with a median elevation of approximately 2.7m MSL. Approximately 90% of the recorded elevations fall between 1.9m and 3.1m above MSL.

The photogrammetric survey produces a digital surface model representing the upper surface visible in the UAV imagery. Therefore, the mapped surface represents exposed ground in open areas and the upper visible surface in vegetated areas. Vegetated areas are excluded from quantitative ground-elevation interpretation. Across the open beach, roads, cleared areas and other surfaces with little vegetation, the mapped surface closely represents ground elevation. Within densely vegetated areas, the mapped elevation may represent the vegetation canopy rather than the underlying terrain. Vegetated areas are therefore excluded from quantitative interpretation of ground levels.

Figure 14 shows the distribution of mapped surface elevations across the development site and adjoining coastal area. The elevation surface provides the basis for interpreting the open beach-backshore transition, identifying low-lying non-vegetated areas and assessing the relationship between the shoreline and the proposed development footprint.



Figure 14 – Drone-derived ground elevations across the development site, beach and backshore, June 2026, with elevations shown in metres relative to MSL

The mapped elevations show a generally low-lying coastal site, with lower ground concentrated along the active beach, immediate backshore and several internal depressions. Higher elevations occur mainly along existing roads, developed areas and local raised surfaces within the property.

The beach backshore transition varies along the frontage. Some sections rise gradually landward from the shoreline, while others show a more distinct change in elevation, possible scarping. This variation is relevant to the later assessment of wave runup, storm-water levels and possible coastal-flood pathways.

2.3.2 Bathymetry for the site shoreline

Figure 15 summarizes the spatial coverage of the topographic, beach-profile and bathymetric datasets assembled for the baseline assessment. The upper panel shows

The project-specific surveys were completed between May and June 2026, comprising the UAV survey across the development site and backshore, the shore-normal beach profile survey across the beach and shallow nearshore, and the bathymetric survey extending offshore from the project frontage.

Supplementary topographic and bathymetric data from our in-house database are also included where they extend coverage beyond the survey limits of this investigation. These datasets provide wider coastal and offshore context and support construction of the broader coastal elevation modelling framework. They are not used in place of the project-specific surveys for detailed interpretation of the beach and immediate nearshore area.

The lower panel shows the combined land and seabed elevation coverage. Together, the datasets provide an elevation framework extending from the development site and backshore, across the beach and foreshore, and into the adjoining nearshore and offshore areas. The May–June 2026 surveys provide the primary basis for the site-scale assessment. The UAV survey defines the development site, beach and backshore elevations; the shore-normal profiles define the cross-shore geometry of the beach and shallow nearshore; and the bathymetric survey defines the seabed immediately. offshore datasets are presented in the WGS 84 / UTM Zone 18N coordinate system. The combined land and seabed elevations were referenced to Mean Sea Level.

Table 20 – Topographic and bathymetric datasets used in the baseline assessment

Dataset	Method	Date	Source	Resolution or spacing	Coverage and use
UAV topographic survey	UAV photogrammetry; photogrammetrically derived point cloud and digital surface model	June 2026	Project survey	Nominal horizontal spacing of approximately 1m; approximately 109,600 elevation points	Provides surface-elevation coverage across the development site, beach and backshore. Used for interpretation of the open beach–backshore transition and the relationship between the shoreline and topography.
Beach and shallow-nearshore profile survey	Shore-normal profile survey; field acquisition method and equipment to be confirmed by the surveyor	4 June 2026	Project survey	Fifty-three retained profiles across approximately 525m of frontage	Defines the cross-shore geometry of the upper beach, foreshore and shallow nearshore. Used to calculate profile slopes, contour widths and depths, and to evaluate differences between the southern, central and northern sectors.
Bathymetric survey	GNSS-positioned acoustic sounding using an Airmar TM165HW transducer and Simrad GO9 XSE; RTK-based water-level correction to MSL	Field date to be confirmed; corrected dataset issued 24 June 2026	Kester Alexander / CMLS Construction Services	Approximately 3m sounding interval along survey lines, generally 25–30m line spacing offshore	Defines seabed elevations and nearshore geometry immediately offshore of the project frontage. Post-line and depth data were recorded synchronously in SL2 format and converted to DAT/CSV for processing. A total of 3,846 soundings was retained within the assessed frontage.
Supplementary topographic and bathymetric datasets	Compiled previous-project and regional datasets, including previous measured bathymetry, EOMAP, TCARTA, existing MIKE 21 surfaces and GEBCO	Various	Smith Warner in-house archive and regional data sources	Variable by source	Extends the elevation framework beyond the 2026 survey limits to provide wider coastal, shelf, offshore and deep-water coverage for construction of the numerical model domain. Not used in place of the project-specific surveys for detailed site-scale interpretation.

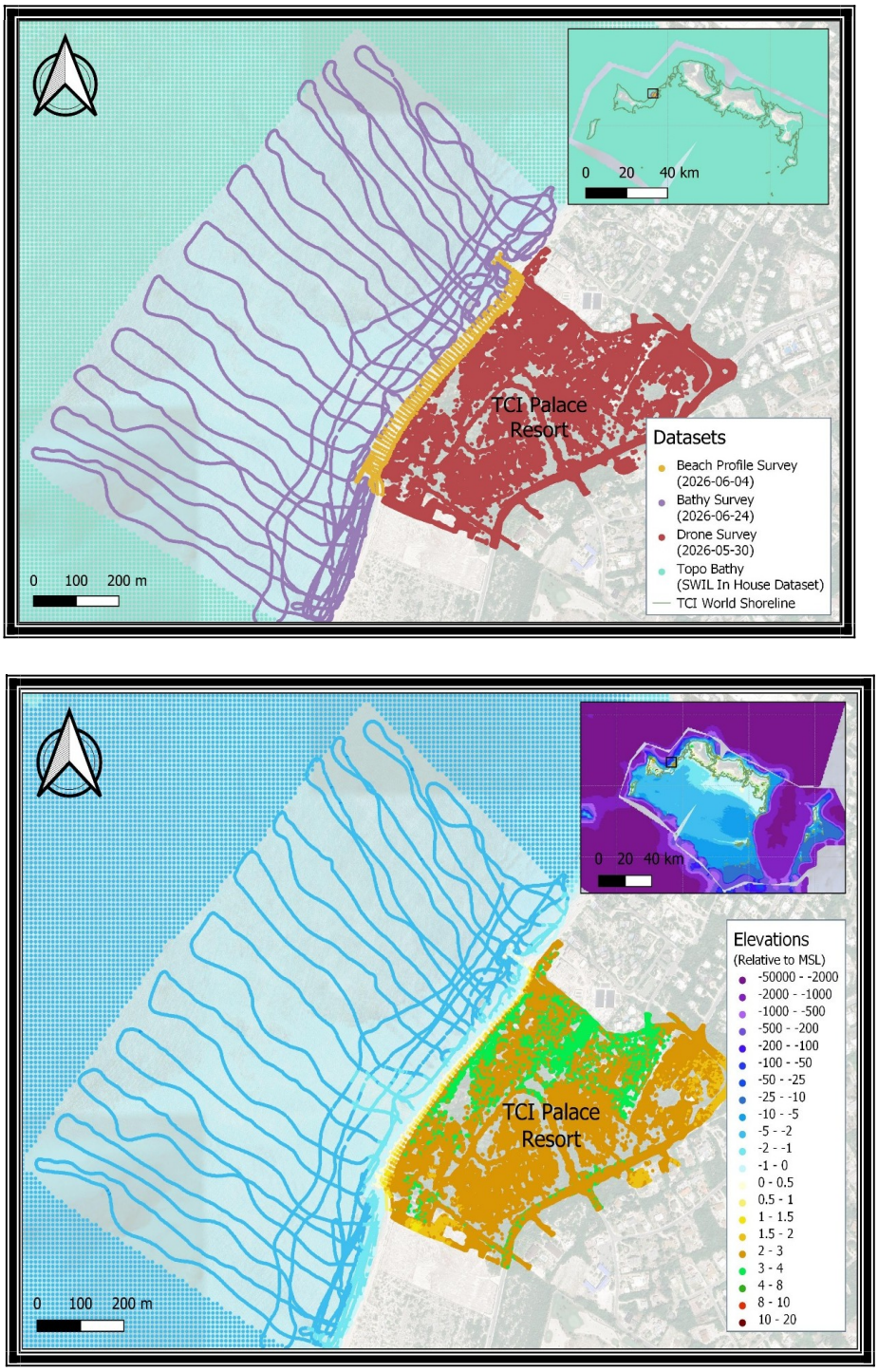


Figure 15 – Topographic, beach-profile and bathymetric data assembled for the baseline assessment: (A) coverage of the May–June 2026 project surveys and supplementary SWI in-house datasets; and (B) combined land and seabed elevations relative to MSL

Bathymetry Survey

The project bathymetric survey (Figure 16-17) was collected using a GNSS-positioned acoustic depth-sounding system. Horizontal positioning was provided by a real-time-corrected, multi-constellation GNSS receiver using GPS, GLONASS, BeiDou and Galileo signals, with a reported horizontal accuracy of approximately 0.1m. Water depths were measured using an Airmar TM165HW acoustic transducer operating over a frequency range of 150-250 kHz and connected to a Simrad GO9 XSE navigation and sounding unit. Position and depth data were recorded synchronously in SL2 format and subsequently converted to DAT/CSV format for processing.

Water-level corrections were applied to reference the soundings to MSL. The correction was based on Trimble RTK observations collected at the beginning and end of the survey and tied to the onshore survey monument, which has a known offset relative to MSL. The supplied survey dataset contains approximately 10,200 soundings, with a typical sounding interval of about 3m along the survey lines. Survey-line spacing is generally about 25-30m offshore, with closer and more variable coverage near the shoreline and existing coastal structures.

For the site-scale assessment, the bathymetric data were filtered using the same southern and northern limits applied to the beach-profile analysis. A total of 3,846 soundings fall within approximately 525m project frontage. The processed soundings are presented in WGS84-UTM Zone 18N, with elevations referenced to MSL.

Within the project boundaries, the surveyed seabed elevations range from approximately −0.25m to −5.5m MSL. Most of the retained soundings are between approximately −2.1m and −3.2m MSL. The full range includes deeper local soundings near the outer limits of the survey and should not be taken as the typical depth across the frontage. The bathymetry shows a marked difference between the southern frontage and the central and northern frontage. The seabed deepens more gradually offshore in the southern sector. In the central and northern sectors, the seabed reaches approximately −2m and −3m MSL considerably closer to the shoreline.

At approximately 50m offshore, the median seabed elevation is about −1.7m MSL in the southern sector, compared with about −2.3m in the central sector and −2.5m in the northern sector. At approximately 100m offshore, the corresponding median elevations are about −2.2m, −2.9m and −3.1m MSL.

Beyond the initial nearshore slope, much of the central and northern survey area forms a relatively shallow offshore platform at approximately −3.0m to −3.5m MSL. The southern seabed continues to deepen more gradually across a broader horizontal distance. Table 21 summarizes the bathymetric conditions along the shoreline.

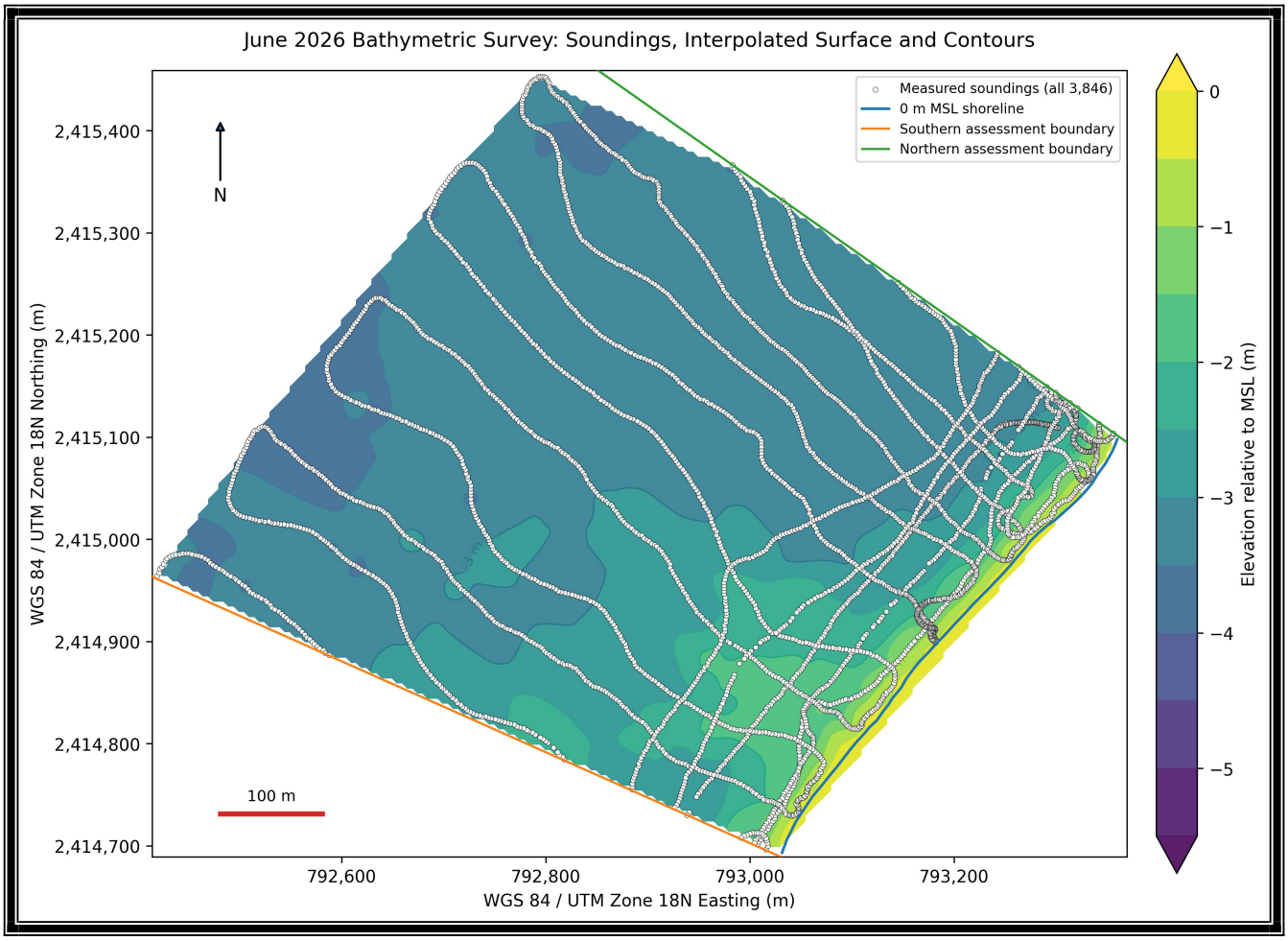


Figure 16 – June 2026 bathymetric survey showing the interpolated seabed surface and contours, with measured sounding locations overlaid, with elevations shown in metres relative to MSL

Table 21 – Summary of bathymetric conditions by frontage sector

Frontage sector	Soundings	Median elevation at 50m offshore	Median elevation at 100m offshore	Median elevation at 200m offshore	Approximate distance to -2m MSL	Approximate distance to -3m MSL
Southern	1,240	−1.74m	−2.22m	−2.75m	92m	331m
Central	1,189	−2.30m	−2.87m	−2.89m	33m	122m
Northern	1,417	−2.54m	−3.10m	−3.19m	34m	83m

Note: Sector values are derived from median elevations within cross-shore distance bands and describe the general seabed form. Exact contour distances vary locally along the frontage.

The combined profiles (Figure 17) confirm that the southern sector has the broadest and gentlest coastal profile. The central and northern sectors have steeper foreshores and a more rapid transition to water depths of approximately 2–3 m. Farther offshore, the profiles become flatter across the shallow shelf.

These differences will influence the location and degree of depth-induced wave transformation, wave breaking and nearshore current development. Their effect on shoreline behaviour cannot be determined from the bathymetric geometry alone and will be quantified during the existing-condition coastal-process modelling.

The June 2026 topography, beach profiles and bathymetry will be combined to construct the existing-condition model. That model will establish the baseline wave, water-level, current and sediment-transport conditions along the frontage. Shoreline-protection and enhancement concepts will subsequently be introduced into the same modelling framework so that their performance and potential effects can be compared with the existing condition.

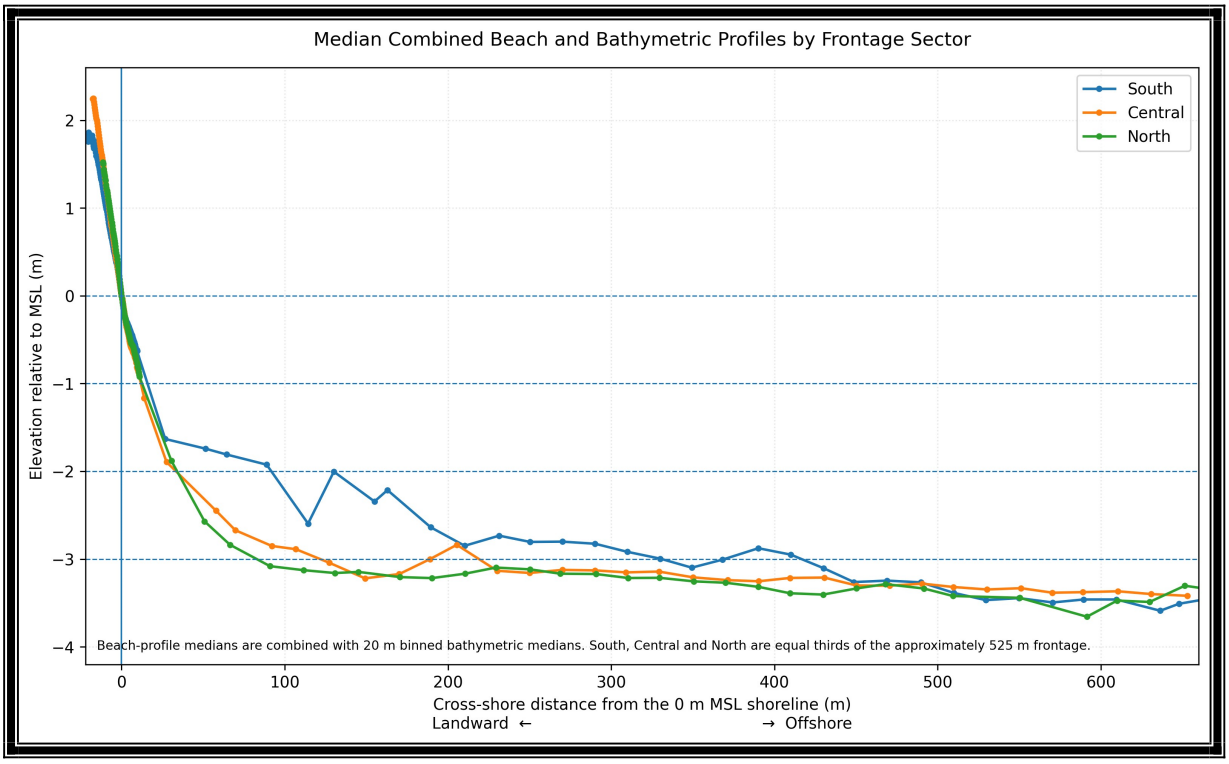


Figure 17 – Median combined beach and bathymetric profiles for the southern, central and northern thirds of the project frontage, aligned at the Om MSL shoreline

2.3.3 Geology

Carbonate formation dominates the geology of the project site and the immediate and surrounding areas. Lithological descriptions of the subsurface geology to an average depth of 12 feet below ground level revealed a thin One-91) foot layer of compacted Holocene sand that transition to loosely compacted soil layer (6") and the sat above a well compacted and well cemented Limestone formation, Figure 18. Paleo soil zones were not observed in the excavated test pit. A soil penetrometer was used to measure soil bearing capacity at the test pit location. The average measured soil bearing capacity was approximately 1500 kN/m^2.

2.3.4 Hydrogeology

The hydrogeology of the project site is characteristic of a classical Ghybeh-Hertzberg lens that is situated within the upper Lucayan formation. Recharge to the freshwater lens is derived from local rainfall. A thin freshwater lens approximately 8.0 feet thick was measured in the test pits. The average depth to the water table was measured at approximately 64 inches below land surface. The depths to the water table in each test pit suggested that the direction of groundwater flow, at the time of measurements, was

from inland outward towards the coastline. Groundwater flow is generally outward towards the coastline and is subjected to a swirling motion that is directly impacted by

the semi-diurnal tides where two high tide and two low tide episodes occur over a 1-day period. Karst geology, surface water and fluvial features were not observed within the project site or the immediate and surrounding areas.



Figure 18 - Subsurface Lithology

2.3.5 Sediment analysis

This section presents the grain-size characteristics of the existing beach and shallow nearshore sediments along the project frontage. The results provide a baseline for identifying spatial variation in the native sediment, supporting subsequent interpretation of sediment transport, and screening the compatibility of any potential beach widening material.

Six sediment samples, S1 to S6, were collected at three paired locations distributed along the project frontage (Figure 19). At each location, one sample was collected from the upper beach near the high-water mark, and a corresponding sample was collected from the shallow nearshore, immediately seaward of the dry beach. This paired arrangement provides an initial indication of both alongshore variation and cross-shore differences between the upper-beach and nearshore sediment.



Figure 19 - Paired upper-beach and shallow-nearshore sediment sample locations S1 to S6 along the project frontage

The samples were submitted to GeoLabs for sieve analysis. The testing determined the full particle-size distribution of each sample, including the proportions of gravel-sized material, sand and fines, and the characteristic grain sizes D_{10}, D_{30}, D_{50}, D_{60} and D_{100}. D_{50} is the median grain size: 50% of the sample by weight is finer, and 50% is coarser.

The measured D_{50} values range from 0.14mm to 0.72mm, indicating that the tested sediment varies from fine sand to coarse sand, with local gravel-sized material. Figure compares the D_{50} values, while Table 22 summarises the laboratory results. The full GeoLabs grain-size distribution curves are included a supporting Appendix. GeoLabs

reported six sieve analyses for samples S1–S6 and provided the characteristic grain-size values used in this section.

All six samples were classified as poorly graded sand (SP). In engineering terms, "poorly graded" means that the material has a relatively narrow range of grain sizes. It does not mean that the sediment is poor quality. The classification is consistent with sediment that has undergone natural sorting by wave action and, on the dry beach, wind action.
Figure 20 compares the median grain size of the three paired upper-beach and shallow-nearshore sampling locations. The samples are grouped by their position along the south, central and north frontage and are shown against standard sediment-size classes. This allows both alongshore variation and differences within each cross-shore pair to be seen directly.

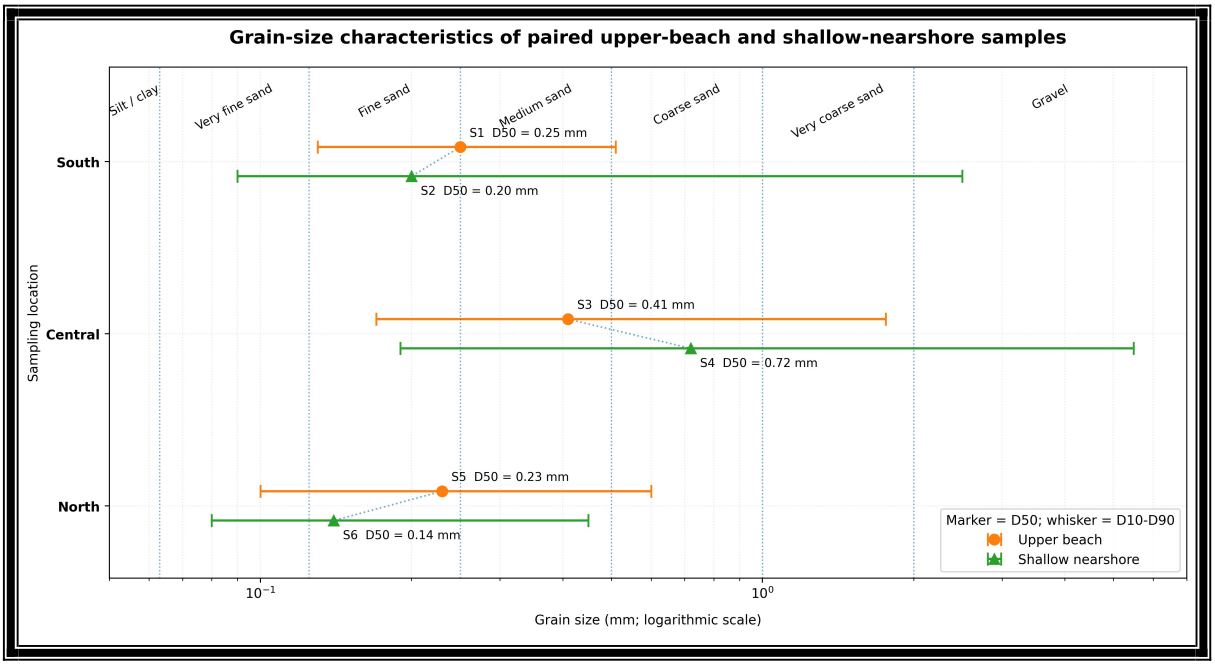


Figure 20 Grain-size characteristics of paired upper-beach and shallow-nearshore sediment samples (Markers show D_{50} and horizontal whiskers show the D_{10}–D_{90} range. D_{10} and D_{50} are tabulated GeoLabs results; D_{90} values are approximate and were read from the grain-size distribution curves.)

All six median grain sizes fall within the sand-size range. Samples S2, S5 and S6 are within the fine-sand range, while S1 lies at the boundary between fine and medium sand. Sample S3 is medium sand, and S4 is coarse sand. The central pair is distinctly coarser than the southern and northern pairs, particularly the shallow-nearshore sample S4, which has a D_{50} of 0.72mm.

The paired samples show local variation in cross-shore sediment sorting. At the southern and northern locations, the shallow-nearshore samples are finer than their corresponding upper-beach samples. At the central location, however, shallow-nearshore Sample S4 is substantially coarser than upper-beach Sample S3.

Sample S4 has a D_{50} of 0.72mm and contains approximately 11% gravel-sized material. Its finer fraction is broadly comparable with Sample S3, while the upper part of its grain-size distribution is considerably coarser. This pattern is consistent with background beach sand mixed with a local concentration of coarse sand and shell or other carbonate fragments.

Table 22 - Sediment grain-size results

Sample	D_{50} (mm)	Sand	Gravel	Silt	Interpretation
S1	0.25	98.9%	0.0%	1.1%	Fine-to-medium sand boundary; very low silt content.
S2	0.20	90.9%	5.6%	3.5%	Fine sand with minor gravel-sized material and low silt content.
S3	0.41	97.4%	1.7%	0.9%	Medium sand with very low silt content.
S4	0.72	87.8%	11.4%	0.9%	Coarse sand with the highest gravel-sized fraction; represents a local coarse-sediment area.
S5	0.23	98.8%	0.0%	1.2%	Fine sand with very low silt content.
S6	0.14	94.6%	1.8%	3.6%	Fine sand with the highest reported silt content, although still strongly sand dominated.

Source: GeoLabs, Sieve Analysis Tests – Palace Resorts, Turks and Caicos, 6 June 2026

The laboratory results confirm that all six samples are predominantly sand, with relatively low silt content. Samples S1, S2, S5 and S6 are fine sand or lie close to the fine-to-medium sand boundary, with D_{50} values between 0.14mm and 0.25mm. Sample S3 is medium sand with a D_{50} of 0.41mm, while Sample S4 is coarse sand with a D_{50} of 0.72mm and the highest gravel-sized fraction.

The central pair, S3 and S4, is distinctly coarser than the southern and northern pairs. The paired results do not show one consistent cross-shore sorting pattern: the shallow-nearshore samples are finer than the upper-beach samples at the southern and northern locations, but the central shallow-nearshore sample is substantially coarser than its paired upper-beach sample.

2.3.6 Climate and meteorology

The hydrogeological environment of Providenciales can be described as a semi-arid tropical region, Figure 21. The climate conditions are characteristically long hot summers contrast with relatively cool winter seasons. On average rainfall is relatively low (20 inches per year) and occurs mostly from August to December.

Climate and meteorological data for the Turks and Caicos Islands are not directly monitored in real-time, instead, data is extrapolated from the southeastern Bahamas region that is monitored by the Bahamas Meteorological Department. Limited data suggests that the wet season extends from May to October and the dry season extends from November to April of each year. The hurricane season that extends from June through November directly impacts the rainfall amount that are derived from passing tropical depressions, tropical storms and hurricanes. The summer season is characterized by predominant southeasterly winds and rainfall accumulation affected by intense events associated with the passage of tropical waves, tropical storms and hurricanes.

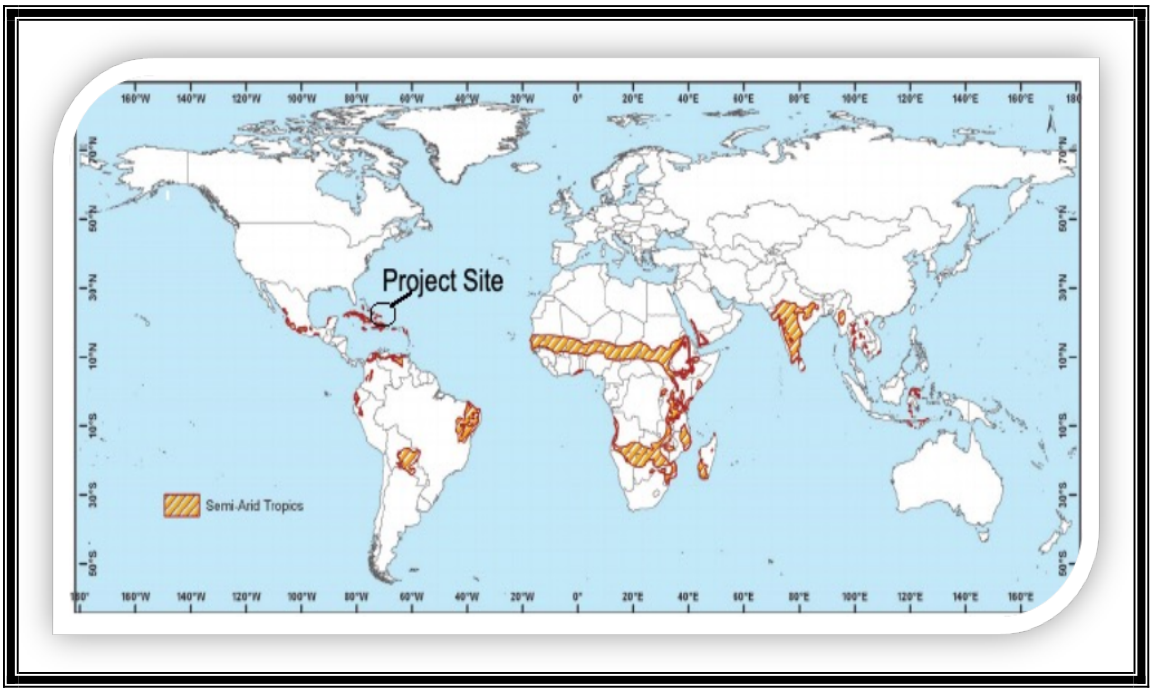


Figure 21 – Semi-arid Tropical Région
(Source:http://www.fao.org/sd/EIdirect/climate/EIspOOO2.htm)

Historical meteorological data from the southeast Bahamas and Grand Turk **(Bahamas Meteorological Department – Bahamas Government)** suggests an average annual

Around 28 inches with the greatest amount of rainfall occurring during the months of May and October each year. Temperatures average 29°C (85°F) in summer and 21°C (70°F) in winter. Maximum and minimum temperatures seldom exceed 32°C (90°F) or 16°C (60°F). Historical model data ***(source:Meteoblue)*** from 2009 to 2021 is illustrated below in Figure 22.

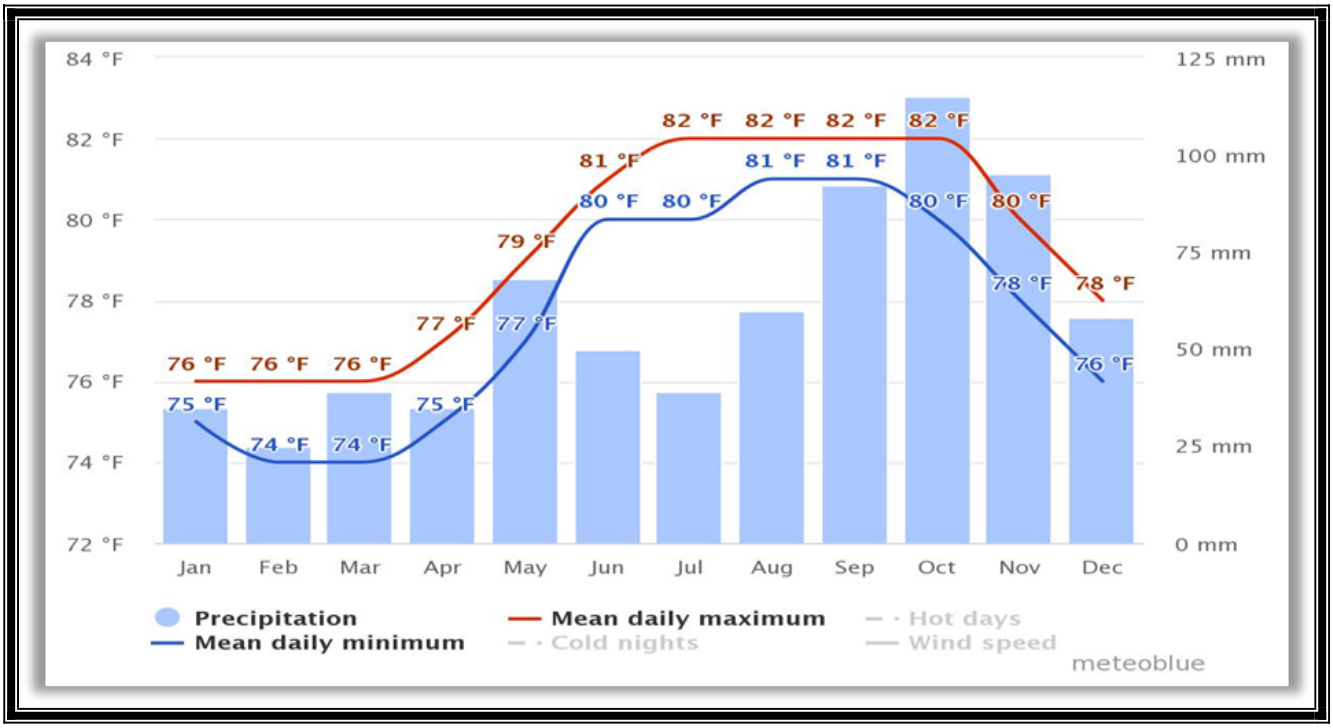


Figure 22 – Historical Modelled Climate Data for Providenciales, TCI (2009-2021)

2.4 Baseline aesthetics

Aesthetics is a branch of philosophy dealing with the nature of beauty, art, and taste and with creation and appreciation of beauty. The aesthetic value of an area is based on the visual character and quality of the natural and human-made features of the area.

The 44.5-acres site for the Moon Palace, The Grand and Le Blanc dual-resort development occupies a unique transitional zone on the northeastern tip of Providenciales. It sits directly where the energetic, commercial tourism hub of Grace Bay Beach converges with the quiet, low-profile residential Leeward community.

The baseline aesthetics and environmental characteristics of this specific surrounding area are defined by a distinct contrast between high-end commercial tourism and private gated community neighborhood design.

The primary visual anchor of the site is its immediate coastal environment, which transitions from wide tourist beaches to a quieter, more vulnerable shoreline.

Pristine Waters, the ocean features the signature vivid turquoise and translucent sapphire hues of the Princess Alexandra National Marine Park, backed by soft, powder-white sand.

2.4.1 Existing horizon line of subject area from the road

The existing horizon line of the Moon Palace resort development site in Grace Bay, Leeward, Providenciales. Transitions between a low-lying coastal vegetation line and an open ocean horizon. The site is a 44.5-acres undeveloped coastal parcel on Grace Bay Beach between Coral House and the Leeward Gate, presents a clear, unobstructed boundary where the flat sea meets the open sky, as dictated by the topography of the Caicos Islands.

The landscape of this specific region features uniformly flat coastlines, minimal coastal elevation, and low-lying dune vegetation, the visible horizon line maintains a highly consistent baseline across all requested viewing angles. Standing on the parallel access, the view sits at a low elevation. This places the visual horizon directly behind the immedat4e coastal dune system, palms, and nearby residential or resort structures rather than revealing the open ocean meeting the sky.



Photo 72 – Beach Access Road



Photo 73 – Beach Access

The 200 meters horizon line out to sea is completed unobstructed, wide, and flat, stretching across a full 180-degree view. From the beach marine vantage point looking out towards the open water or back towards the low-lying coast, there are no geographical barriers, hills or tall landmasses to interrupt the marine horizon line, only the occasional watersports boats.

The 500 meters northeast horizon line consists of open marine boundaries shifting into shallow flats near Leeward Chanell and Little Water Cay. Here, the view spans across the turquoise waters of the Leeward Settlement coastal waters.



Photo 74 – Moon Palace Site Beach



Photo 75 – Boating activity in marine environment

2.4.2 Review of existing architectural vernacular developments

The architectural vernacular with a 1 km radius from the proposed Moon Palace resort development 44.5-acres site on Grace Bay Beach, Leeward, Providenciales is defined by low-to-mid-rise scale constraints, a blend of Caribbean-Colonial style elements, and a rapidly emerging modernist minimalist aesthetic.

Developments within this 1 km buffer zone are highly structured, orderly, and dictated by strict Homeowners Association (HOA) guidelines and building codes. The architectural character splits into three primary typologies:

- Caribbean Colonial & Ango-Caribbean, comprising older multi-family condo resorts and transitional estates on the western periphery of the 1 km zone utilize a classic regional vernacular, featuring, steeply pitched, hipped rooflines, frequently finished with terracotta clay tiles or standing-seam aluminum panels. Facades are pastel stucco finishes (creams, light yellow, soft pinks) balanced by white trim. Functional detailing includes decorative wooden hurricane shutters,
-

deep-set wraparound verandas, covered porches, and structural elements designed to maximize shade and hardness prevailing trade winds.

- Contemporary Tropical Minimalism Architecture which is the dominant architectural theme for new low-density development, private oceanfront estates, and luxury canal villas that lean toward sleek, box-form modernism. The geometry is of sharp horizontal planes, flat roofs configured as viewing decks, and dramatic cantilevered overhanging concrete slabs designed for passive solar shading. Materials include exposed raw micro-concrete, pristine white plaster, floor-to-ceiling performance impact glass, and warm accents of sustainable timber or composite cladding,

- Canal-Front Nautical Vernacular which covers development within the Planned Leeward Canal Network where homes feature specialized infrastructure integrated into their footprint. These structures include private wooden docks, boat lifts, and reinforced concrete seawalls built neatly into the structural landscaping. Properties are heavily landscaped

2.4.3 Review of current beach use

To get a realistic understanding of the beach use dynamics during operation of the proposed development, it is important to use the existing circumstances of a similar resort currently operational on Grace Bay Beach, Providenciales; namely *Beaches* Turks and Caicos. *Beaches* Turks and Caicos has 859 rooms, including the recently constructed Treasure Beach Villas (Beaches Turks and Caicos Management, 27th August 2026) which sprawls over approximately 93 acres of land. Buildings on the *Beaches* site are scattered, with building heights ranging from

Moon Palace The Grand, Turks and Caicos is a US$1.2 billion luxury mega-resort, inclusive of a bar, restaurants, and recreational entertainment. It is proposed to have 792 rooms and suites (family focused) and an adult ultra luxury sanctuary with 235 bedrooms; all the is proposed on 44.5-acres of land. The building height for this luxury all-inclusive resort is 12 floors. The site for the Moon Palace Resort has a significantly greater linear frontage than the *Beaches* Resort, measuring 4,844 linear feet. This is an enormously longer linear feet frontage, at a whopping 1,785 linear feet greater than that of the *Beaches* Resort.

During the peak travel season, *Beaches* Turks & Caicos operates at maximum capacity, hosting roughly 2,000 to 2,500 guests at any given time. A recent national Visitor Exit Survey conducted by Experience Turks and Caicos, revealed that this single property

captures 16% of all stayover visitors across the entire island during the high-demand winter period, making it the single most visited resort in the country. The property frequently averages 3 to 4 guests per room due to a massive density of children, teens, and grandparents sharing multi-bedroom configurations. From mid-December through April, the resort consistently hits 95% to 100% capacity; peak occupancy. This places the operational guest load at over 2,200 active visitors daily.

Notwithstanding the large acreage, *Beaches* have a beach frontage of 3,059 linear feet. With this linear frontage, *Beaches* operates comfortably without the problems of beach overcrowding. It also comfortably allows for free and unobstructed movement of people along the beach.

Pursuant to the planning standards provided within the TCI Development Manual (as amended), the Moon Palace resort would be allowed to have a total of 2,000 bedrooms on the entire acreage (Given the density requirements of 50 bedrooms per acre, for the type of development proposed, a total of 2,000 for 40 acres of land). Being substantially below the maximum allowable density requirements, it must be assumed that the development is well within the carrying capacity allowable for the site.

During construction of the proposed development, a fence will be erected along the entire linear beachfront to prevent construction workers venturing into the beach zone. The fence will be inland of the primary sand dune and dune vegetation, which will be to the satisfaction of the Directors of Planning and the DECR.

2.4.4 Qualitative Study of Beach users

A survey was carried out on the current beach use fronting and within the vicinity of the proposed site for development. Surveys were completed during the peak of the tourist season and included the number of visitors per day, ascertaining an opinion of 243 key stakeholders (beach users, operators, vendors, etc.).

A team of ten (10) people participated in carrying out the surveys. A photograph of the team can be found in Appendix H of this impact statement. The team members included:

Students from the Turks and Caicos Islands Community College assisted in carrying out the surveys and were instrumental in ensuring their completion. Without their involvement, youth, and enthusiasm, the task would have been more daunting and taken considerably more time.

Four (4) surveyors performed the surveys on the 24th & 25th of July 2026 (Friday and Saturday) from 9:00am to 5:00pm. The first location chosen was the Shearwater Close beach access lane, which shares a boundary line with the development site. The surveys began immediately and daily at the location. The coastal and marine environments in this locality, although they suffered impacts from previous beach nourishment and the placement of groynes, have emerged as aesthetically pristine and very popular for locals and tourists alike. The anchor activity attracting most visitors to this location during the time of the surveys was the clear bottom kayak photography operations on the beach; many visiting customers were mostly African American females. Others surveyed were tourists and locals who were scattered along the beaches fronting the site and within the immediate vicinity.

To reach the minimum number of at least 200 surveys, the survey area had to be extended. This allowed for a consistently high number of respondents, greater local participation in the surveys, and canvassed a wider cross-section of opinions. The second location was selected in the vicinity fronting The Cultural Market Place, which is located at the beach access lane sandwiched between the Ocean Club East and Club Med developments. This location is a short beach walk from the development site. Many beach vendors, boat tour operators, restaurant workers and patrons, locals, and tourists were interviewed at this location.

The survey recommenced (Friday 31st July to Saturday 1st August 2026 from 9:30am to 5:00pm) with the assistance of students from the TCI Community College and a few others as surveyors/interviewers, including those with the ability to speak Haitian creole. It was found that many of the local beach vendors and workers were of Haitian descent. The previous two areas at Shearwater Close and The Market Place were covered during the period. As many respondents from the previous locations had already been interviewed and given the fluctuating peak and off-peak tourists on the beach, the survey area was extended again to include the beach access lanes located at The Seven Stars Resort and The Pinnacle; and the beach access lane known locally as the Rotary Park. Many beach vendors, hotel and resort beach workers, boat tour operators, and tourists were surveyed at these locations.

For the remainder of the survey period 2nd and 3rd August, Sunday and Monday respectively, through to its completion on Saturday 8th August 2026, other areas surveyed were the beachside zones within the Grace Bay area, including The Regent Village, IGA Gourmet Supermarket, and the beach access lane located near The Sands Resort.

Respondents, Status, Gender

As mentioned earlier, a total of 243 respondents were interviewed, the majority being residents. An equal percentage were male and female.

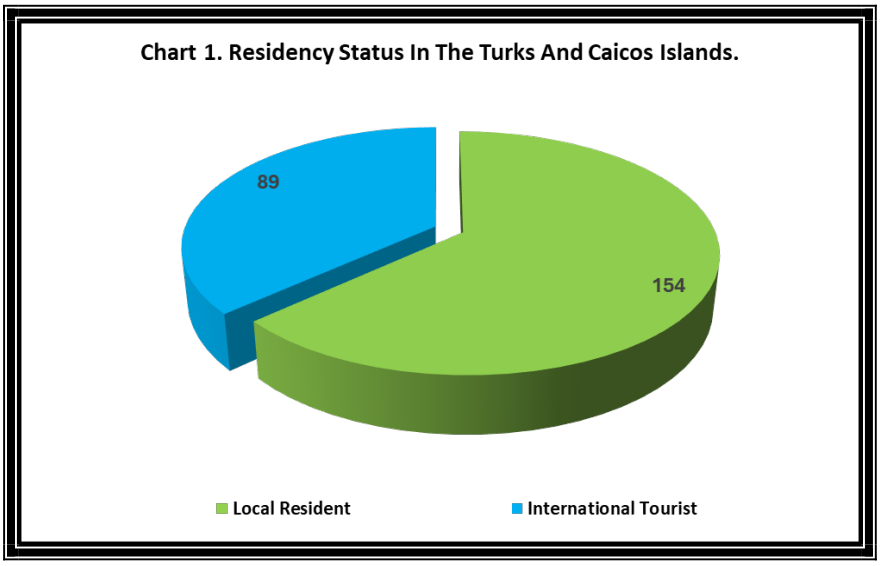


Figure 23 – Residency Status in The Turks and Caicos Islands

Total number of respondents and their residency status. It must be clarified that the term "local resident" simply means that those residents are currently living on the island and is not a reflection of their immigration status.

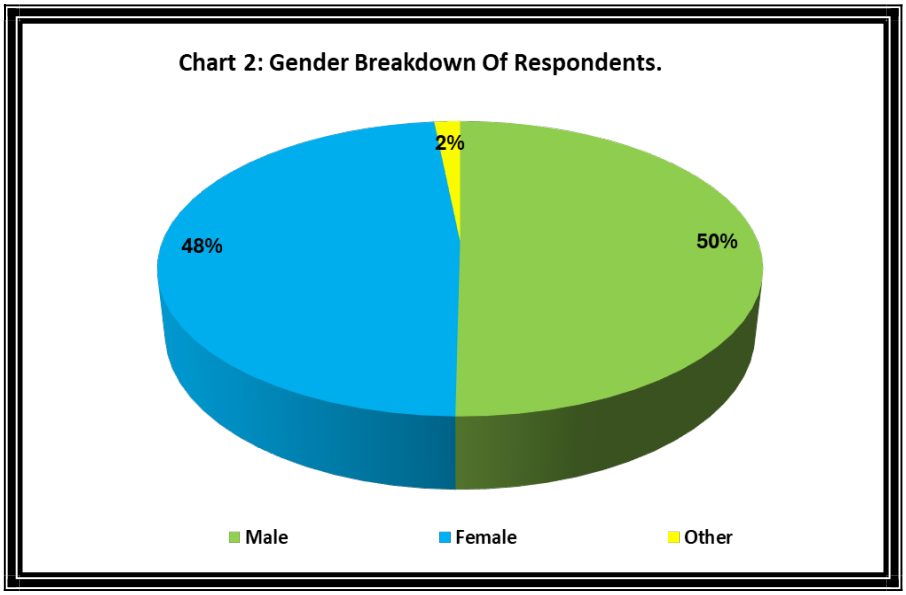


Figure 24 – Gender Breakdown of Respondents

Beach Visitations

Most respondents only occasionally visited the beach in the vicinity of the development site; local residents, and few tourists who were occasionally on the island. These individuals were using the beach for birthday parties, picnics, other celebratory occasions, and walking along the beach. The daily, weekly, and monthly combined visitors were beach vendors, tour operators, beach side residents, and hotel beachside workers. First-time visitors were primarily tourists.

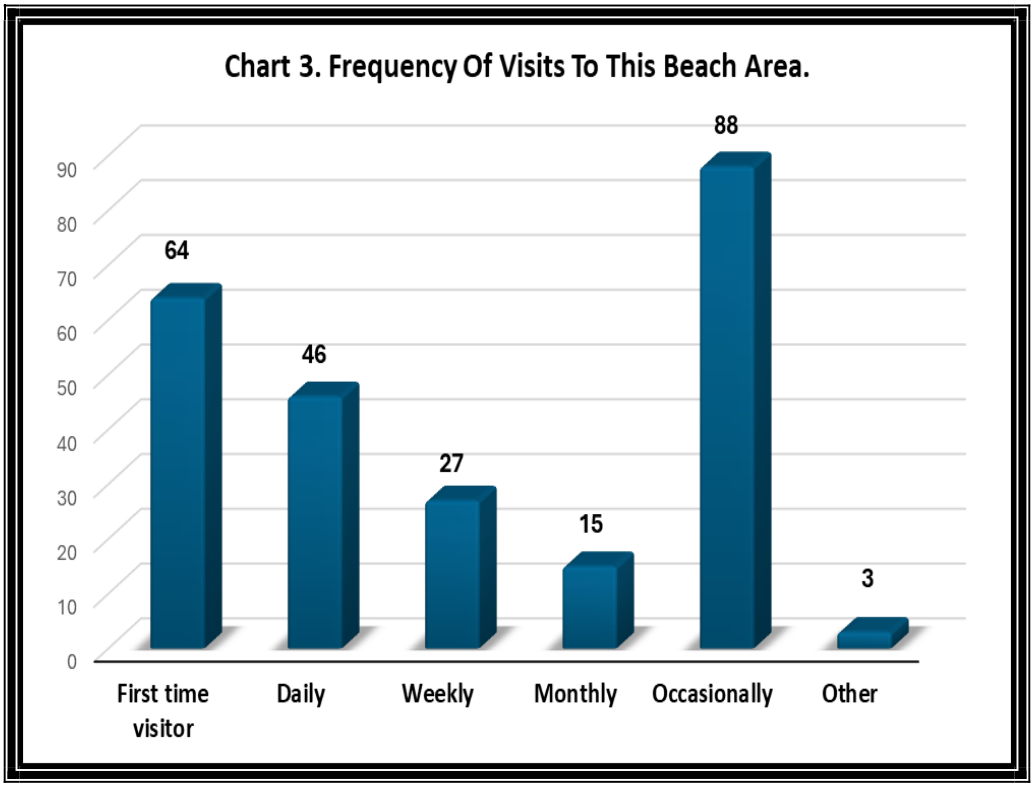


Figure 25 – Frequency of Visits to This Beach Area

Surprisingly, the previous beach restoration has improved the scenic quality of this specific area, making it increasingly attractive to locals and visitors.

Public Awareness

Approximately seventy-four percent (74%) of the respondents never heard of the proposed development. The local residents that had heard of the development had read an article in the local newspaper or had heard others talking about it. The few tourists who had heard of the proposed development learned about it from other tourists who had participated in the survey on a previous day.

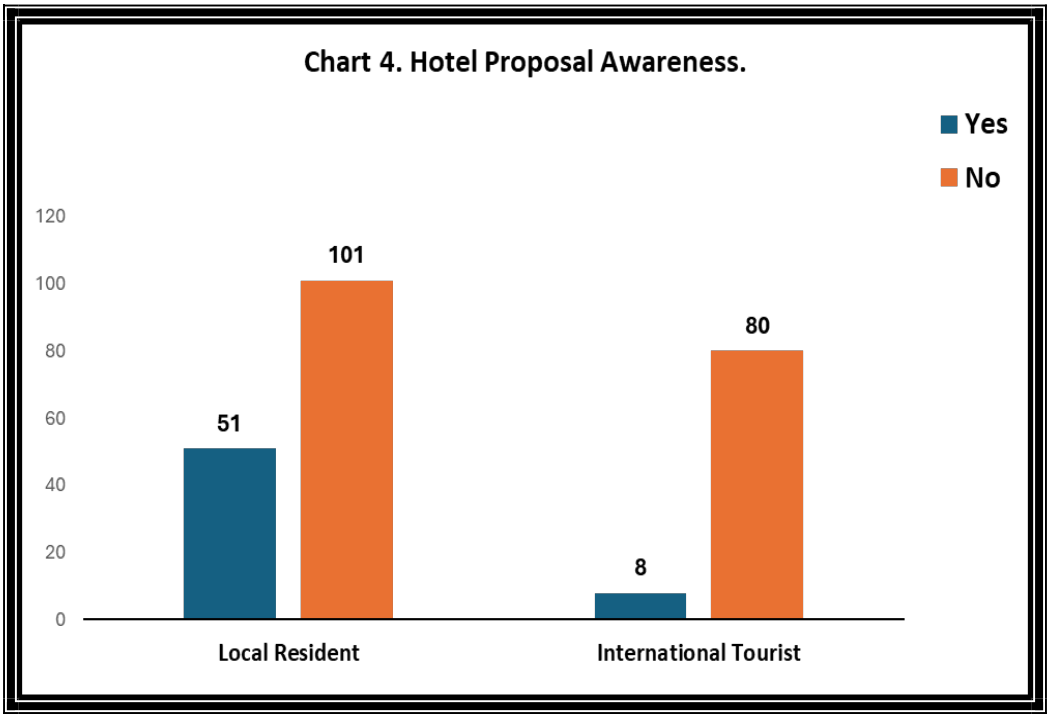


Figure 26 – Respondents' awareness of the proposed development.

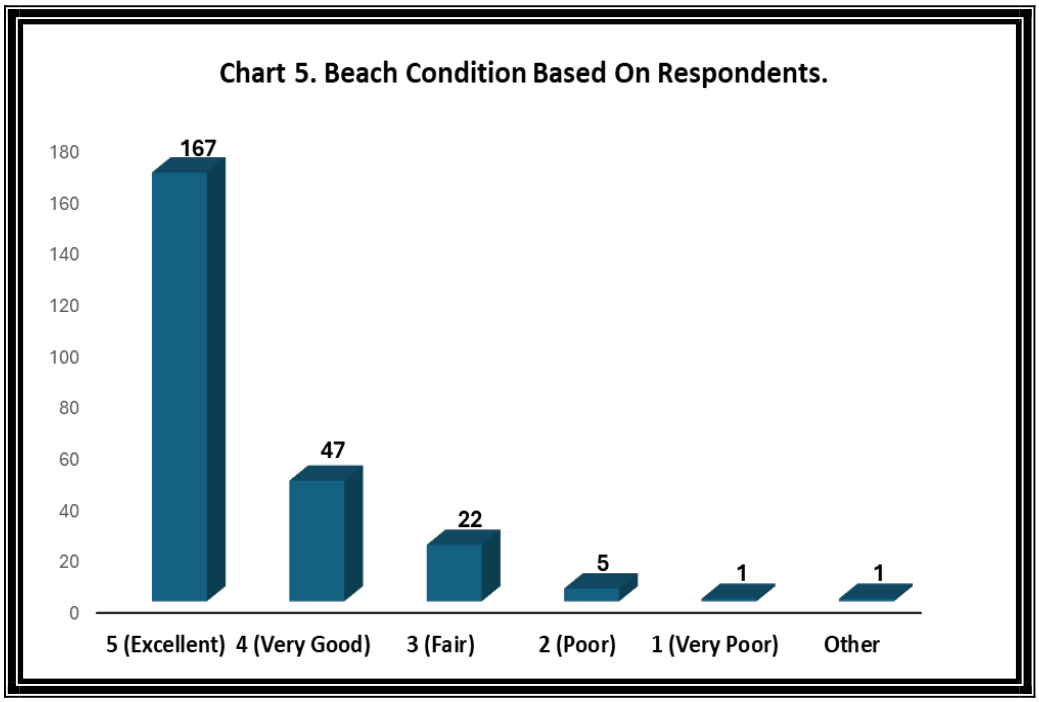


Figure 27 – Beach Conditions Based Respondents

Beach Condition

As mentioned earlier, the area has undoubtedly emerged as a popular public beach zone because of its beauty. The T-groynes, materials, and designs have created idyllic, sheltered, calm, and scenic pocket beaches. People's perception of the area reflected the aforementioned.

Eighty eight percent (88%) of respondents thought that the beach area was either excellent or very good.

Beach Crowding Impact

Of the 243 respondents, the majority, 105, agreed and strongly agreed that there was sufficient area for general beach users or public and hotel guests to co-exist on the beach without feeling overcrowded. 53 were neutral in their opinion; they felt that this was something that the TCI Government must regulate to ensure that overcrowding does not occur. They had a neutral opinion that it could go either way dependent upon regulation. 84 disagreed and strongly disagreed that there was sufficient space for hotel guests and the public to co-exist on the beach.

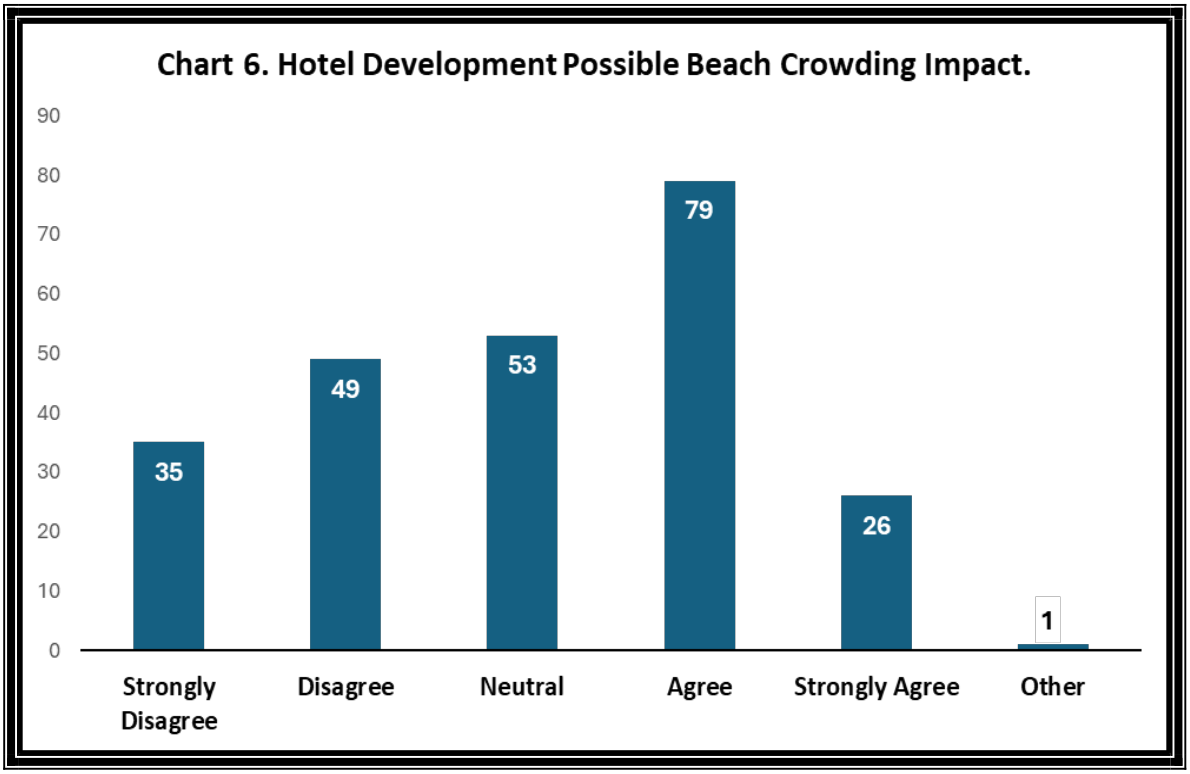


Figure 28 – Hotel Development Possible Beach Crowding Impact

The hundred and five people (105) agreed and strongly agreed that there was sufficient space for the public and hotel guests.

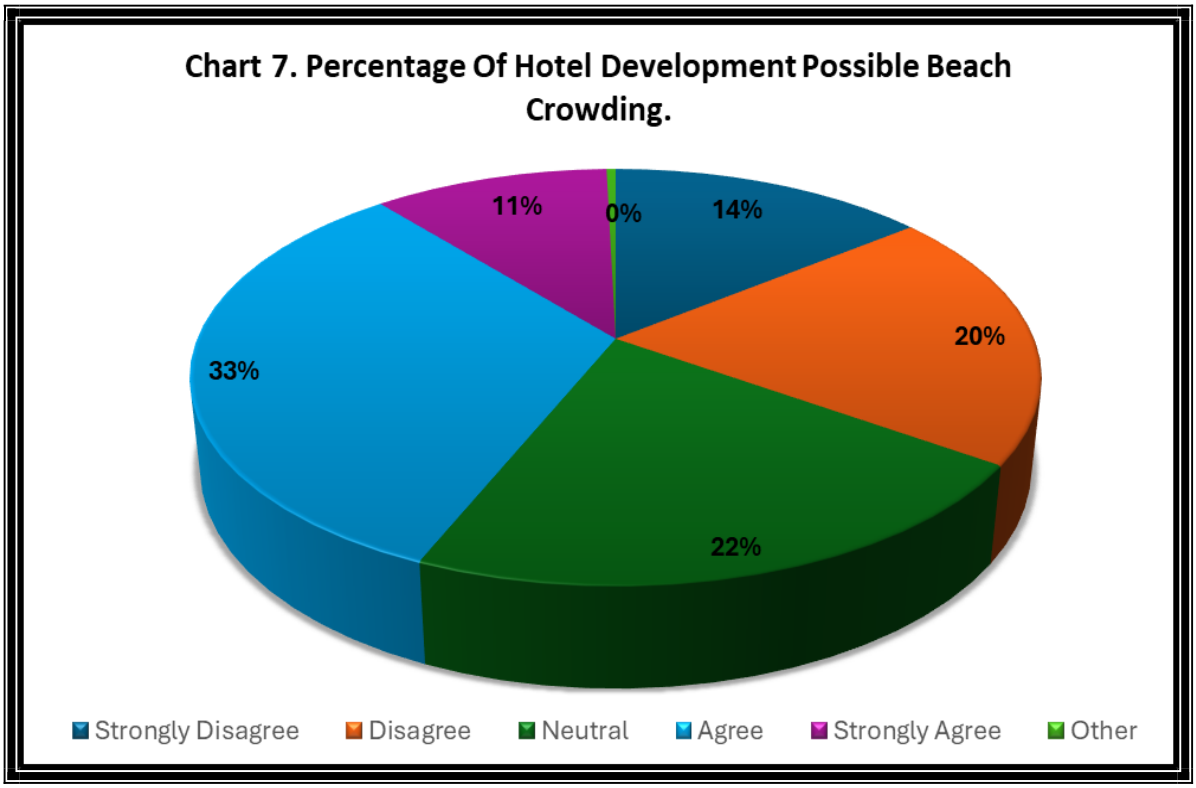


Figure 29 – Percentage of Hotel Development possible Beach Crowding

Most of the people surveyed strongly agreed and agreed that there was sufficient beach area for the public and hotel guests to co-exist on the beach. A single large percentage were neutral on the matter.

Comfortability with Development Impact (Density)

Most respondents agreed and strongly agreed that the proposed development would fit comfortably on the site and not negatively affect the site and beach environment. A large percentage said that they were neutral on the matter.

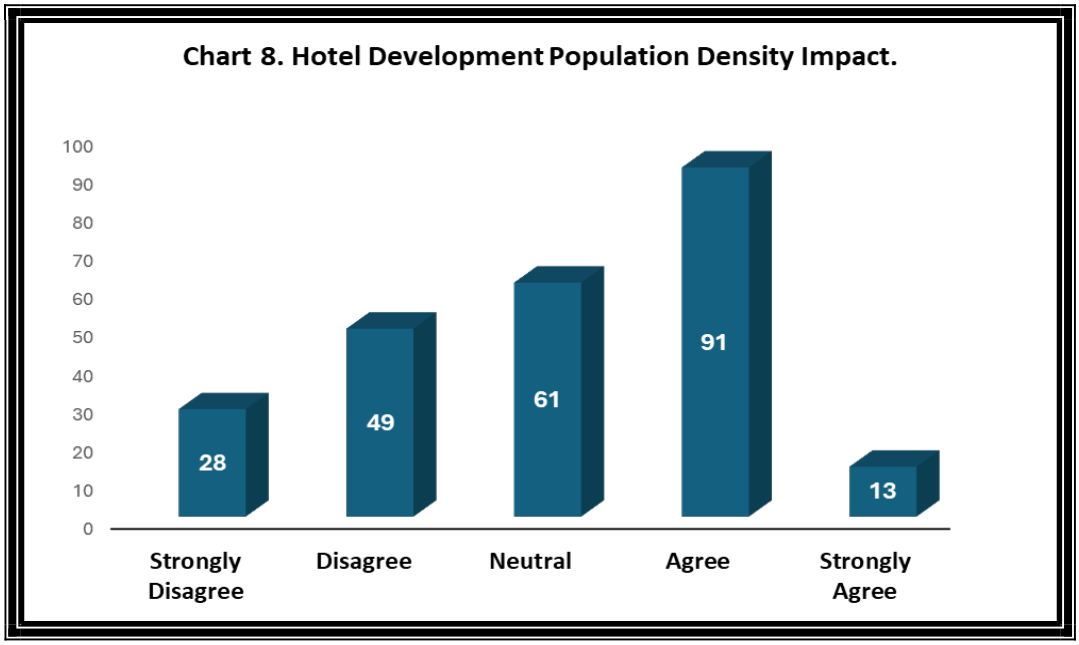


Figure 30 – Hotel Development Population Density Impact

Comfortability with the development fitting on the site and not affecting the beach environment.

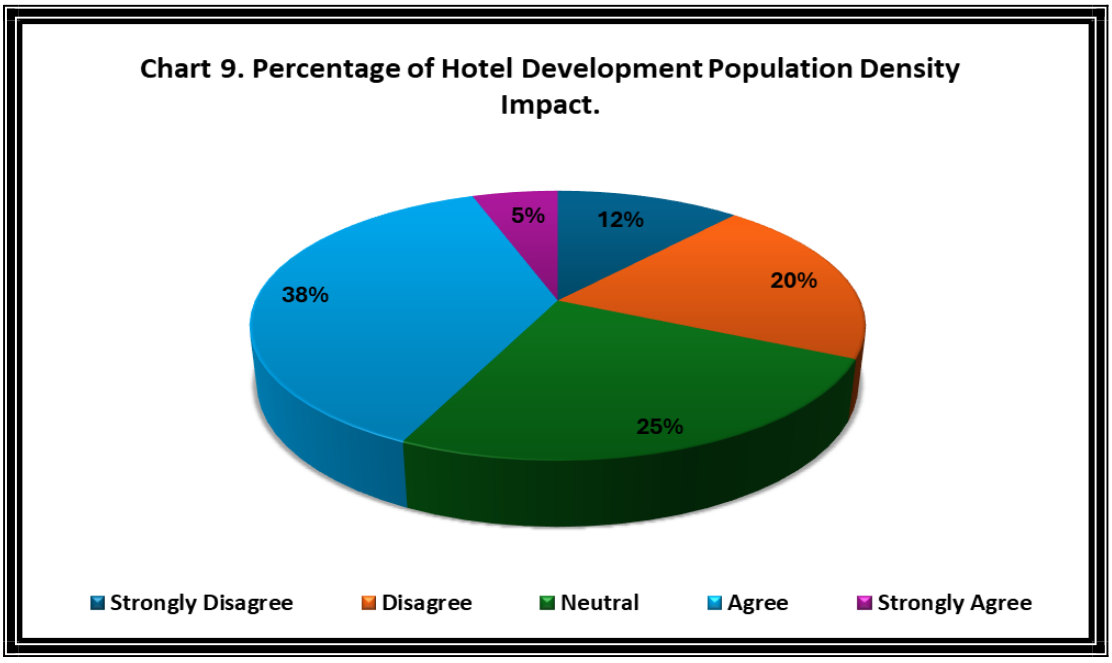


Figure 31 – Percentage of Hotel Development Population Density Impact

Cultural Heritage Impact

This question on heritage impact was significant, interesting, and revealed the division of perceptions of the impacts of development amongst the local residents. The reason for most persons stating that the impacts on the islands' cultural heritage would be positive, is due to most of the beach vendors, resort beach workers, boat tour operators, and many others 'hustling' along the beach being of Haitian descent. Expanding on topics of discussion during the interviews, it was garnered that Haitians were not concerned with the cultural impacts, instead they were focused on the economic benefits to be derived from the development.

On the other hand, many indigenous Turks and Caicos Islanders perceived that further increase and expansion of development as negative. Their reality is that they are not the ones benefiting from the development within the islands and felt that they are witnessing cultural degradation and dilution.

The respondents from overseas were almost split as some expressed genuine concern about the erosion of the cultural heritage of the islands. Others took a positive approach and thought the impact would be positive; it was noticed that these individuals were mostly business and marketing type respondents that perceived the positive impacts.

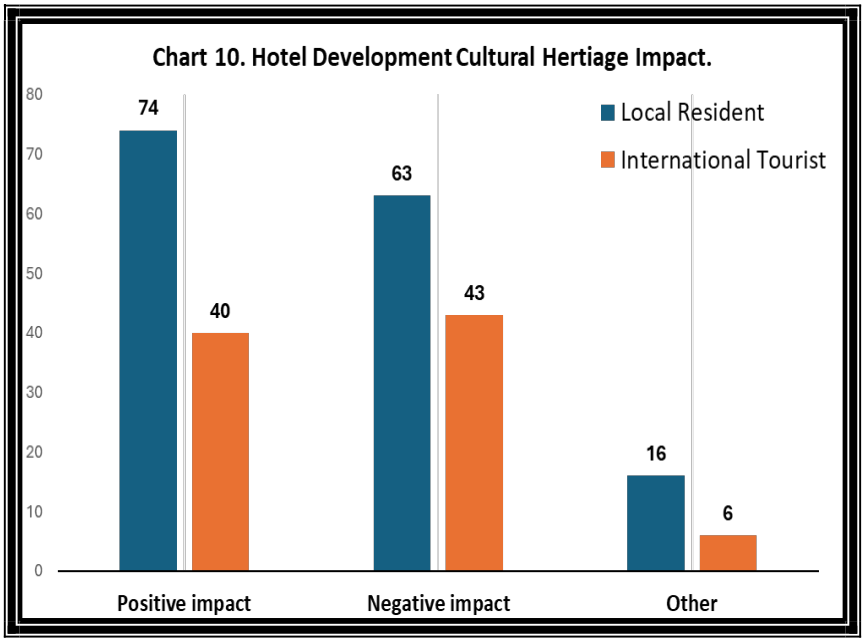


Figure 32 – Hotel Development Cultural Heritage Impact

Almost equal split between the positive and negative perceptions.

2.5 Baseline Coastal Processes and Dynamics

Sandy coastal environments, such as the shoreline along Turks and Caicos Island, are dynamic as they respond to wave events. To describe the wave processes at the coast, a few key scenarios have been investigated. The first is a look at general conditions at the property's beach which helps to indicate the long-term processes on the beach. Following this, significant erosive events are assessed by simulating a swell event in the area. Finally, severe events are examined by considering the hurricane wave climate and impacts on the property.

Daily wave climate

The operational wave climate at the project site is characterized by day-to-day, relatively calm conditions and by seasonal winter swells (December to May). The day-to-day conditions are created by the north-east Trade Winds. The seasonal swells, however, are generated by North Atlantic cold fronts and typically approach from the north to north-west sector. The waves then form a direct hit to the northern shoreline of Providenciales. Swell waves have longer periods thus leading to more aggressive wave conditions that can erode beaches and damage structures. It is these conditions that have the more profound impact on the site, even though, as a percentage of the year, their occurrence is relatively small.

The deep-water operational wave climate was established using the ECMWF Reanalysis v5 (ERA5) produced by the European Centre for Medium-range Weather Forecast (ECMWF). The ERA5 model reanalyses wave parameters including significant wave height, wave period, and mean wave direction as well as the wind speed and direction every hour from January-1940 to February 2026. These over 748,000 timesteps of data can be extracted at an enhanced resolution of ~31x31km (or ~0.25^{o}) over the Caribbean. ERA5 has been found to underestimate the very strong winds and wave conditions associated with tropical cyclones and it is therefore best to analyse the extreme events separately. Tropical cyclones were removed from the ERA5 database so that more accurate operational conditions can be evaluated. This thinned dataset includes approximately 700,000 timesteps and is referred to as ERA5-XTS.

Model data showed that waves offshore of Providenciales are predominantly from the north-east to east (occurring 90% of the time). The average wave height of the easterly waves is 1.3m with an average wave period of 8s. The ERA5-XTS database was also searched for wind data over the period. The wind data extracted from the selected node indicated that winds tend to come from the east with an average speed of 7m/s most of the year. Model wind directions agree with the literature review naming the easterly Trade Winds as the predominant winds in the area with an average magnitude of 7 m/s (Jury, 2013).

Figure 33 Shows the offshore and nearshore wave climate at the study area. The regional wave rose represents offshore conditions, while the zoomed wave rose shows nearshore conditions after transformation by bathymetry and coastal geometry. The model domain, mesh and bathymetry provide context for this transformation.

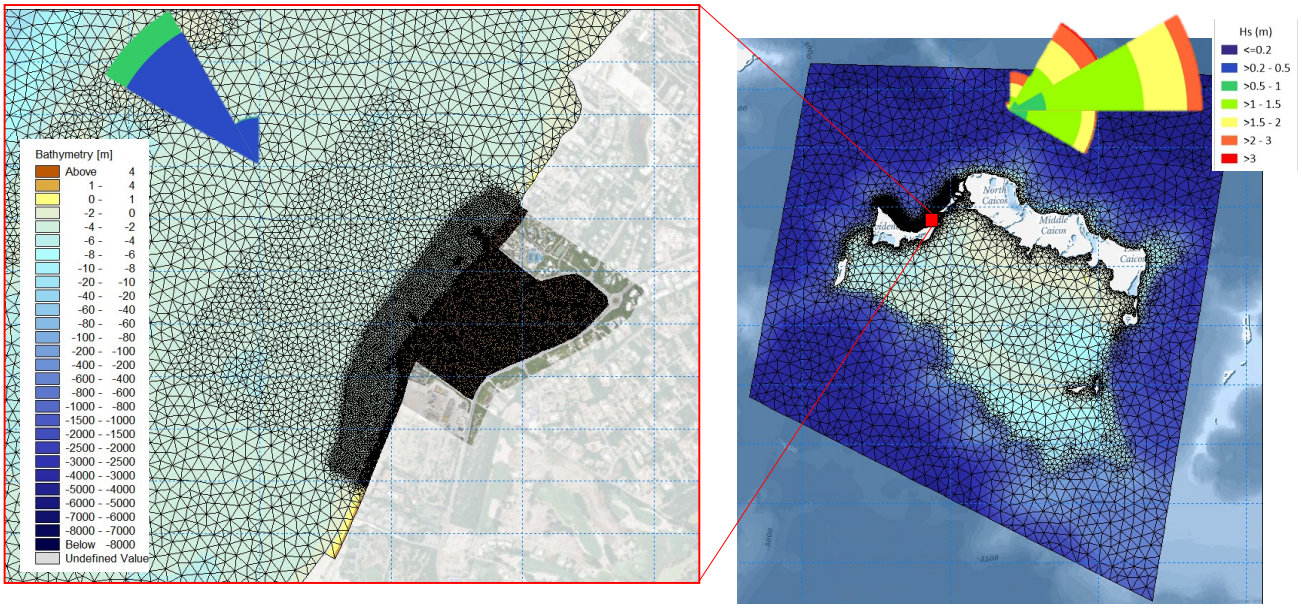


Figure 33 – Numerical modelling domain used for the project

The offshore ERA5-XTS wave data were grouped by month to assess the seasonal variability of significant wave height (Hs), as shown in Figure 34. The boxes represent the interquartile range (25th–75th percentiles), with the orange horizontal line within each box indicating the median monthly wave height.

The whiskers represent the range of conditions from lowest to the 99th percentile condition, while the circles identify the upper 1% of wave-height observations for each month.

Overall, the wave climate shows a clear seasonal pattern. Average monthly wave heights range from approximately 1.2 to 1.75 m, with higher average conditions and greater variability generally occurring from November to April. June exhibits the lowest average wave heights and one of the narrowest ranges of conditions.

The relatively energetic conditions between November and April are consistent with the Caribbean winter wave climate, when cold fronts and northerly systems generate more frequent swell events. These months therefore exhibit higher background wave conditions than during the summer period.

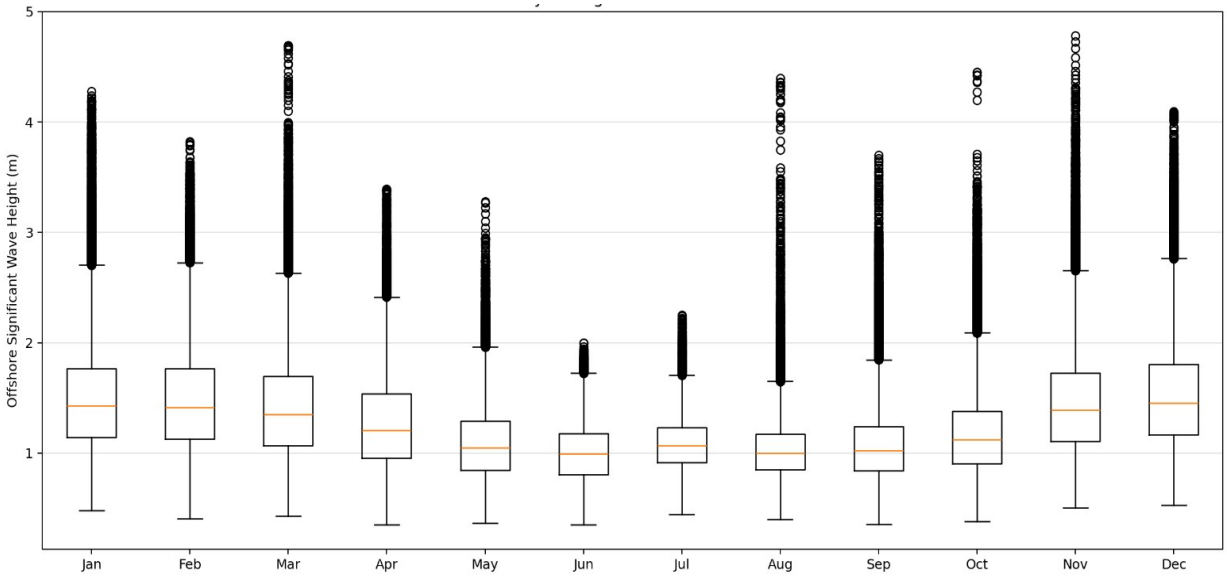


Figure 34 - Monthly statistics of the data extracted from the ERA5-XTS node used

The wave data obtained from the ERA5-XTS node were categorized using a quad-variate frequency analysis of wave height, period, direction and directional standard deviation (DSD), a process also known as "binning". This frequency analysis resulted in 8,308 different conditions or "events" representing a combination of the parameters listed, each with a specific duration related to the number of occurrences over the period.

The ERA5 model is usually applied on spatial scales (grid increments) larger than 30km and outside the surf zone. As a result, the model alone is not at a sufficiently detailed scale to provide accurate nearshore wave data for the Palace Resort property. The project area's nearshore wave climate was therefore developed using a spectral wave model MIKE 21 SW (described in Appendix S) to downscale the ERA5-XTS database and simulate waves as they move over the offshore bathymetry of the island to reach the project shoreline. The model was run in a semi-stationary mode with inputs of the wave heights, periods, and directions along the boundaries of the model domain. Boundary locations are shown in Appendix S.

The resulting nearshore wave climate data are plotted in Figure 35. Under mean conditions, waves approach the site predominantly from the northwest. Offshore significant wave heights are about 0.4m but decrease to approximately 0.1-0.2m along the shoreline as waves break and dissipate energy across the shallow coral reef platform. The 99th percentile condition represents energetic wave conditions. Offshore wave heights increase substantially, with waves of approximately 0.8-1.0m

propagating into the bay. However, the coral reef continues to provide significant wave attenuation, reducing nearshore wave heights at the project site to generally 0.4–0.6 m.

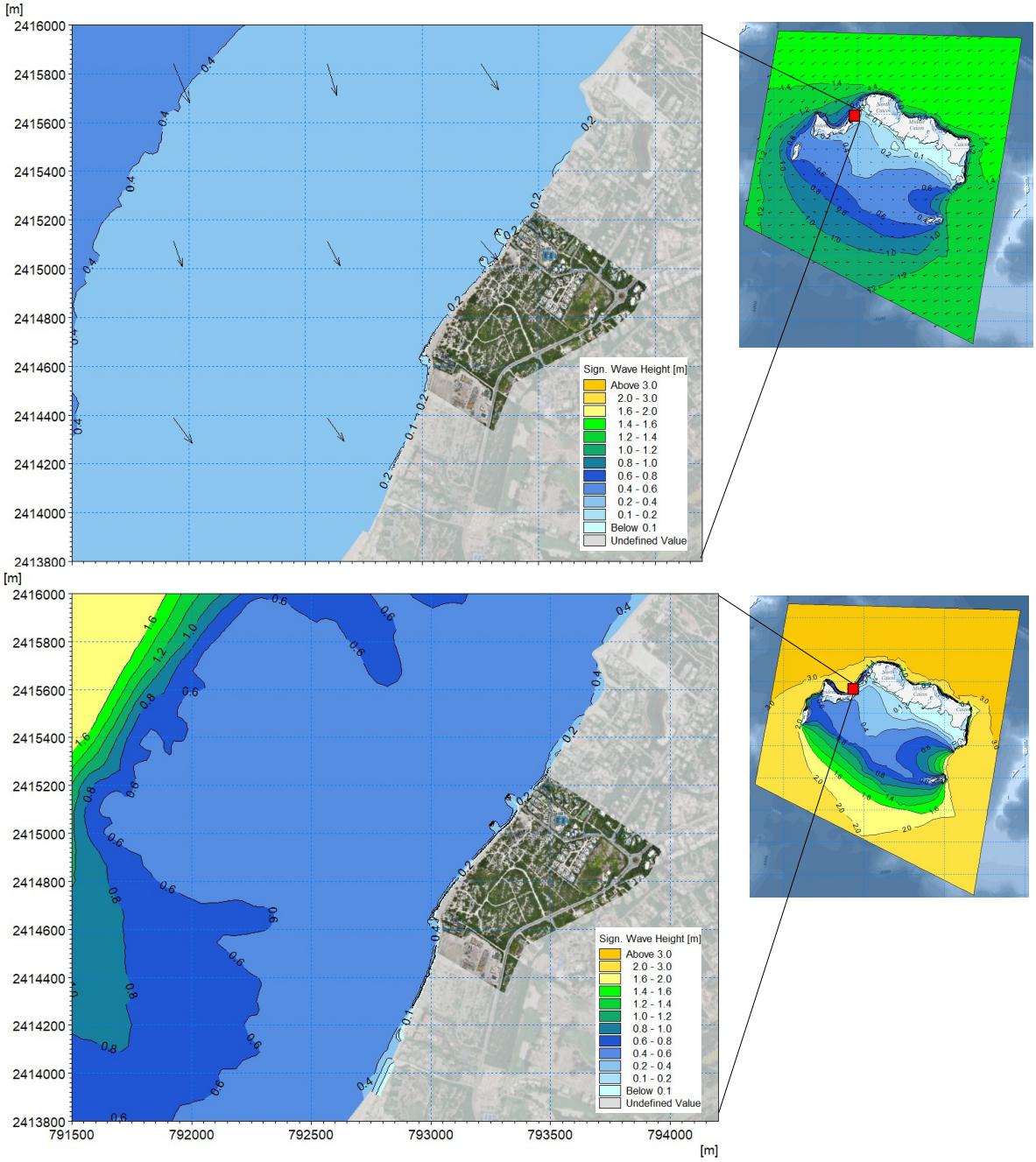


Figure 35 – Nearshore Waves – 50th and 99th Percentile Conditions

Overall, the results confirm the important role of the coral reef and shallow platform in sheltering the shoreline from offshore wave energy.

2.5.1 Currents Wave Action and Tides

Based on a review of available literature, the main oceanic current stream around Turks and Caicos is the Antilles Current to the east. This current is a branch of the North Equatorial Current and runs from the Atlantic Ocean to Turks and Caicos in a north-western direction. Closer to Grand Bahama, it merges with the Gulf Stream by the eastern coast of North America. This current is said to be highly variable in magnitude.

The Antilles Current and surrounding streams are shown in Figure 36. The current is not studied as often as the stronger nearby Gulf Stream. In 2019, the variability of the ocean current was assessed for a period of over 10 years of current data which was measured with five different methodologies. Results indicated that there was no immediate seasonal link with the flow of the current, however, the flow was predominantly to the north-west in August to September (Meinen et al., 2019).

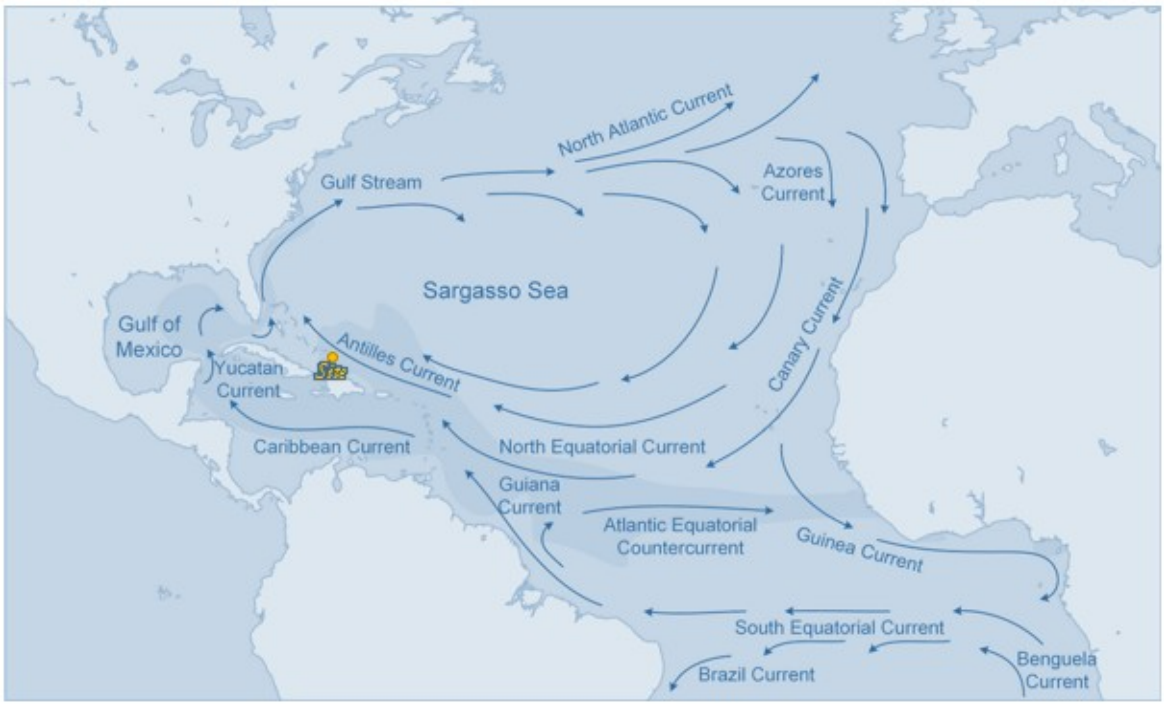


Figure 36 - Dominant ocean currents in the Northern Atlantic Ocean

Global Tide Model

Global tide models have been developed by various research institutions and are generally accepted as sufficiently accurate for investigations of this size. Typically, these tide models are based on harmonic analyses of measured tide gauge data, or from processed satellite observations. An example of 28 days' worth of tidal data is shown in

Figure . The tidal signal has an unequal semi-diurnal pattern. This means that over a day there are two high tides levels of different magnitudes and two low tide levels, also with different magnitudes. The signal and magnitude correspond to the general literature on the area which designates the regime as a micro-tidal (Sealey et al., 2019).

The tidal signal shown in Figure 37 highlights the presence of spring and neap tides. During spring tides there is larger difference between the high tide levels in a day; while in a neap tide, the higher tide levels are closer in magnitude and generally half the magnitude of the neap tides. The tide signal changes from Spring to Neap every 7 days. Typically, the spring tides in the area vary between -0.4m and +0.4m (tidal range of 0.8m). Neap tidal levels are between -0.2m and 0.25m (0.45m tidal range).

Water levels from the global tide model were used as inputs to drive a hydrodynamic numerical model and calculate daily tide induced currents around the project area. The contribution of oceanic currents on the nearshore current patterns is quite small and is therefore excluded from this analysis.

Water levels from the global tide model were used as boundary forcing for the hydrodynamic numerical model to simulate the tide-induced circulation within and around the project area. The resulting model outputs were then used to characterise the daily current patterns associated with tidal forcing.

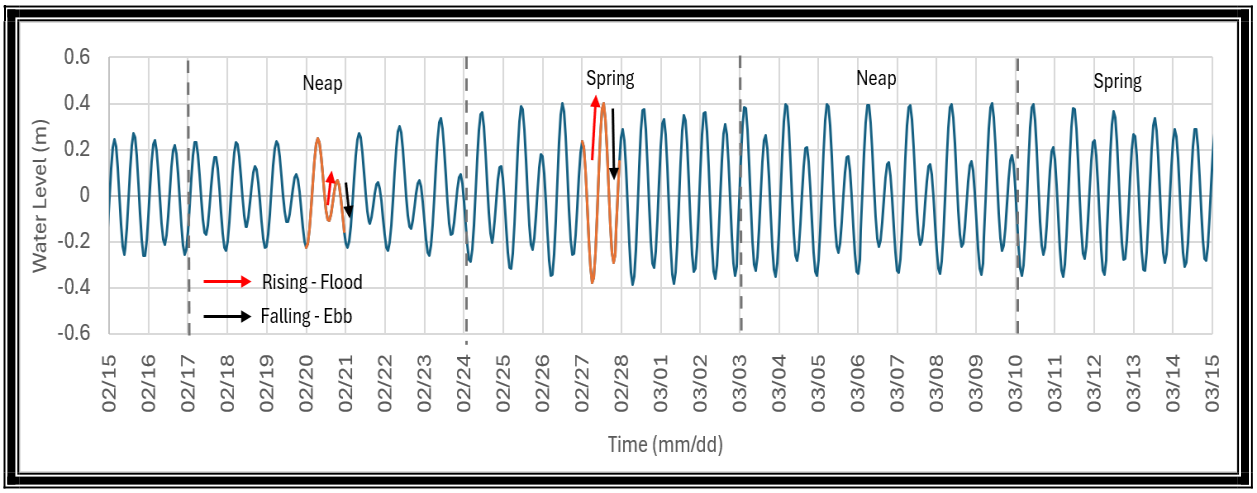


Figure 37 - Predicted tide levels near to Palace Resorts

Nearshore Tidal Currents

Operational hydrodynamics were modelled over a 30-day period, from February 15 to March 15, 2021, to capture the full range of spring and neap tidal conditions Figure 37.

Water levels from the DTU global tide model were applied as boundary forcing to the hydrodynamic model. To isolate the tide-induced circulation, no wind or wave forcing was included in these simulations.

Tidal water level amplitudes approximately 0.38–0.40m during spring tides and 0.23–0.24m during neap tides, corresponding to tidal ranges of approximately 0.76m and 0.47m, respectively. Modelled currents speed and direction were extracted at representative stages of the tidal cycle, including rising/flood and falling/ebb conditions. These results were used to characterise the nearshore tidal circulation and identify areas of low current speeds and potentially reduced flushing. Higher-energy wave-driven circulation is assessed separately in subsequent sections.

Current speed and directions were extracted and plotted in Figure 38 and Figure 39 at different stages of the tide (ebb/falling tide and flood/rising tide) throughout the 30-day simulation period. The extracted snapshots show a clear change in current direction between the rising and falling stages of the tide, with the same general circulation pattern observed during both the neap and spring tidal conditions.

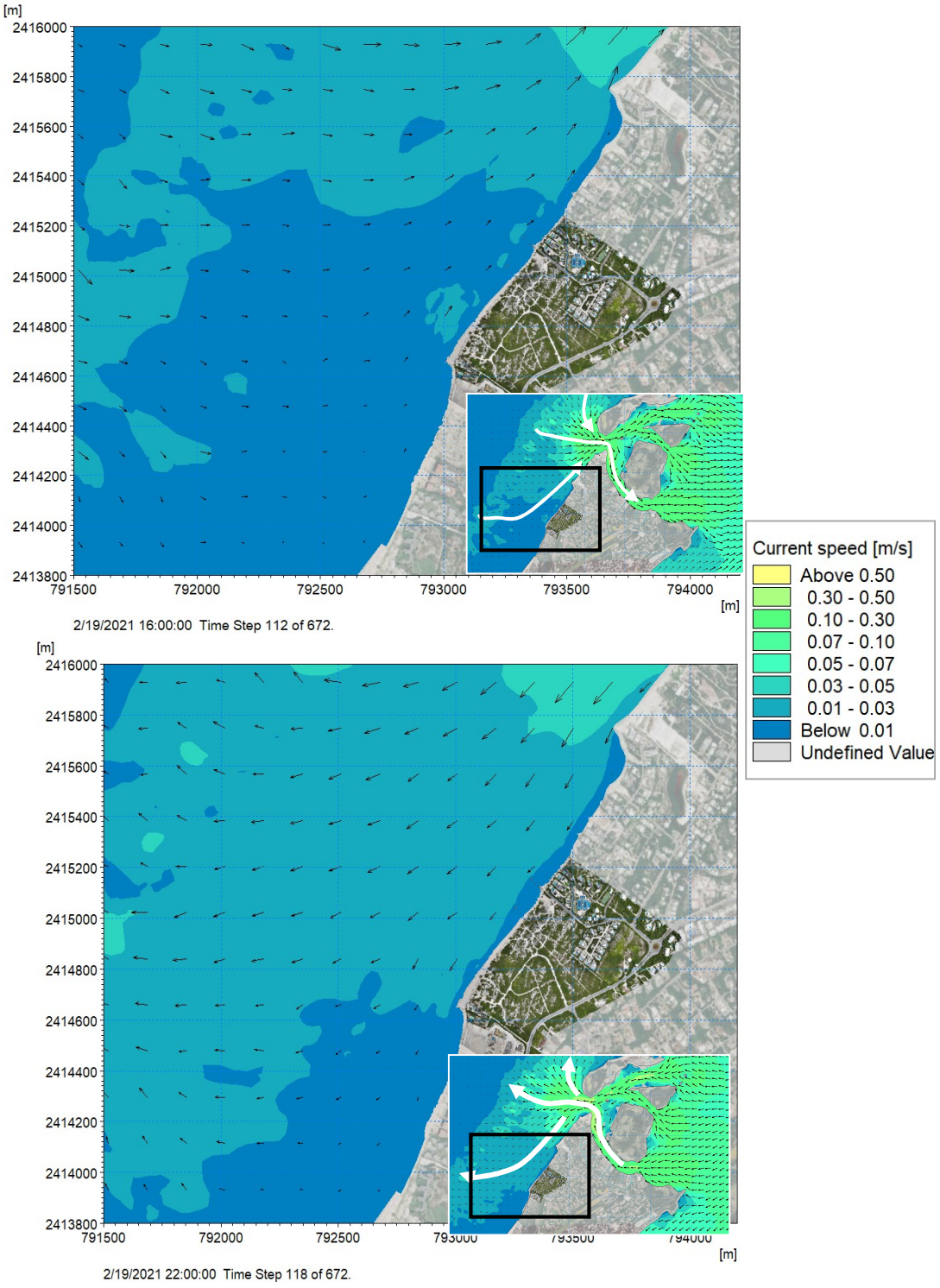


Figure 38 – Current speeds and patterns during the neap tidal signal (rising upper, falling lower)

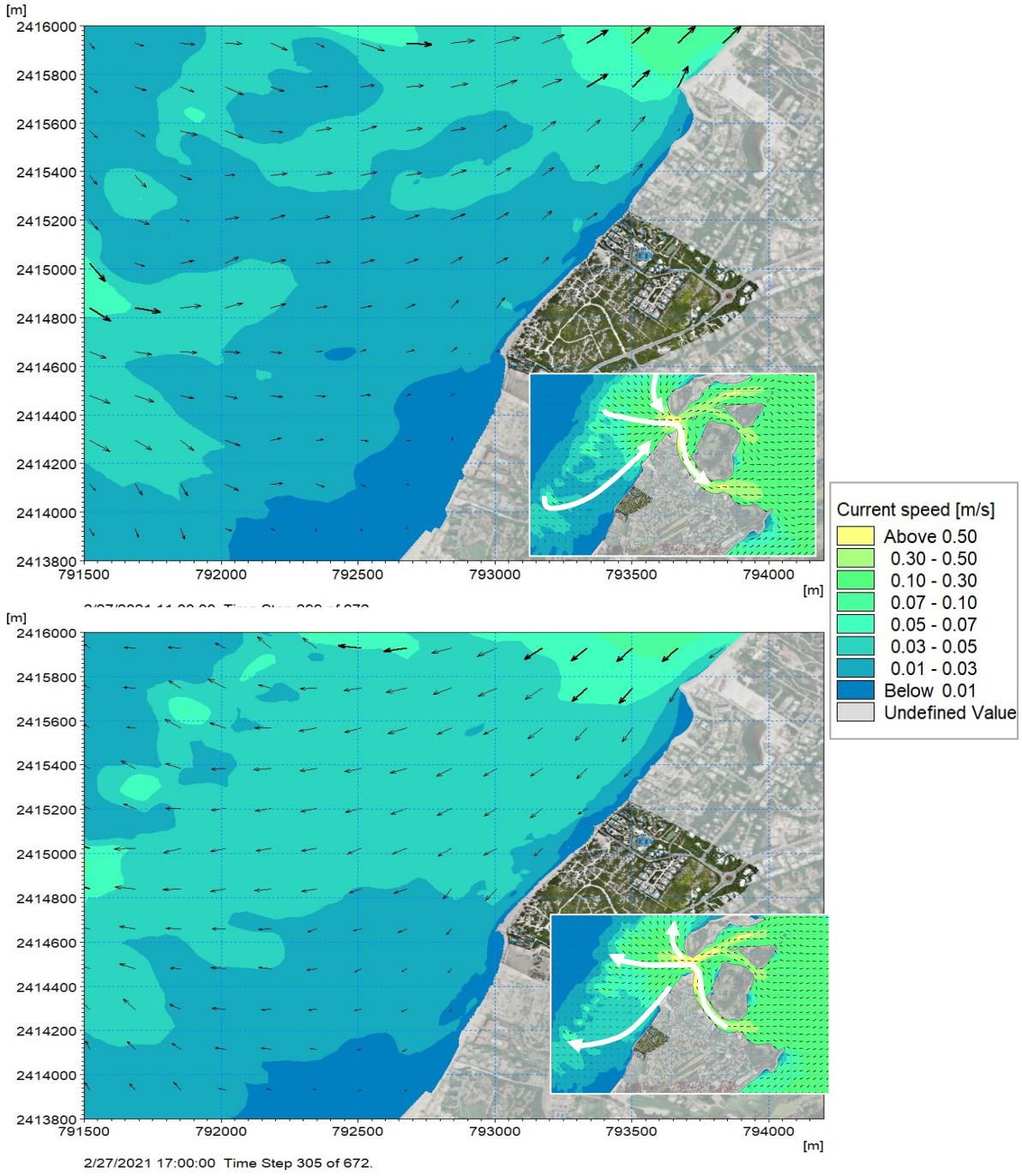


Figure 39 – Current speeds and patterns during the spring tidal signal (rising upper, falling lower)

During the neap tide (Figure 38), currents during the rising stage were generally directed shoreward moving from the west then towards the north-east, while during the falling stage the flow reversed and was directed predominantly away from the nearshore area toward offshore waters. The local circulation is strongly controlled by the channel opening, which acts as a preferential pathway for tidal exchange and constrains the flow through a relatively narrow section. This produces spatial variations in both current direction and magnitude.

Within the Palace Resorts project area, tidal currents remained relatively weak during both stages of the neap tide. During the rising tide, the nearshore flow was predominantly directed toward the northeast, approximately parallel to the shoreline, whereas during the falling tide the current direction changed toward the southwest. Current speeds immediately offshore of the resort were generally below approximately 0.02 m/s.

During the spring tide (Figure 39), the overall circulation pattern was observed during the neap tide. The principal difference was the increase in current magnitude, particularly at the offshore and areas where the flow was locally concentrated (channel).

Within the project area, however, currents remained comparatively weak. The rising tide produced predominantly northeastward nearshore flow, while the falling tide produced southwestward flow. Current speeds immediately offshore of the resort were generally below approximately 0.03 m/s.

Overall, the model results indicate that the project area is characterized by relatively weak tide-induced currents compared to surrounding areas such as Leeward Channel. The principal tidal signal is therefore expressed as a reversal in current direction between rising and falling tide, with somewhat stronger circulation occurring during the spring tide.

Wave Generated Currents

From the previous results, there are very slow currents in the bay during a low wave simulation with tidal currents. The balance between tides and wave effects determine which phenomenon governs on a coast (Davis & Hayes, 1984). The graph below can be used to discern the dominant feature (Figure 40). Using the Total Tide Tool the mean tidal range for Turks and Caicos is calculated as 0.53m. The mean wave climate shows that near Palace Resort, waves at the reef lagoon are of 0.3m (30cm). This would produce a mixed wave-dominated regime.

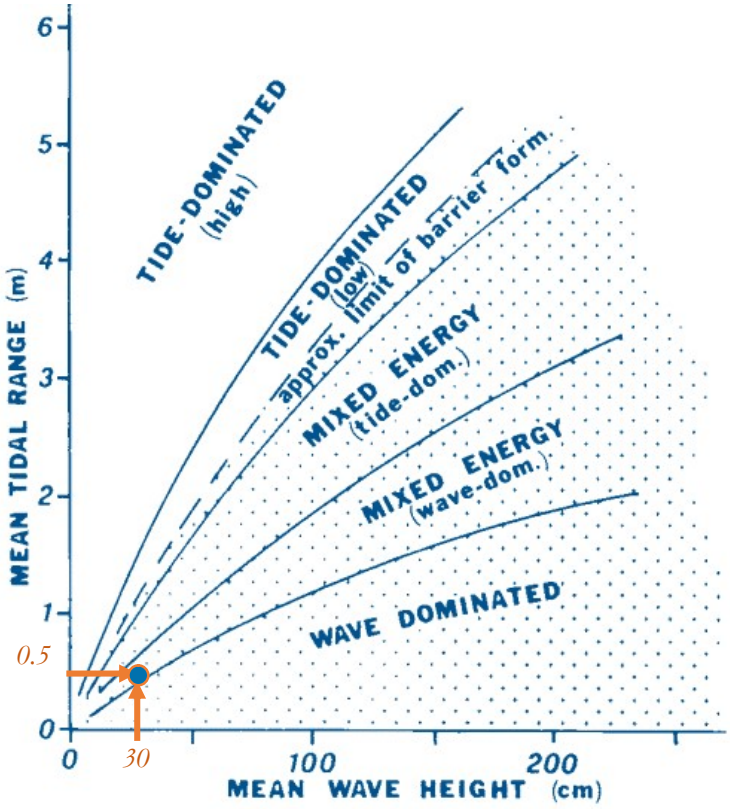


Figure 40 – Curves used to determine whether the coast is wave- or tide-dominated adapted from Davis & Hayes, 1984

To further assess nearshore circulation, the representative wave conditions identified from the daily wave climate (P50th and P99th) were simulated using the coupled wave–hydrodynamic model to quantify currents generated by the wave field. The resulting wave-induced currents for the 50th percentile and 99th percentile conditions are shown in Figure 41 and Figure 42, respectively. These currents result from spatial gradients in wave momentum as waves shoal, refract and break across the reef and shallow platform, and therefore represent circulation associated specifically with wave forcing.

Under the 50th percentile condition, wave-induced currents are generally weak throughout the project area. Along the shoreline fronting the Palace Resorts, currents are predominantly directed towards the southwest, with typical nearshore velocities of approximately 0.05 m/s or less.

Under the more energetic 99th percentile condition, wave-induced circulation becomes considerably stronger across the bay. The highest velocities occur along the exposed reef, where locally concentrated currents reach approximately 0.5 m/s. Within the

project area, current speeds increase to approximately 0.10–0.17m/s, with local values approaching 0.20 m/s at the beach face.

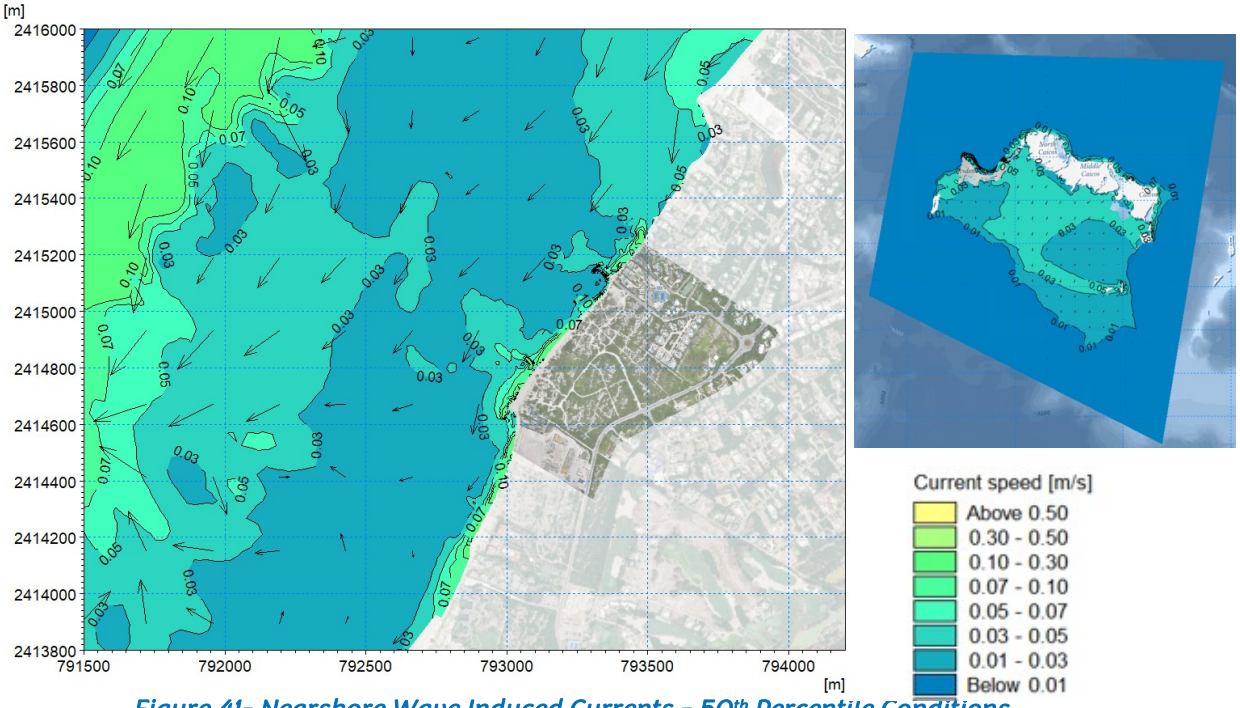


Figure 41- Nearshore Wave Induced Currents – 50th Percentile Conditions

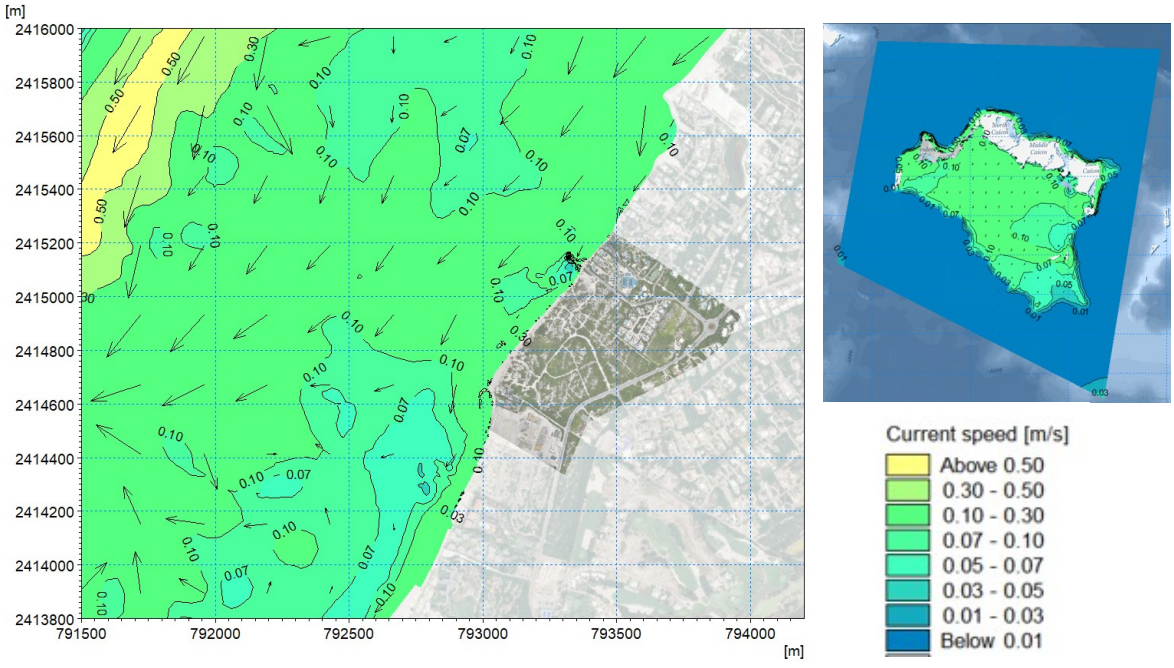


Figure 42 – Nearshore Wave Induced Currents – 99th Percentile Conditions

The results indicate that wave forcing can make a substantially greater contribution to nearshore circulation during energetic conditions than during typical conditions. Although average wave-induced currents at the project shoreline are relatively weak, higher-energy wave events can generate stronger alongshore currents and enhance nearshore circulation. These conditions may increase the potential for sediment mobilisation and transport; however, actual sediment movement also depends on whether the hydrodynamic forcing is sufficient to mobilise the seabed material. The implications for sediment transport are discussed further in the following section.

2.5.2 Sediment Transport

Sediment transport occurs on multiple time scales, all of which affect the stability of a beach. In the long term (multiple years) it is typical to have net transport along the shoreline that reflects average conditions. As the name transport suggests, sand grains move along the nearshore depending on the dominant drift direction. To maintain a stable beach, the sand flowing into a beach area and the sand flowing out should be in equilibrium. If there is an imbalance, over time there will either be accretion or erosion.

In the short-term, (a few days or even hours) high energy waves can erode beaches leaving scarps. Long period swell waves churn up sediment in the water column and deposit the sediment further offshore. Fortunately, the erosion that is experienced just after a swell event is typically not permanent as the long-term patterns of sediment transport would slowly move the offshore sediment back onto the beach area.

Two methods have been used to assess sediment transport in the study area. The first method assesses long term transport parallel to the shoreline and the other simulates a swell event. Both methods represent one component of more complex phenomena. However, this analysis will aid in determining which methods govern transport for the project site.

Long Term Sediment Transport Patterns

Sediment transport alongshore was assessed using a one-dimensional profile extending from offshore to the landward end of the beach. The DHI LitDrift model was used to calculate longshore sediment drift, with inputs consisting of annualised wave conditions at the offshore end of the profile and the corresponding water depths along the transect.

Figure 43 shows the profile location, the wave conditions applied at the offshore boundary, and the resulting sediment transport directions. The average offshore wave height at the profile was approximately 0.5m. Wave roses indicate that waves generally approach perpendicular to the shoreline at an angle, primarily from the northwest. This

approach produces a net potential sediment drift of 52,000 m^3/yr towards the southwest at the profile, as shown in the model results.

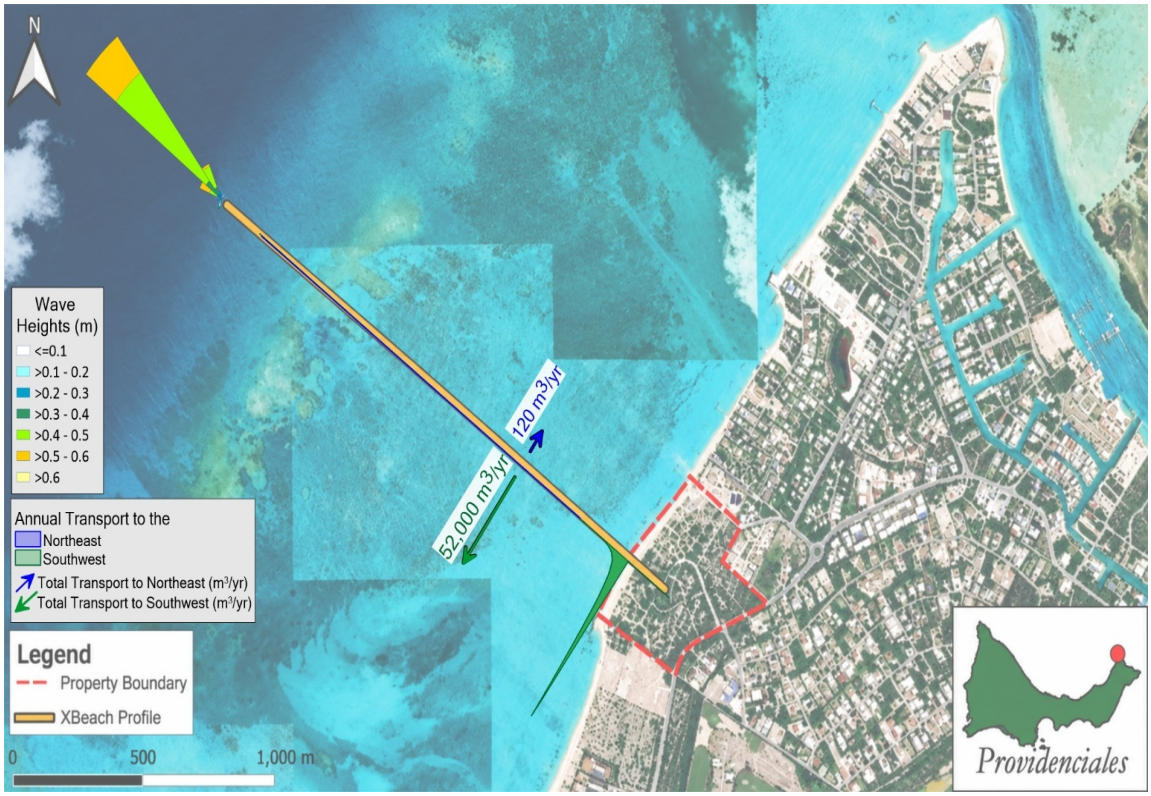


Figure 43 Lit Drift results along the profile showing sediment drift to the southwest and to the northeast

Figure 44 presents the wave conditions used in the analysis and the annual sediment transport potential associated with each condition for the profile. Transport toward the northeast was comparatively small. More frequent conditions (represented by red and orange markers) showed higher transport potential toward the southwest and were associated with waves from the north with heights between 0.15m and 0.35m. Overall, the results indicate a dominant alongshore sediment drift potential toward the southwest as a result of lower energy waves that occur more frequently.

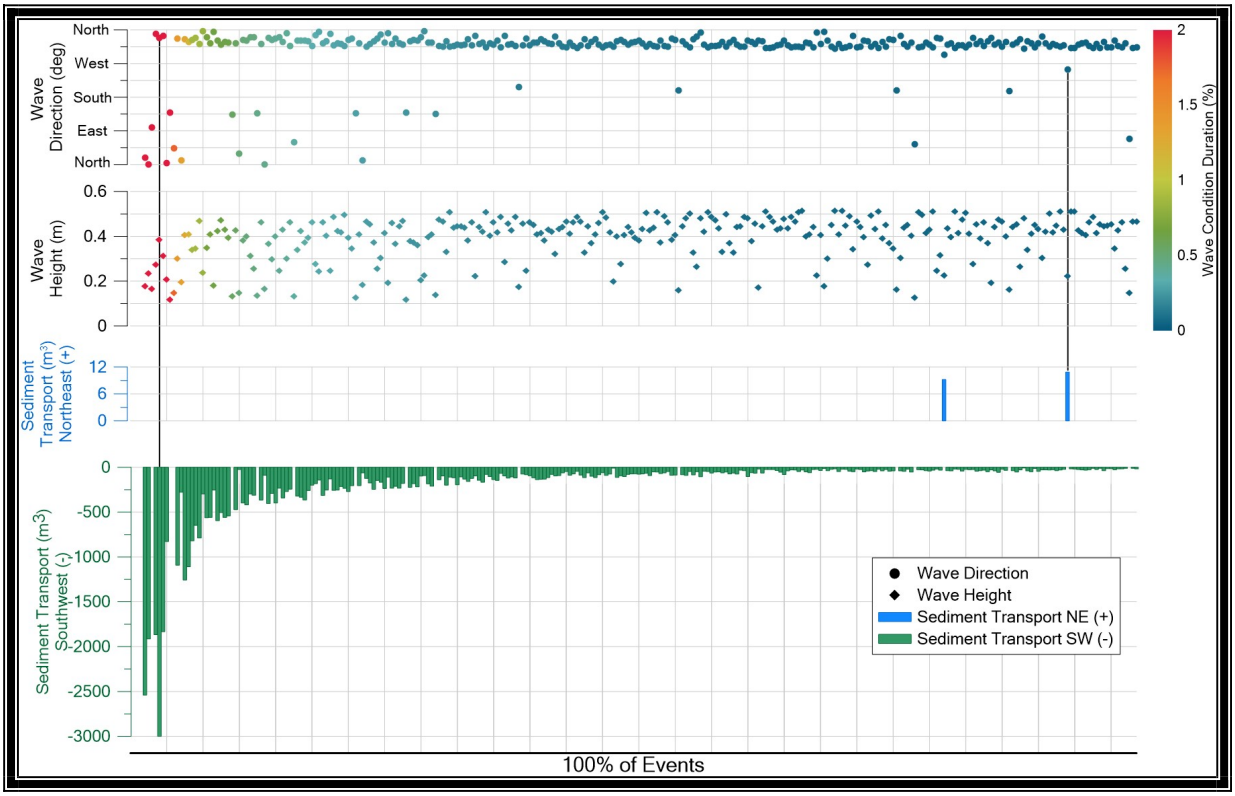


Figure 44 – Wave conditions to show what wave properties generate sediment movement along the profile

Swell Event

During the months of November to April, the Turks and Caicos Islands and the wider Caribbean are subject to energetic swell waves. Swell waves originate from distant storms in the northern Atlantic Ocean that then propagate to the islands over several days. Swells may cause significant erosion and approach the project shoreline from an atypical offshore direction (north). Grace Bay is vulnerable to these effects because the orientation of the shoreline is perpendicular to swells which causes the most severe impact.

To assess the impacts associated, a swell event was simulated using the numerical wave, current and sediment transport model. This process began by filtering the previously describe ERA5-XTS database to find suitable swell events that affect the project shoreline. The filtering showed that one of the top events occurred in February 2021.

This event was selected not only because it represents an energetic long-period swell, but also because Google Earth satellite imagery from the same period shows a visible sediment plume extending offshore from the project area. This provides qualitative evidence that the event generated sufficient wave-driven circulation to mobilize and transport sediment beyond the immediate shoreline.

During the event, offshore significant wave heights reached approximately 3.0 m, with peak periods of about 12–14 s, and waves approached predominantly from the north to northwest. These offshore conditions were transformed from deep water to the Providenciales shoreline using a coupled MIKE 21 modelling system, incorporating hydrodynamics, wave transformation and sediment transport. The model was used to reproduce wave propagation across the coral reef and shallow platform and to evaluate the associated wave-induced circulation and sediment transport response within the project area.

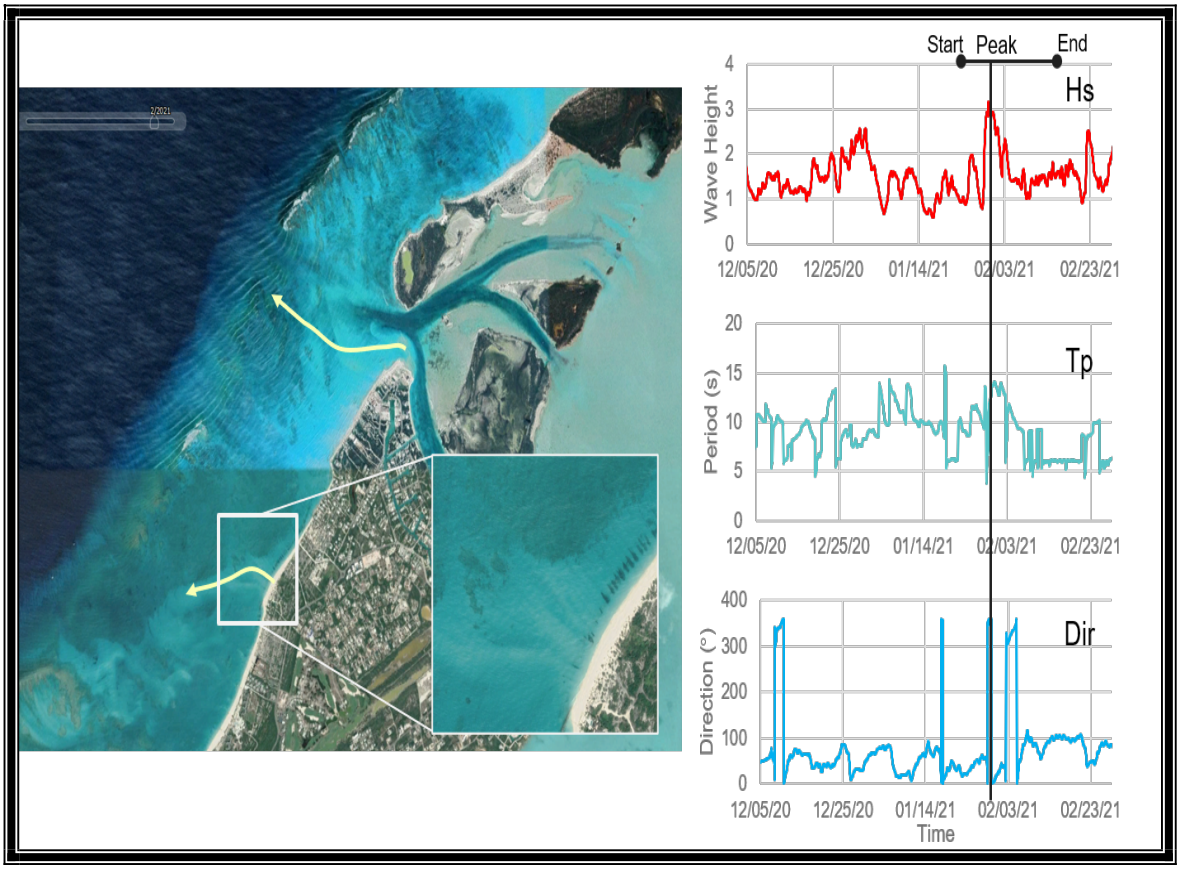


Figure 45 – Representative swell event and associated sediment plume observed in satellite imagery

Wave height and current results were extracted at the peak timestep of the event, corresponding to the highest modelled wave conditions, while sediment transport results were evaluated at the end of the three-day simulation period. The resulting waves and current patterns are presented in Figure 45 while sediment transport response in Figure 46.

During the selected peak swell event, offshore significant wave heights of approximately 2.0m seaward of the reef. As the waves propagated across the reef and into the shallow reef-lagoon area, they were progressively transformed and attenuated, with significant wave heights decreasing to approximately 1.2 m, with waves of similar magnitude reaching the shoreline fronting the Palace Resort. The results therefore indicate that, although the reef provides some attenuation of the offshore swell, a substantial portion of the wave energy can propagate across the lagoon and reach the project shoreline.

During the selected peak swell event, distinct current patterns were identified across the reef, reef lagoon and nearshore zones. Over the shallow reef, current speeds were generally in the order of 0.30–0.50 m/s, reflecting the concentration of wave-driven flow across the reef platform. Within the reef lagoon, current speeds decreased substantially and were generally around 0.07–0.10 m/s, with localized low-current areas of approximately 0.03–0.07 m/s. Closer to the Palace Resort shoreline, currents intensified again within a relatively narrow alongshore band, reaching approximately 0.30–0.50 m/s and locally about 0.70 m/s. The nearshore flow was predominantly directed toward the southwest, broadly parallel to the shoreline.

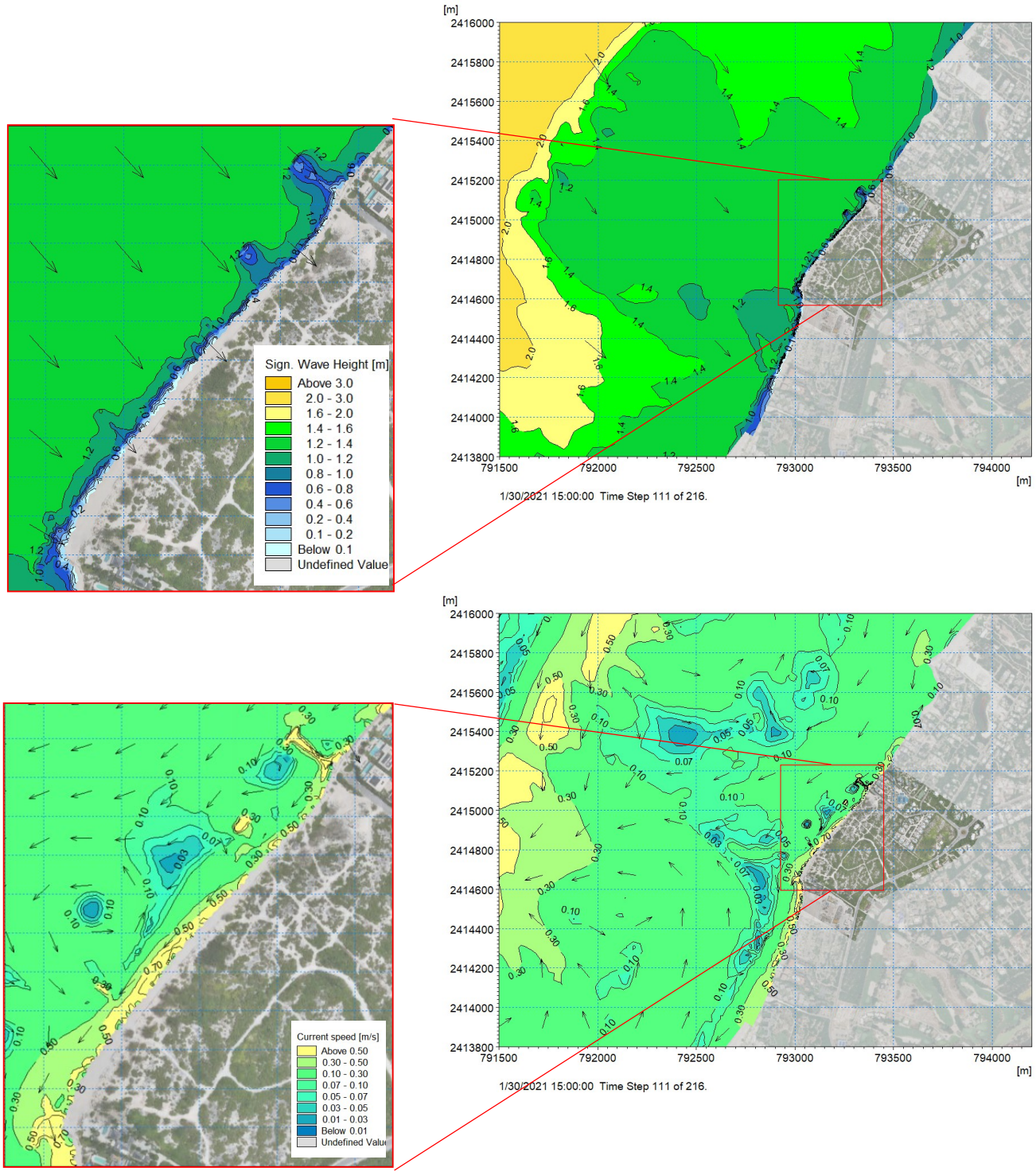


Figure 46 – Swell waves (top) and currents (bottom) at the peak of the Feb 2021 swell event

The sediment transport results indicate a change in the dominant transport response between day-to-day and swell conditions. Previous LITDRIFT modelling showed that the prevailing day-to-day wave climate primarily drives alongshore sediment transport along the project shoreline. To assess the sediment response during the selected swell event, the MIKE 21 sediment transport results were evaluated in terms of the total sediment load (Figure 47) at the peak of the event and the resulting bed-level change (Figure 48) at the end of the simulation.

At the peak of the swell event, the total-load magnitude (Figure 47) shows that sediment transport is strongly concentrated within a relatively narrow nearshore band along the project shoreline. The highest transport rates occur immediately adjacent to the shoreline, while the magnitude decreases substantially across the reef and within the reef lagoon. This indicates that the most active sediment transport during the swell event occurs within the shallow nearshore zone. When considered together with the total-load transport vectors and current field, the results suggest that, in certain nearshore areas, the swell event introduces a stronger cross-shore component of sediment transport in addition to the predominantly alongshore transport identified under day-to-day wave conditions.

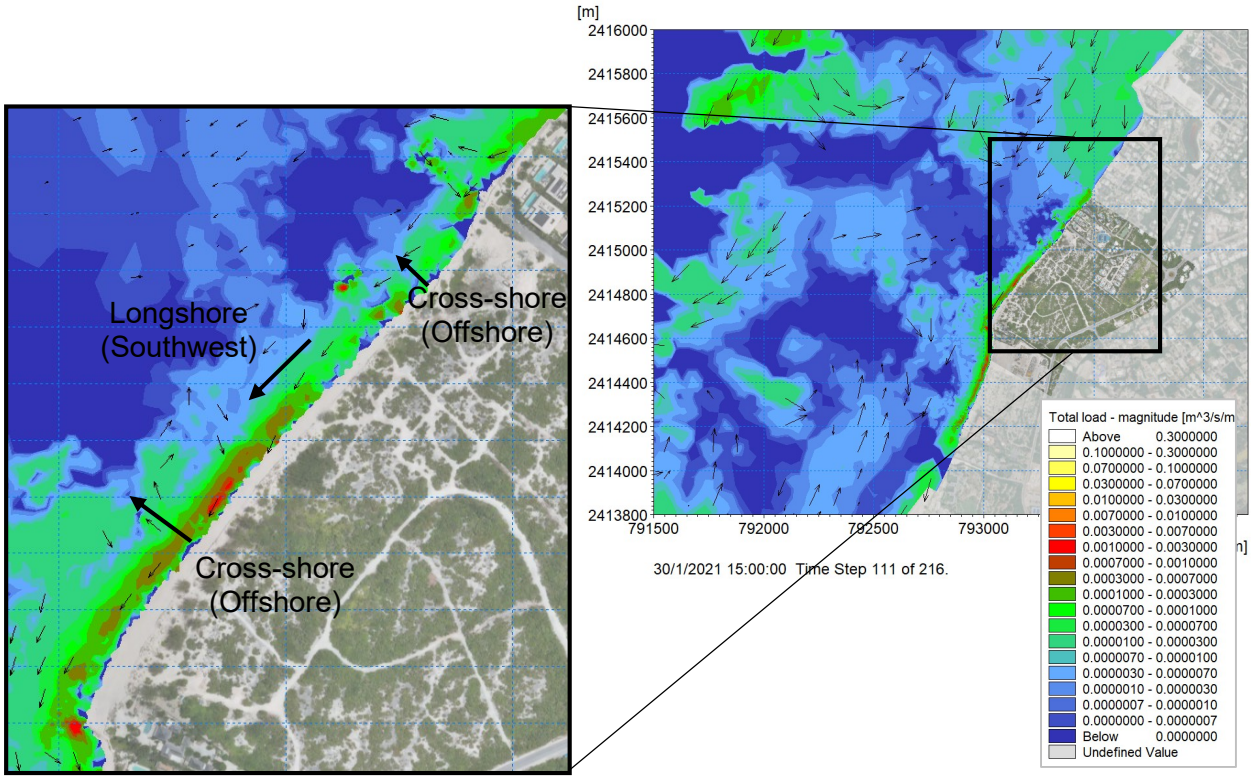


Figure 47 – Total sediment load magnitude and transport direction at the peak of the selected swell event (Higher transport rates are concentrated along the nearshore zone, with predominantly alongshore transport and locally stronger cross-shore components.)

The bed-level change at the end of the simulation (Figure 47) shows the cumulative morphological response to this transport. Across the reef and reef lagoon, bed-level changes are more spatially variable and do not form a clear, continuous pattern. In contrast, along the project shoreline, the response is concentrated within the same nearshore zone identified in the total-load results.

Figure 48 shows the cumulative morphological response to this transport. Bed-level changes that occur within the reef bank are generally more spatially variable and do not form a clear, continuous pattern. Within a 100m zone around the waterline, there is erosion of the order of 0.4–0.8 m, and alongshore deposition of approximately 0.2–0.6 m. The erosion at the beach face and deposition at the underwater beach slope indicates substantial redistribution of sediment within the nearshore zone, with locally stronger cross-shore responses in areas where the currents are directed seaward.

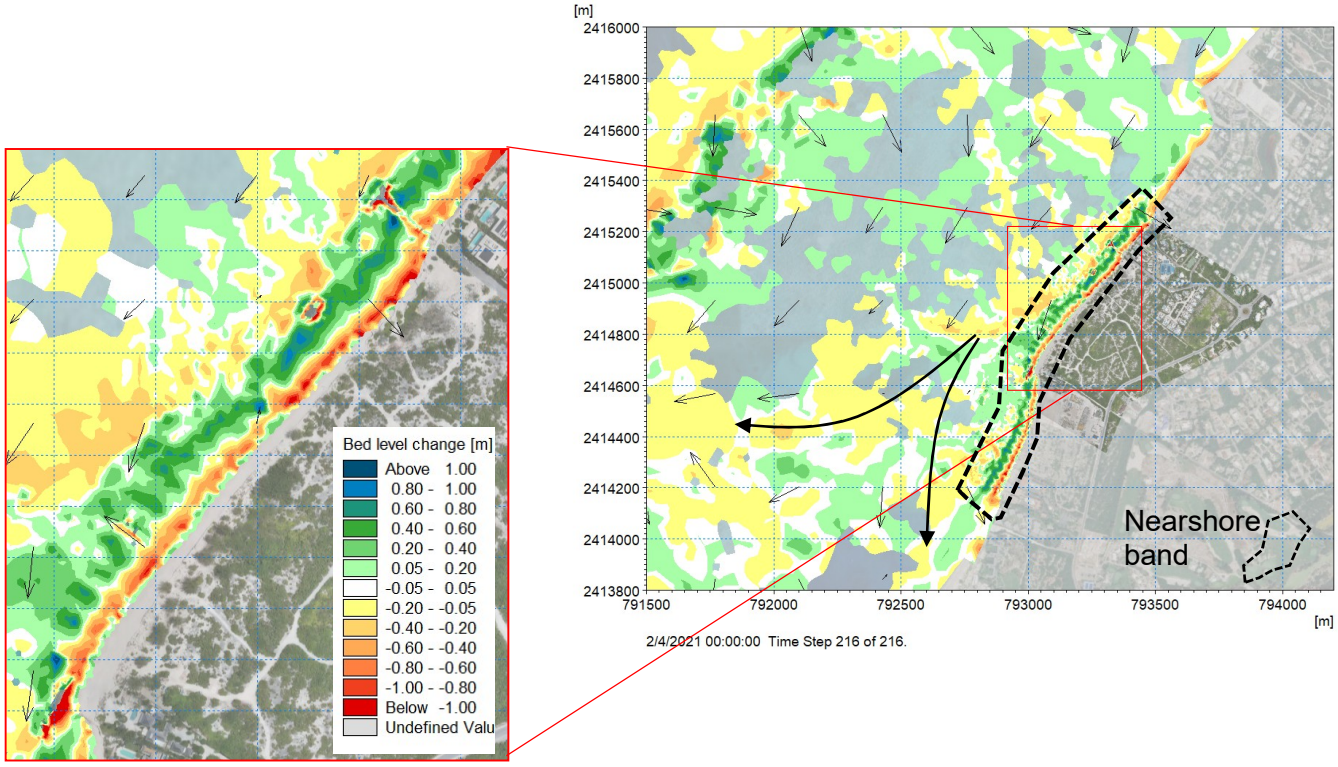


Figure 48 – Sediment transport result showing the change in bed level at the end of the Feb 2021 swell simulation with simplified vectors showing the direction of transport

Wave Run-up on Beach Slopes

During energetic swell events, wave runup can temporarily raise the maximum water elevation reached on the beach above the still-water level. Its magnitude depends on the wave incident conditions and on the local beach geometry and surface characteristics. As illustrated in Figure 48, the total elevation reached at the shoreline reflects the combined influence of static water-level components, such as tide and water-level anomalies, together with dynamic components including wave setup and wave runup.

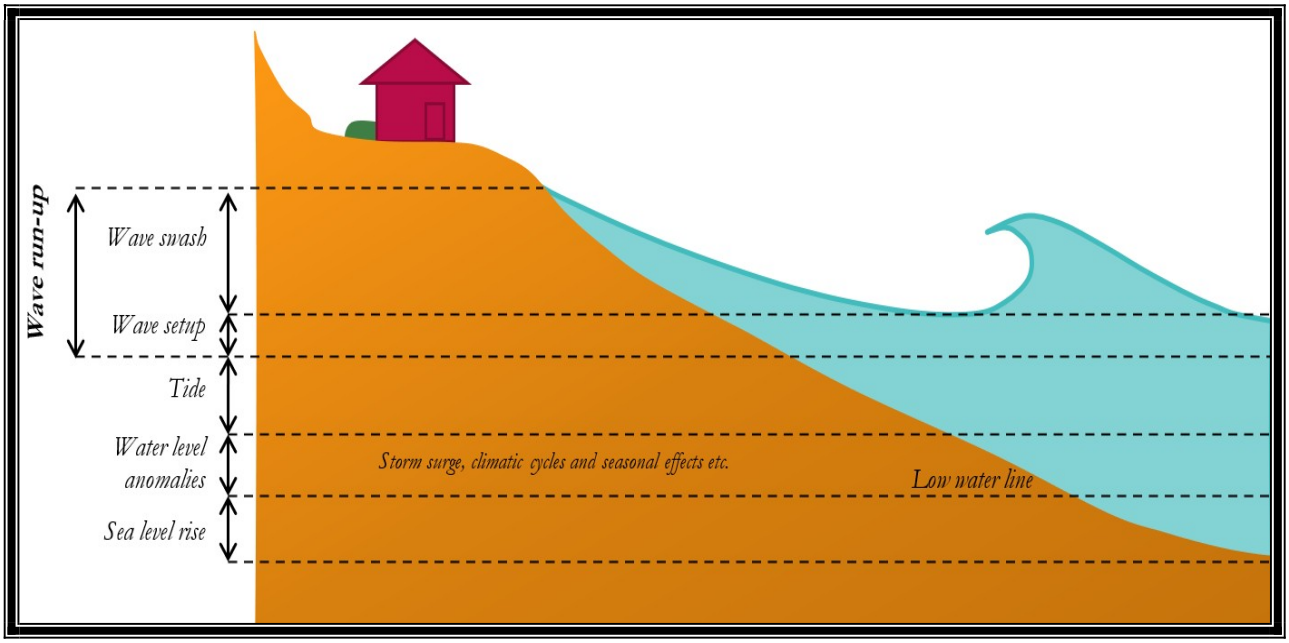


Figure 49 – The water level components that contribute to coastal flooding adapted from (Vitousek, et al., 2017).

Wave runup is therefore assessed separately to better represent the upper extent of wave action at the shoreline and the potential exposure of coastal infrastructure. Wave transformation from deep water to the project shoreline was assessed using two complementary numerical models. MIKE 21 was applied at the island-wide scale to simulate the transformation of offshore waves as they propagated across the regional bathymetry toward the project site. The resulting nearshore wave conditions were then used as boundary inputs for a higher-resolution 2-dimensional XBeach model covering the nearshore shelf and project frontage. This nested modelling approach combines the regional coverage of MIKE 21 with the finer spatial resolution of XBeach required to assess local wave transformation, wave runup and shoreline response, while maintaining computational efficiency.

For the selected swell condition, the 2D XBeach results show significant spatial variability in wave transformation, runup and morphological response across the Palace Resorts frontage. The non-hydrostatic simulation was forced with an offshore wave condition of approximately 1.3m, wave period of 12.2s coming from the north-west, with sediment transport and morphology included. This condition represents the highest wave conditions over the shelf during the Feb 2021 swell.

Within the model domain, significant wave heights (Figure 49, right) reached approximately 1.6 m before progressively transforming across the nearshore system. The maximum runup envelope (Figure 50, left) extended 6.7m landward along the

frontage, with maximum modelled runup of 0.9 m (Figure 50, left). The sedimentation/erosion results (Figure 50, right) show an alternating pattern of erosion and deposition, with maximum erosion of approximately 1.0 m and maximum deposition of approximately 0.54 m. These changes are spatially concentrated rather than uniform, indicating localized sediment redistribution associated with wave breaking, runup and nearshore circulation during the swell event.

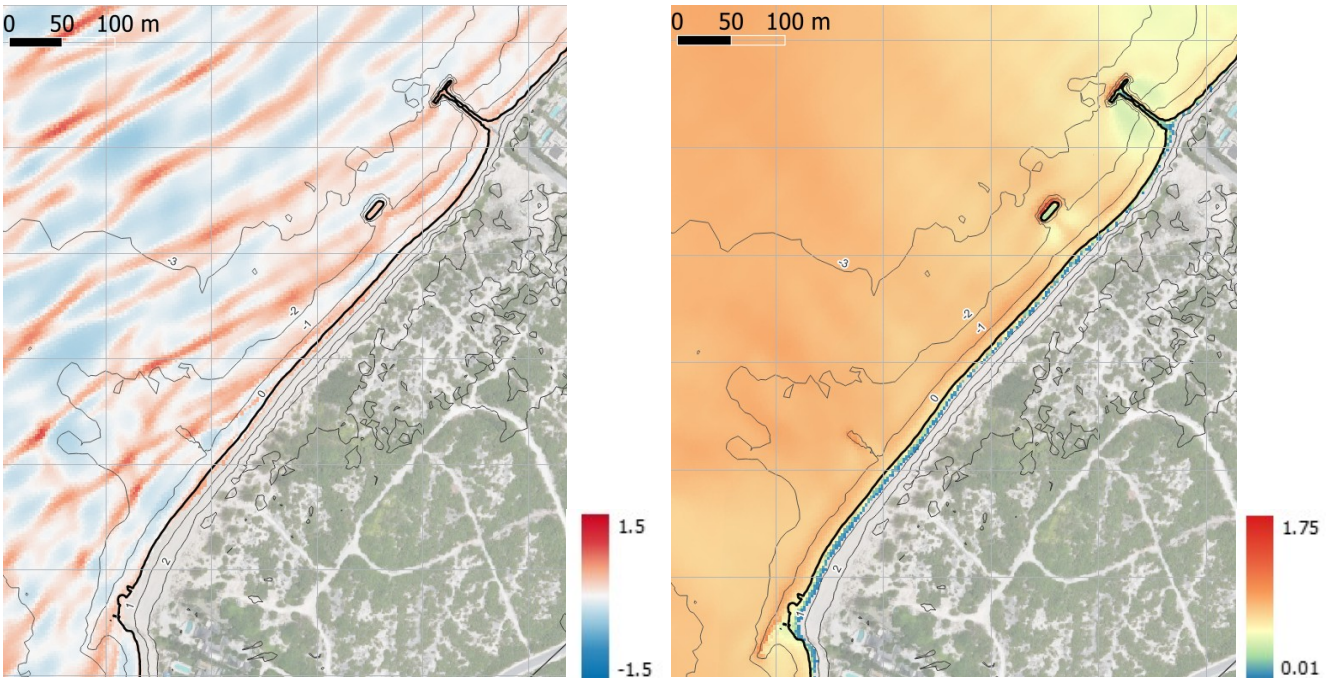


Figure 50 – XBeach 2D results for the selected swell event showing the modelled water-level field (left) and significant wave height distribution (right) across the Palace Resorts frontage

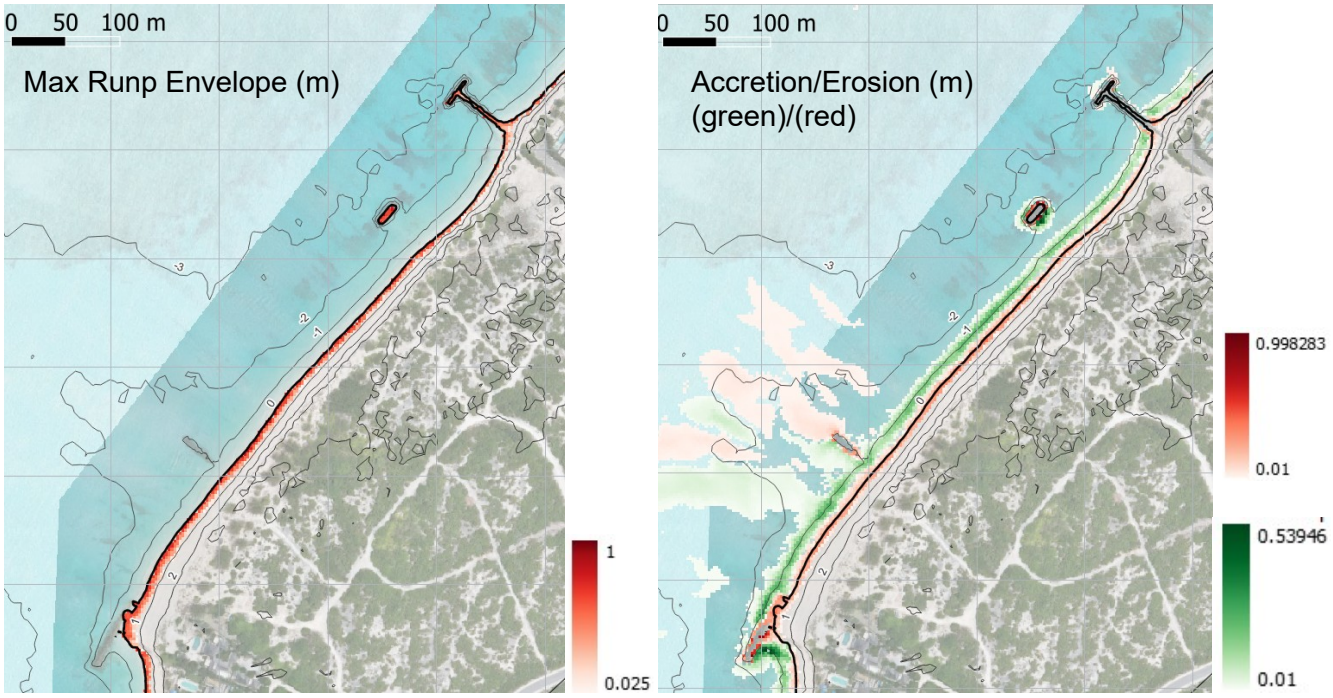


Figure 51 – XBeach 2D results for the selected swell event showing the maximum wave-runup envelope (left) and modelled bed-level change (right), with green indicating accretion/deposition and red indicating erosion

2.5.3 Erosion and Accretion

This section presents a satellite image-derived assessment of historical shoreline positions along approximately 560m of the project frontage. It describes the image dataset, spatial measurement framework, shoreline-mapping method and limitations, and the shoreline changes observed between the available image dates. The results provide historical context for interpreting the present shoreline condition and informing the subsequent coastal-process assessment.

The shoreline-change assessment used 14 georeferenced image datasets comprising 13 Sentinel-2 satellite images and one UAV-derived orthomosaic. The Sentinel-2 images were acquired between 5 March 2018 and 24 September 2025, while the final shoreline position was mapped from georeferenced UAV imagery acquired on 1 June 2026. Together, the datasets provide a series of discrete shoreline observations at approximately semi-annual intervals over much of the record, subject to image availability and sufficiently clear shoreline visibility. It is worth noting that the entire analysis occurred after the year 2017 in which the islands of Turks and Caicos were hit by two major hurricanes (Maria and Irma). Therefore, the beach may have been in an eroded state prior to the analysis.

For each image date, the visible boundary between exposed beach and water was mapped and intersected with regularly spaced shore-normal transects. Changes in the intersection positions were used to describe shoreline movement between the available observation dates. The assessment provides historical context for interpreting the present beach condition; it does not constitute continuous shoreline monitoring.

Table 23 lists the 13 Sentinel-2 images and the June 2026 UAV Ortho mosaic used in the shoreline-change assessment. The timing of Hurricane Dorian and Hurricane Fiona is included to provide a temporal reference for interpreting changes between image dates. The storm-period groupings do not demonstrate that all shoreline change observed between the surrounding image dates was caused by the named hurricane.

Table 23 - Imagery and reference storm events used in the shoreline-change assessment

No.	Date	Record type	Platform	Quarter	Storm-period grouping / role
1	05-Mar-18	Satellite image	Sentinel-2A	2018 Q1	Initial mapped shoreline
2	20-Aug-18	Satellite image	Sentinel-2A	2018 Q3	Additional shoreline observation
3	30-Mar-19	Satellite image	Sentinel-2B	2019 Q1	Additional shoreline observation
4	22-Aug-19	Satellite image	Sentinel-2A	2019 Q3	Final selected image before Hurricane Dorian
—	30-Aug-19	Reference storm event	—	2019 Q3	Hurricane Dorian
5	24-Aug-20	Satellite image	Sentinel-2B	2020 Q3	Shoreline observation
6	04-Mar-21	Satellite image	Sentinel-2A	2021 Q1	Shoreline observation
7	08-Sep-21	Satellite image	Sentinel-2B	2021 Q3	Final selected image before the Fiona-spanning interval
—	20-Sep-22	Reference storm event	—	2022 Q3	Hurricane Fiona
8	14-Mar-23	Satellite image	Sentinel-2A	2023 Q1	First selected image after Hurricane Fiona
9	05-Sep-23	Satellite image	Sentinel-2B	2023 Q3	Shoreline observation
10	18-Mar-24	Satellite image	Sentinel-2A	2024 Q1	Shoreline observation
11	27-Sep-24	Satellite image	Sentinel-2A	2024 Q3	Shoreline observation
12	17-Jan-25	Satellite image	Sentinel-2B	2025 Q1	Shoreline observation
13	24-Sep-25	Satellite image	Sentinel-2B	2025 Q3	Final Sentinel-2 observation
14	01-Jun-26	Georeferenced survey image	UAV orthomosaic	2026 Q2	Final shoreline observation

Note: The shoreline record comprises discrete image dates rather than continuous monitoring. The observations from March 2018 to September 2025 were derived from Sentinel-2 imagery, while the final observation (June 2026) was derived from the project UAV ortho-mosaic. No image was selected from 2022, and the interval between September 2021 and March 2023 therefore spans Hurricane Fiona. At approximately 18 months, any changes between those images cannot be reasonably attributed to Fiona.

A series of regularly spaced shore-normal transects of 1m was projected across the assessment area. For each image date, the shoreline position was measured where the transect intersected the mapped visible waterline. The overall assessment was based on the complete set of valid transects.

Figure 52 shows the assessment boundary, transect layout and locations of representative Profiles 215 and 425. Profile 215 represents the central portion of the frontage, while Profile 425 represents the southern portion. These profiles were selected to illustrate contrasting shoreline responses through time and do not represent the only locations used in the assessment.

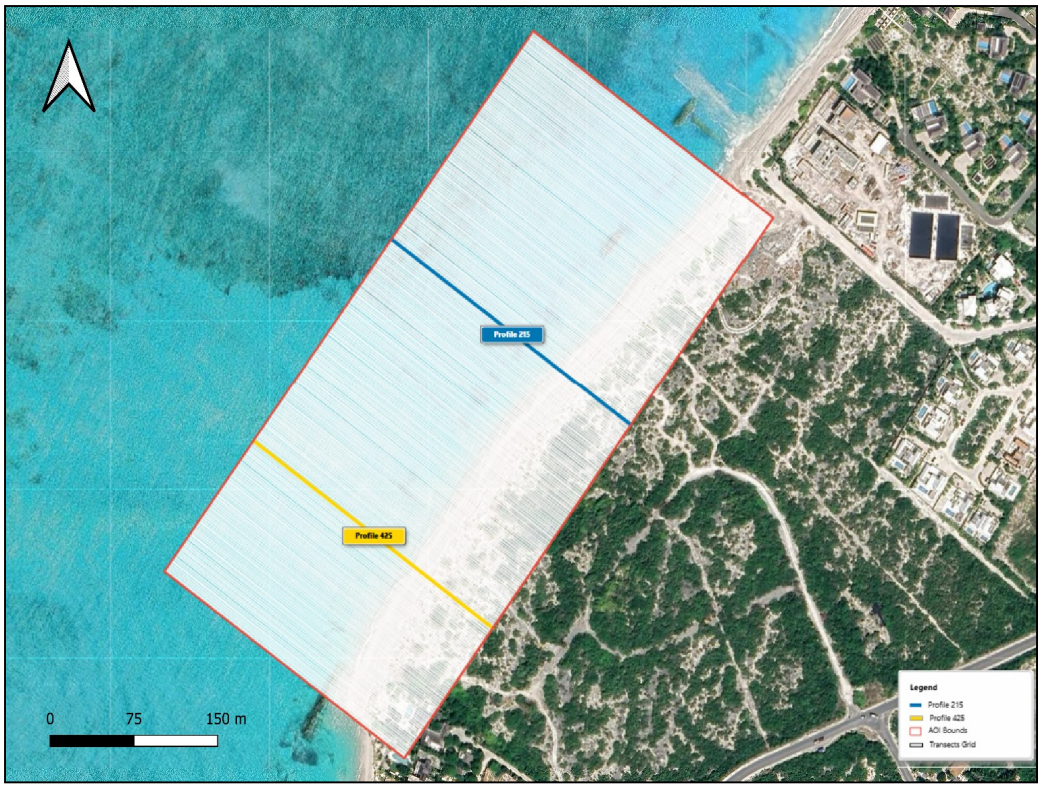


Figure 52 - Shoreline-assessment boundary, shore-normal transect layout and locations of representative Profiles 215 and 425

The imagery used in the assessment is listed in Table

All shoreline positions were mapped within a common WGS 84 / UTM Zone 18N coordinate framework. For each observation date, the shoreline feature was defined as the visible boundary between exposed beach and water.

The shoreline mapping and measurement workflow comprised the following steps:

- Image preparation: The Sentinel-2 scenes were processed using the S2DR3 model-based super-resolution method to produce a nominal 1m output grid for land-water classification. The June 2026 UAV Ortho-mosaic was mapped using the same visible land-water boundary definition.
- Land-water classification: An automated semantic segmentation process classified the processed imagery into exposed beach and water. The boundary between the two classes was converted to a mapped waterline.
- Quality review: The extracted waterlines were reviewed for cloud cover, surf foam, poor water clarity, image artefacts and interference from coastal structures. Ambiguous waterline positions and affected transect results were excluded from the valid dataset.
- Transect measurement: Each mapped waterline was intersected with the regularly spaced shore-normal transects described previously. Shoreline position was recorded as the distance from the fixed landward anchor to the waterline intersection along each transect.
- Shoreline-change calculation: The measured distances were compared between observation dates to determine first-to-final net shoreline movement, the full observed shoreline-position envelope and the shoreline-position histories at representative Profiles 215 and 425.

The Sentinel-2 bands used in the assessment have a native ground sampling distance of approximately 10m. The nominal 1m S2DR3 output is a model-enhanced processing grid used to support land-water classification and waterline delineation. Positional confidence remains governed by the original Sentinel-2 imagery, image co-registration, model reconstruction and the visibility of the waterline at the time of image acquisition.

No site-specific comparison with a simultaneous surveyed waterline has been provided for this assessment. A numerical positional accuracy is therefore not assigned to the individual satellite-derived waterlines. Each mapped line represents the visible waterline at the time of image acquisition and includes the effects of the prevailing tide level and wave run-up. Comparison across the full set of observation dates and transects identifies the persistent alongshore pattern, the net displacement between the first and final dates and the total range of mapped shoreline positions.

Figure 53 and Figure 54 present complementary measures of shoreline movement across the project frontage. Figure 52 shows the net change between the first mapped waterline dated 5 March 2018 and the final UAV-derived waterline dated 1 June 2026.

Figure shows the full horizontal range between the most landward and most seaward mapped waterline positions recorded across all observation dates.

Values are labelled at selected profiles at intervals of 50 profile numbers to show the alongshore variation while keeping the maps legible. On the net-movement map, negative values represent landward movement or erosion, while positive values represent seaward movement or accretion. On the shoreline-position envelope map, the labelled value represents the total observed range of waterline positions at that profile.

Net erosion occurred along almost the entire assessed frontage. At the labelled profiles between P0 and P350, net landward movement ranges from approximately 15m to 23m. The largest values among the labelled profiles occur at P250 and P200, where the mapped waterline moved approximately 23m and 22.5 m landward, respectively.

The magnitude of net erosion generally reduces toward the southern end of the frontage. The labelled values decrease to approximately 12m at P400, 7m at P450 and 9.5 m at P500. At P550, the final mapped waterline is approximately 0.3m seaward of the initial position, representing slight net accretion.

The first-to-final comparison therefore shows a persistent landward shift across the northern and central portions of the frontage, with smaller net displacement and localised accretion near the southern limit.

Figure 54 presents the shoreline position envelope calculated from all valid observation dates. At each profile, the envelope width is the distance between the most landward and most seaward mapped waterline positions. It therefore describes the total horizontal variability recorded during the assessment period.

The labelled shoreline-position envelope widths range from approximately 15m to 27m. The widest labelled ranges occur at P50 and P350, where the mapped waterline occupied a total horizontal range of approximately 27m. Between P0 and P400, the labelled envelope widths are generally between approximately 21m and 27m. The southern profiles show a narrower range of movement. Envelope widths at P450, P500 and P550 are approximately 16m, 15m and 16m, respectively.

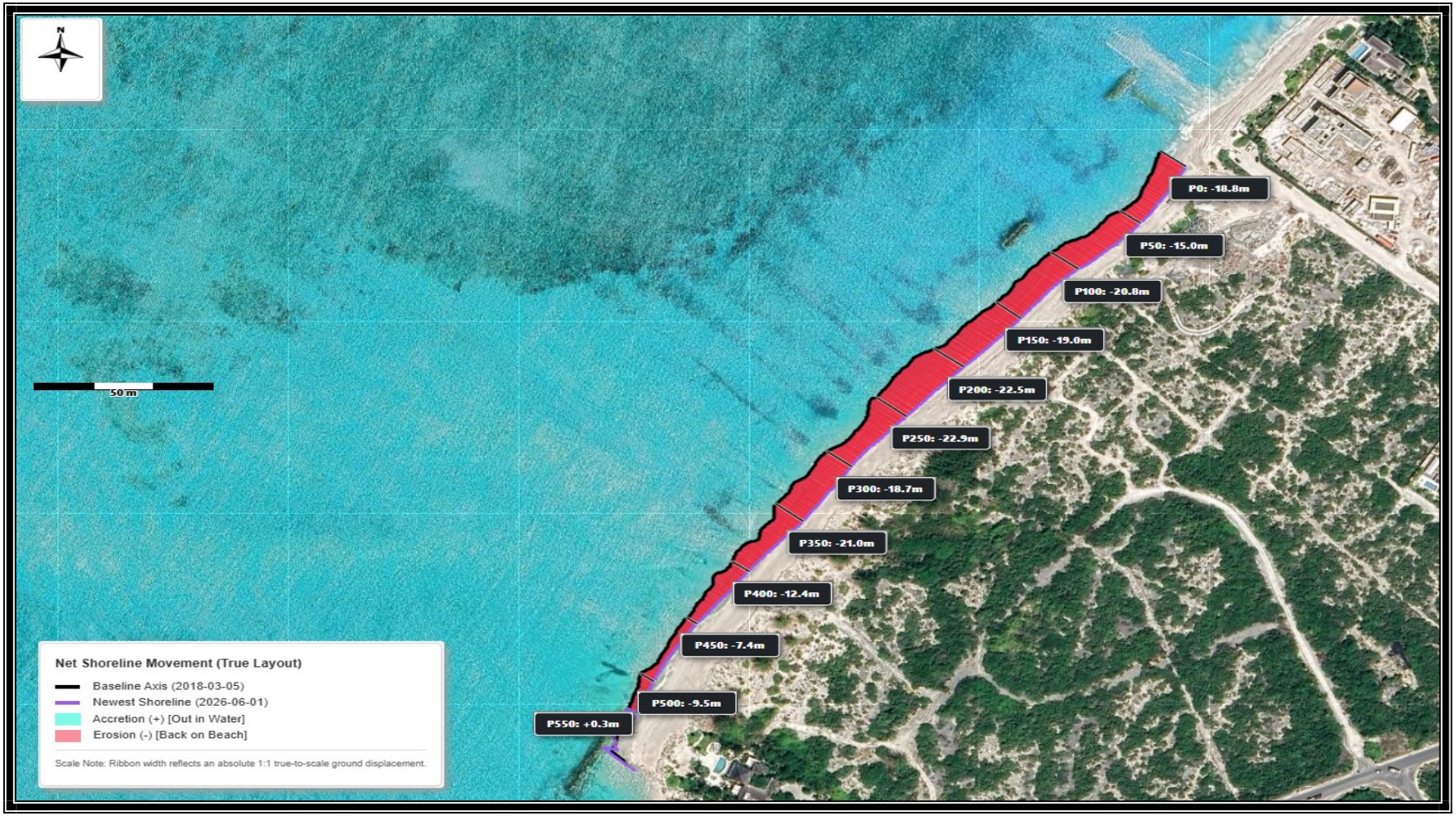


Figure 53 - Net mapped shoreline movement between 5 March 2018 and 1 June 2026. Selected profile labels show first-to-final displacement in metres; negative values indicate erosion and positive values indicate accretion

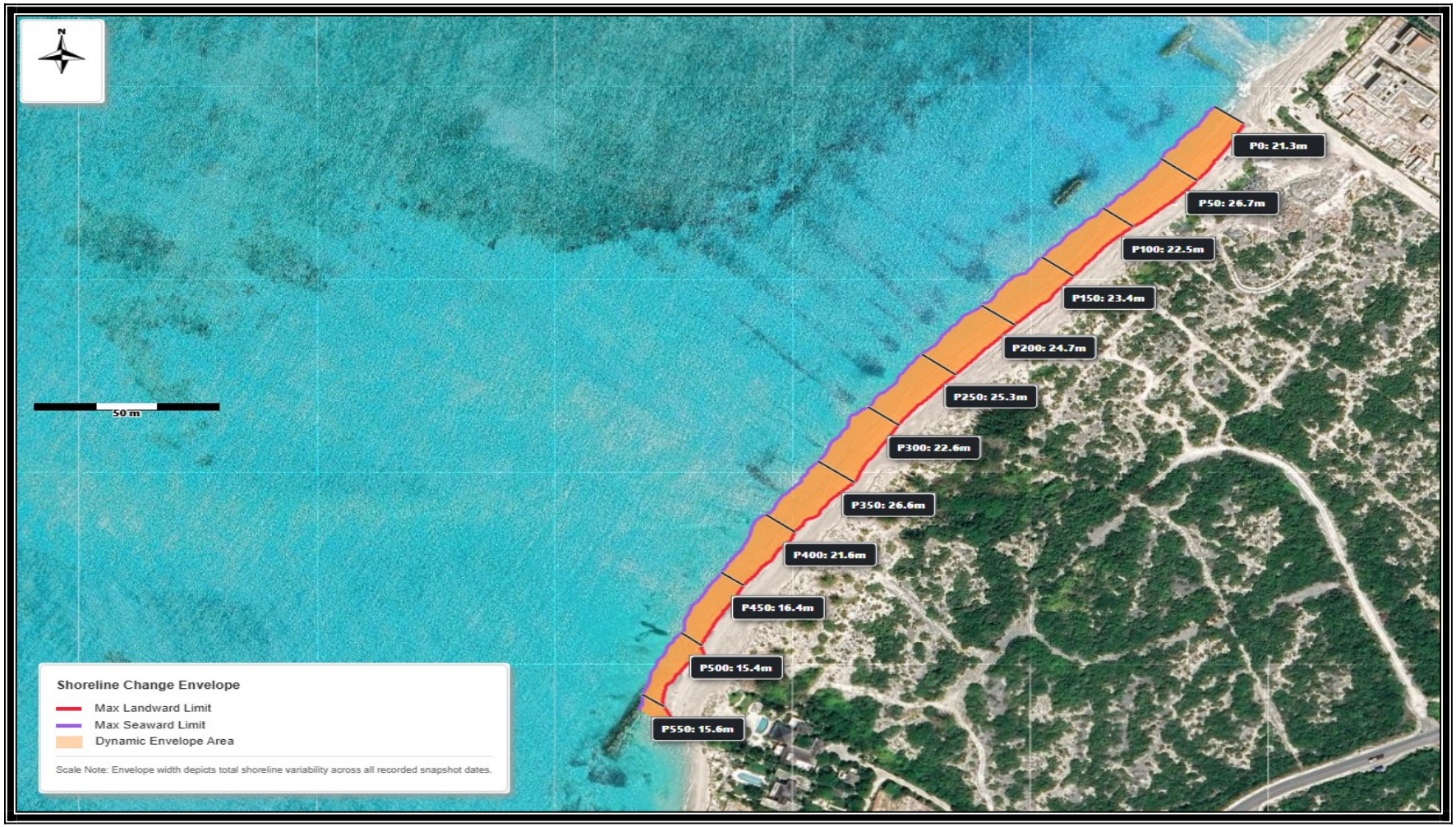


Figure 54 – Shoreline-position envelope between 5 March 2018 and 1 June 2026. Selected profile labels show the horizontal distance between the most landward and most seaward mapped waterline positions

Figure 55 combines the selected net shoreline movements and shoreline-position envelope widths along a common south-to-north chainage. It shows that the largest net landward movements and widest ranges of shoreline variability are generally concentrated through the northern and central sections, while the southern frontage shows smaller net change and a narrower range of movement. Net shoreline movement and shoreline-position range describe different aspects of the shoreline record. At P550, for example, the final mapped position is only approximately 0.3m seaward of the March 2018 position, while the shoreline-position envelope is approximately 16m wide. This indicates that the shoreline moved substantially between the available observation dates before returning close to its initial position.

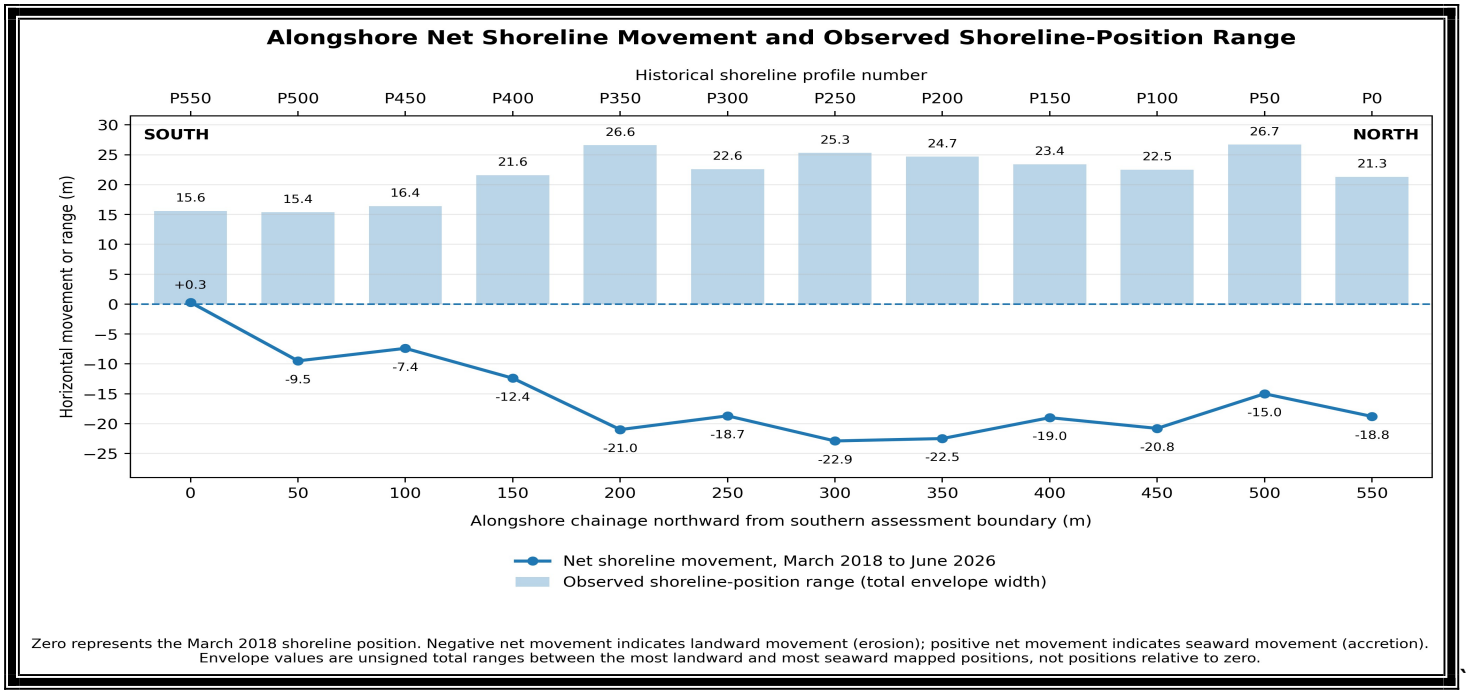


Figure 55 - Alongshore net shoreline movement and observed shoreline-position range, 2018-2026.

Figure 56 compares the complete mapped shoreline-position histories at Profiles 215 and 425. Profile 215 is located within the central frontage, while Profile 425 is located farther south. Each record is shown relative to the mean position calculated separately for that profile. Positive values represent positions seaward of the profile mean, while negative values represent positions landward of the mean. The dashed lines show the fitted linear trend over the full observation period. The hurricane markers provide temporal context, while the measured changes reflect the combined shoreline adjustment occurring between the available observation dates.

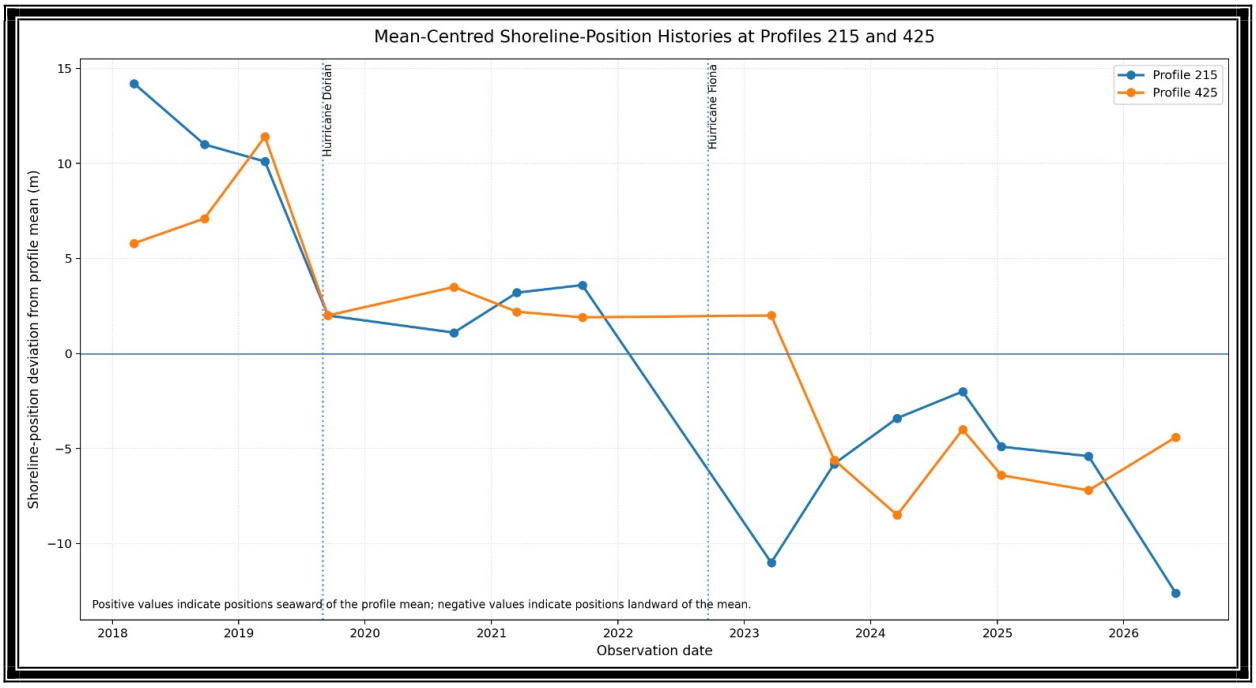


Figure 56 – Mean-centred shoreline-position histories at Profiles 215 and 425, 5 March 2018 to 1 June 2026. Vertical reference lines mark Hurricanes Dorian and Fiona.

Both profiles show an overall net landward shift during the observation period. Profile 215 (blue) recorded approximately 27m of net landward movement between March 2018 and June 2026, while Profile 425 (orange) recorded approximately 10m. Given the limited number of observations and the variability within the data, no annual erosion rate or statistically significant temporal trend is inferred. These results describe the observed change between the widest and narrowest shoreline positions only.

Earlier observations are generally seaward of the respective profile means, while most later observations are landward. Profile 215 shows greater net landward movement, whereas Profile 425 shows less net movement but greater variability between observation dates.

2.5.4 Coastal dynamics

The northern coast of Providenciales is exposed to the Atlantic Ocean; however, the fringing coral reef and shallow platform provide substantial attenuation of incoming wave energy before it reaches the Palace Resorts shoreline. Under typical conditions, wave heights and associated nearshore currents are relatively low. Tidal-only simulations also indicate weak circulation immediately offshore of the project area, with spring and neap tidal currents substantially lower than those generated by energetic wave conditions.

More energetic swell events approaching from the north to northwest can produce increased wave penetration, stronger alongshore circulation and active sediment redistribution within the project area. During the representative swell event assessed, wave-driven currents increased substantially, and localized offshore sediment transport pathways developed, consistent with the sediment plume observed in satellite imagery. XBeach modelling further indicates event-scale adjustment of the foreshore and nearshore profile, with $R_{2\%}$ runup levels ranging from approximately +1.5 to +1.9m MSL. Table 24 summarises the principal nearshore hydrodynamic and coastal-response parameters derived from the numerical modelling.

Table 24 - Summary table of modelling results at the shoreline of the project site.

Parameter	Value	Unit
Average Wave Height	0.1–0.2	m
99th Percentile Wave Height	0.4–0.6	m
Average Wave-Generated Currents	0.05–0.10	m/s
99th Percentile Wave-Generated Currents	0.10–0.20	m/s
Tidal Current (Neap)	~0.02	m/s
Tidal Current (Spring)	~0.04	m/s
Predominant Sediment Transport	Alongshore, southwest	-
Swell Wave Height	0.8–1.0	m
Swell Current Speeds	0.10–0.25	m/s
Swell Erosion on Beach Face	0.4–0.8	m

2.6 Water Quality

Water Quality has been analysed under two parameters, Physical Water Quality and Chemical Water Quality.

2.6.1 Physical Water Quality Analysis

A total of nineteen (19) samples were taken and recorded, with six (6) being taken in the near-shore environment and thirteen in the offshore environment. Readings were then compared to that of local standards (see Table 20). Where there were no standards for Turks and Caicos, universal standards were used. Measured water quality parameters were generally within the expected ranges for a coastal marine environment, with the exception and salinity. Salinity values were marginally elevated in the offshore environment. Although the value is slightly higher than the standard, it's plausible for marine waters of the Caribbean to be under localized conditions. The value is representative of the marine conditions at the time of the assessment and is not, in isolation, indicative of an adverse environmental condition. Slight elevation can be due to slightly elevated evaporation rates, and decreased rainfall during the summer months.

See Appendix Q-1 for results of the physical al water quality samples.

2.6.2 Chemical Water Quality Analysis

A total of three (3) samples were taken and recorded within the near-shore environment. Readings were then compared to those of local standards (see Table 24). Where there were no standards for Turks and Caicos, universal standards were used. Measured water quality parameters were generally within the expected ranges for a coastal marine environment.

Total coliform was measured above 0 Colony-Forming Unit (CFU). This result simply indicates that there is a presence of coliform bacteria in the water; however, total coliform alone is not a definitive indicator of faecal contamination or influx of sewage.

Additional laboratory analysis is currently ongoing, and the results are still pending. Once the results become available, they will be reviewed and incorporated into the report.
See Appendix Q-2 for laboratory results.

Table 25 – Moon Palace Resort Development physical water quality analysis results

Parameter	Water Quality Analysis Range	Marine Water Quality Standards	
		Standard	Source
pH	7.6 – 7.89	6.5–8.5*	FLDEP (2024) Florida Administrative Code Chapter 62-302: Surface Water Quality Standards, Rule: 62-302. 530..
Temperature	29.58 – 30.09	N/A	No fixed water quality standard. Ambient conditions were considered
Salinity	35.5 – 38.61	33–37 ppt	Salinity National Oceanic and Atmospheric Administration (NOAA)
Total Dissolved Solids	32.1 – 34.8	10–35 g/L	United States Geological Survey (Barlow 2003)
Dissolved Oxygen	6.11– 7.88	> 4mg/L	U.S.EPA 1986

* Note: If natural background is higher than 8.5 units, the pH shall not vary above natural background or vary more than one unit below natural background of coastal waters.

Units

mg/L=milligrams per litre

µg/L = micrograms per litre

g/L–grams per litre

NTU= Nephelometric Turbidity Unit

°C = Degrees Celsius

ppt = parts per thousand

mS = milliSiemens

Table 26 – Moon Palace Resort Development chemical water quality analysis results

Parameter	Water Quality Analysis Range	Marine Water Quality Standards	
		Standard	Source
Ammonia Nitrogen	0 mg/L	N/A	No fixed water quality standard.
Turbidity	0.53 – 1.17 NTU	15 NTU	Department of Environment and Coastal Resources (DECR)
Nitrate	0.9 – 1.1 mg/L	0 – 10 mg/L	DEHS/FDEP/WHO Water Guidelines
Nitrites	0.37 – 0.56 mg/L	0 – 10 mg/L	DEHS/FDEP/WHO Water Guidelines
Total Coliform	91 – 200	0 CFU	DEHS/FDEP/WHO Water Guidelines

Units

mg/L=milligrams per litre

NTU= Nephelometric Turbidity Unit

CFU = Colony-Forming Unit

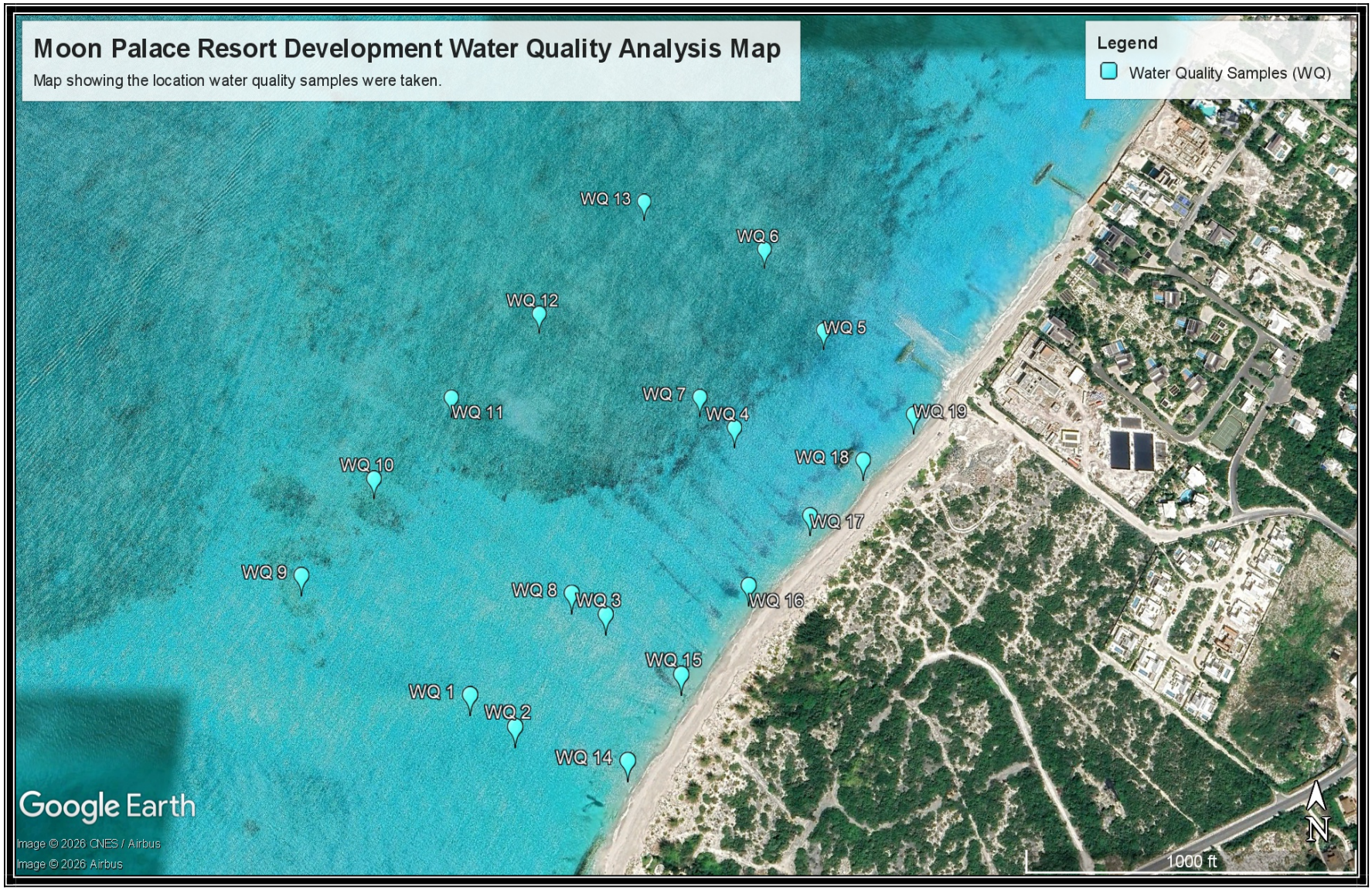


Figure 57 – Moon Palace Resort Development Water Quality Analysis

2.7 Socio-Economic

Generally, all respondents thought that the proposed development would be positive economically. The minor perceptions of negativity were expressed by those locals that were concerned about being disenfranchised and the tourists, particularly those of African American descent that felt that the island was over developing. Figure 58 and 59 below shows the percentage of respondents on the perception of the socio-economic benefits of the proposed development on local residents.

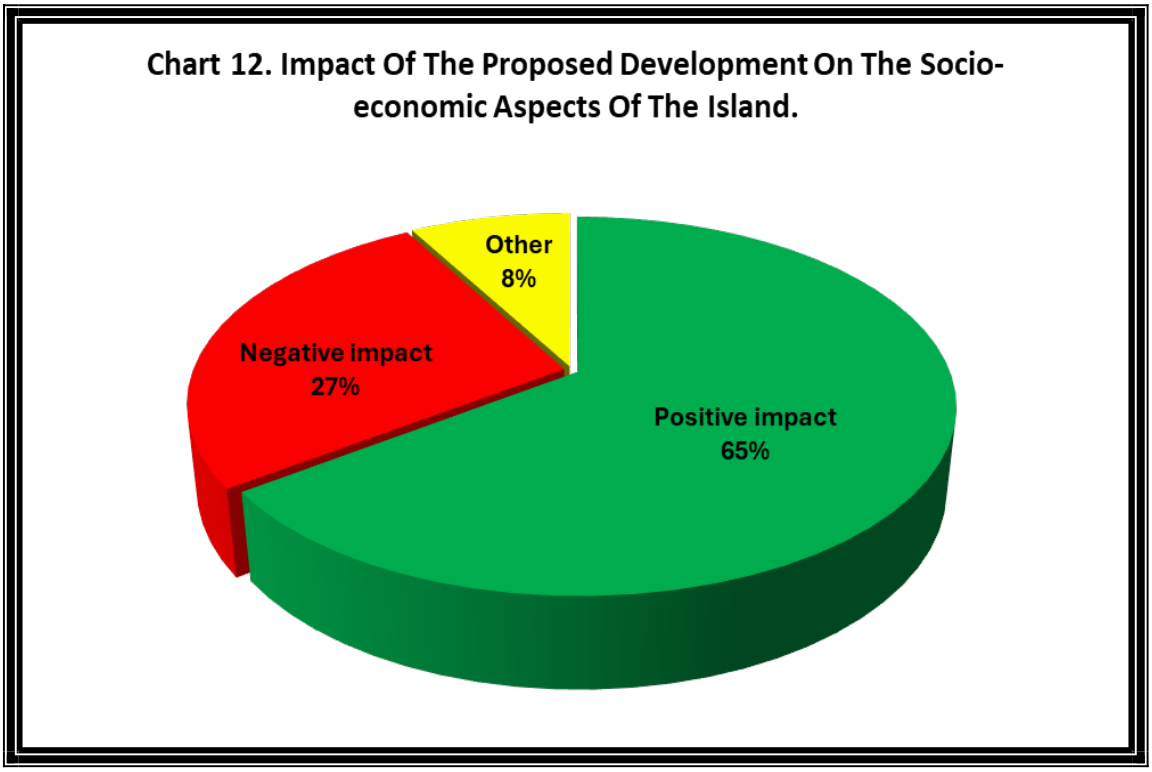


Figure 58 - Percentages of respondents on the perception of socio-economic benefits.

Discouraged from Using the Beach During Operation of Hotel

Most of the respondents stated that they would not be discouraged from using the beach because of the proposed resort development.

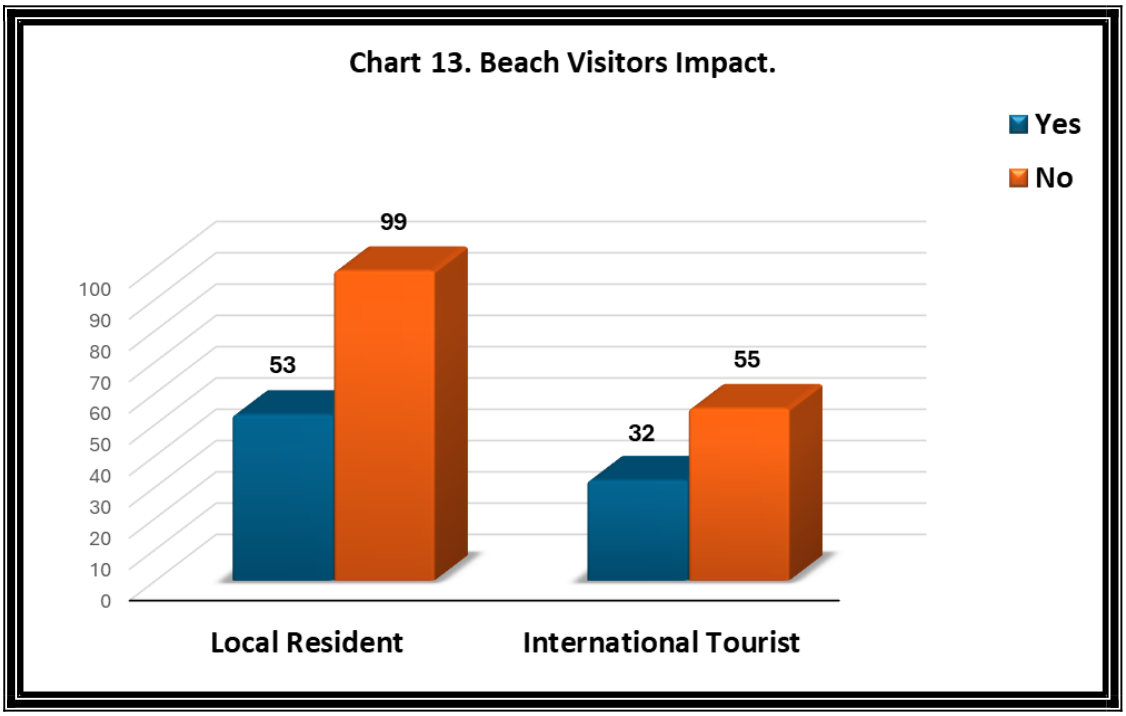


Figure 59 – Beach Visitors Impact

Respondents will not be discouraged from Using the beach after the hotel is completed.

Other Findings

Thirty-eight percent (38%) of respondents thought wildlife would be impacted but not by a large majority because twenty-four percent (24%) of respondents were neutral and twenty-one percent (21%) of respondents disagreed. A significant majority agreed that noise levels in the area would be significantly greater. Surprisingly litter was not a foremost concern. The perception that the impact on water clarity would be negligible was agreed by the majority. Many felt that occasional beach nourishment may be necessary although a significant number of respondents were neutral on the matter. These other findings are detailed in the appendix of the report.

The Turks and Caicos Islands (TCI) is a British Overseas Territory and uses the United States (US) Dollar. The political environment is generally stable, governed by a Cabinet of Ministers selected from the majority Government in Parliament, alongside a United Kingdom (UK) appointed Governor. The institutional relationship with the UK is often perceived as a core reason for the territory's strong financial stability and institutional credit worthiness. It successfully leverages its pristine natural environment to capture high-value global capital, resulting in remarkable public cash reserves and luxury private condo-hotels and resorts. It possesses one of the highest levels of GDP per capita in the Caribbean, a stellar sovereign credit rating (A-/Stable affirmed by S&P

Global), and robust fiscal surpluses. The downside is that the economy is characterized by extreme import reliance, high cost-of-living, and a high influx of immigrants. TCI is amongst the most expensive places to live in the Caribbean.

Tourism (all encompassing, including but not limited to real estate and construction) is the ultimate engine of the economy; directly and indirectly accounting for roughly 65% of GDP. Offshore Finance plays a major role (banking, insurance and trust companies, benefiting as a tax haven with no personal, corporate or income taxes), although not in the same league with the Cayman Islands and the British Virgin Islands. Government revenues are generated primarily from stamp duties as an offshoot from tourism (real estate sales and transactions) and government tariffs (import duties) with over 90% of all food, consumable goods, and building materials being imported, primarily from the United States.

Providenciales (Provo) is the financial and commercial center, housing most of the population and luxury developments. In contrast, the "Sister Islands", like North Caicos, Middle Caicos, South Caicos, Salt Cay, and Grand Turk, the capital, remain less developed and economically challenged.

The booming tourism and construction sectors require a massive importation of labor that is not readily available locally. The TCI relies heavily on expatriate labor. This has caused an influx of migrant laborers from neighboring countries like Haiti, the Dominican Republic, and Jamaica.

At the Business Forum, which was held on the 5th of June 2026, the Hon. Premier of the TCI presented a paper entitled “Tightening foundations for long term prosperity”. The emphasis was placed on building an economy that can withstand international shocks that have resulted from the reshaping of international supply chains. The foregoing has caused the TCI Government to strategize a new way forward. This reshaping has impacted energy, food security, and determined investment decisions. Decisions must be made and measures must be taken that will strengthen and ensure an economic future for TCI. Building a strong economy today will ensure a secure tomorrow. The Moon Palace Resort is envisaged as a key component of investing in a stronger and wiser today to secure a sustainable economic future for the TCI.

The Premier highlighted few of the strong points of the socio-economic standing within the TCI. These are as follows:

a. A Government that is committed to strengthening the socio-economic foundations of today to secure a strong tomorrow in the global economy.
b. The commitment towards economic diversification.
c. A 1.3-billion-dollar economy.
d. Robust foreign direct investments.
e. Strong Government revenues.
f. High Investor confidence.
g. The acknowledgement that growth alone is not success and does not guarantee resilience.
h. The recognition that a better quality of life for future generations is the key.
i. Transitioning from the past growth of buildings to the future of human development.
j. Economic diversification.
k. Creation of lasting prosperity.
    - Health Care
    - Education
    - Infrastructure
    - Housing

In pointing to the future, the Premier pointed to some key areas to be focused upon and developed that would guide the TCI economy forward and into the future:

Sound Public Finances & Institutional and Fiscal Management: Fiscal responsibility is about creating confidence and sustainability. Without sound public finance management, the TCI Government (TCIG) becomes unsustainable. TCIG is one of the few Governments in the region with a Triple B rating.

Modernization of Public Institutions: Led by the Ministry of Innovation, Technology, and Energy, public institutions of the TCI are undergoing a sweeping, multi-million-dollar modernization, which aim to completely shift government operations into a "24/7 high performance" digital model. (The Sun Newspaper, Thursday, 20th August 2026 – E-Government Minister E. Jay Saunders pushes digital transformation following regional artificial intelligence talks).

Sustainable Tourism and Stewardship:

- Protection of Environmental Assets (Reefs, Beaches, Quality of Life).
- Quality over Quantity.
- Prevent uncontrolled development expansion.

- Institute a comprehensive Spatial Developmental Policy.

Strategic and Balanced Development Across the Islands or Archipelago:

- South Caicos is emerging as a boutique tourism destination and strengthening its fisheries.
- North Caicos for Farming and tourism.
- Salt Cay for low density and sensitive development.
- Grand Turk for heritage tourism.
- Middle Caicos for farming and eco-tourism.
- Providenciales for commerce and tourism development.

Modern Infrastructure for a modern economy: Population and tourism growth has outgrown planning. If tourism and population growth continues without corresponding infrastructure investments, then growth will be strained. Plans for the airport modernization and seaports redevelopment must be implemented.

Strategic Investments and Responsible Borrowing: The Premier and Finance Minister announced a strategic borrowing plan to secure US$350 million to fund infrastructure development and upgrades, including affordable housing, healthcare, education, and government service digitization. Specific projects target roads and ports; like the South Dock Port expansion and the Howard Hamilton International Airport redevelopment. He pointed to the fundamental reality that the government cannot finance growth from cash reserves. This would constrain government investment.

Transition to Enabling Growth:

- Investing to support tomorrow's opportunities.
- Citizens must be able to sustain themselves in an economy that they have created.

Human Development:

- Technologies.
- Entrepreneurship.
- Opportunities.
- The goal being to ensure that Turks and Caicos Islanders are respected.

Diversification: This does not mean the replacement of tourism, but development of other sectors.

- Fisheries.
- Agriculture.
- Aquaculture.

The Road Ahead:

- A National Development Strategy for strengthening and creating a stronger economy and better preparation for the future.
- Transformation and shared prosperity.

2.7.1 Demographics.

The Turks and Caicos Islands (TCI) Statistics Authority has published the population of the TCI as 47,677 people according to the 2022 census data. That figure is projected to increase to 55,525 people by 2027, representing a growth of 16% over the five years. The largest age group by 2027 is expected to be between the ages of 45-49 years. Providenciales are home to more than 75% of the total population as their growth outpaces the rest of the country due to tourism and economic development.

According to the 2012 statistical data, the largest group of citizens are native Turks and Caicos Islanders, accounting for 39% of the population. The remainder, accounting for 61% of the population, were made up of those from Haiti, the Dominican Republic, the United States, Canada, the Bahamas, Jamaica, the United Kingdom, and the Philippines. Haitians, the largest group, accounted for 35% of the 2012 total population (31,458 people), following immediately behind Turks and Caicos Islanders.

2.7.2 Employment:

The Employment Ordinance is the main statute for the administration and operation of employment services and labour within the Turks and Caicos Islands. Other Ordinances that operate in conjunction with the Employment Ordinance would be the Immigration and Customs Ordinances. Some of the areas addressed under the Employment Ordinance include, but are not limited to:

- Basic Employment.
- Contracts.
- Minimum Wage.
- Termination.
- Disciplinary Procedures; and.
- Safety at Work, etc.

Arising out of the Employment Ordinance is an Order for the establishment of the Labour Tribunal which was created primarily to deal with mediation of employment cases or disputes that could not be resolved through the office of the Director, Employment Services Department. For example, those relating to sexual harassment, safety at work, remuneration disputes, termination, etc.
The Employment Ordinance also requires that companies employing more than 15 employees must produce a Staff Plan for the office of the Director of Employment Services.

Currently there are no regulations which mandate a minimum percentage of employees to be "Belongers" or TCI Citizens. The only requirement is that the specific job be advertised with the job description and specifying salary, etc. The application must be submitted to the Work Permit Board. Advantageous for TCI Citizens is that when they are applying for any of the advertised jobs, they must also send a copy of their application to the Work Permit Board. This allows the Board to ensure that any qualified citizen applying for that job has first preference or that any expatriate applicant is assessed against the availability and qualifications of citizen.

The following are ways to improve the system and ensure that TCI Citizens are the direct beneficiaries of development opportunities:

- Demonstrate how they are developing TCI Citizens to eventually fill skilled and senior positions.
- Investment in training, succession and career development opportunities.

2.7.2.1 Labour and Skills Demand – Construction Phase

The construction phase of the massive Moon Palace Resort Development is expected to span over a two-years period and will require many manual and technical construction labour force. There will be a massive demand for mason, carpenters, steel workers, dry-Wallers, painters, and commercial electricians and plumbers and other highly specialized engineering and technical skills. Because the project includes heavy resort infrastructure – such as massive multi-tiered pools, high-capacity wastewater systems, structural stone masonry and complex electrical grids, there will great demand for civil engineers, MEP (Mechanical, Electrical and Plumbing supervisors and heavy equipment operators.

The TCI local construction sector cannot supply the huge volume of labour required to carryout this massive development. While the Moon Palace Company would ensure

that all local contractors, skilled and unskilled workers would be given priority for employment, particularly as sub-contractors, the developer would have to rely on

foreign workers under temporary work permits. The Moon Palace Company would draw on its pool of trained and experienced foreign workers who worked with them on similar projects in the Dominican Republic and Mexico.

According to data provided by the Moon Palace Company (Based on experienced with similar projects) approximately 3,500 workers are needed during the construction phase of the project, of which approximately 30 percent would be locals and 70 percentage foreign.

2.7.2.2 Labour and Skills Demand – Operation Phase

Once the Le Blanc and the Moon Palace Grand Resorts are completed and operated in 2029 with approximately 1,000 – luxury resorts rooms, and amenities including 20 specialty restaurants, wine bars, coffee shops, luxury stores, some 10 pools and other water sports amenities the development is expected to generate thousands of permanent long-term hospitality jobs. The luxury, all-inclusive models of the Moon Palace Grand and Le Blanc brands require a high staff-to-guests ratio across several departments, including Food & Beverage (F&B), Elite Guest Relations & Personal Services, Wellness & Entertainment Operations, Facility Management & Engineering. The skills demand spans multiple tiers, including top and middle level managers, chefs, multi-lingual concierge staff, spa therapists, fitness instructors, entertainment and theater coordinators, housekeepers,

Under the Development Agreement between TCIG and Moon Palace Company, the developers would have to operate under the immigration policy that prioritized the employment of Turks and Caicos Islands. During the operation phase of development, it is anticipated that approximately 2,080 permanent jobs will be created, with approximately 30 percent of that figure will being local employees and 70 percent foreign workers.

2.7.3 Safety/Security Concerns Within the Community.

Under the leadership of the new Police Commissioner, the Turks and Caicos Islands have experienced a historic and dramatic drop in serious crime. Following the appointment, the Royal Turks and Caicos Islands Police Force (RTCIPF) transitioned to an intelligence-led, zero-tolerance strategy that has significantly curbed the island's crime.

By mid-2026, official government and police updates confirmed that overall crime across the territory has plummeted by approximately 50%, with the number of homicides massively reduced. The territory also achieved a major symbolic victory

when there were recorded zero murders in January 2026, marking the first completely homicide-free January for the islands since 2019.

Key Factors Behind the Crime Reduction:

- **Dismantling of Gang Networks**: The RTCIPF launched aggressive, targeted operations that successfully disrupted and degraded the prominent criminal gangs terrorizing residential neighborhoods. Key gang figures were either arrested or fled the territory.

- **Regional Security Support:** The islands utilized strong regional partnerships, notably integrating a highly trained contingent of Jamaican Constabulary Force (JCF) officers to boost local patrol and enforcement capabilities.

- **Weapon and Ammunition Seizures:** Intelligence-driven checkpoints and community raids resulted in a record surge of illegal firearm recoveries and hundreds of rounds of ammunition taken off the streets.

- **Remaining Challenges:** Despite the dramatic turnaround, the Commissioner has warned the community against complacency. Law enforcement's most pressing current challenge is a troubling rise in youth and teenager involvement in localized commercial robberies and minor offenses, prompting the government to launch community programs.

2.7.4 Economic Impact: Short-Term and Long-Term.

Tourism is the engine of the economy of the Turks and Caicos Islands (TCI). Everything trickles down from tourism. The proposed 1000-bedrooms resort will become the anchor development for the island of Providenciales and hence the TCI, like that of *Beaches* TCI. *Beaches* were developed over a twenty (20) year period whereas the Moon Palace Resort is proposed to be completed within two (2) years. At the TCI Business Outlook Conference 202, the hon. minister for Tourism, Agriculture, Fisheries, Heritage and the Environment detailed five (5) focused areas for tourism within the TCI, namely:

Economy: Resorts, Hotels, Condominiums, and Villas generating and supporting business ventures with Turks and Caicos Islanders; and the creation of employment.

Education: This is the key to the success of the TCI. A high quality of life with a ready and educated populous by 2040 and the creation of a nation that is resilient.

Environment: The protection of the environment and its natural resources must be a high priority.

Health: Health and wellness in the TCI are essential.

Heritage: We must believe in and preserve our heritage.

Culture: Our strength lies in our culturally immersive experiences.
Significant impacts from developments of the magnitude proposed a 1000-bedrooms resort development will occur during the construction and operational phases of the proposed development. Whilst making a major injection into the islands' economy, it places stress on local infrastructure, social and welfare services, the environment, and communities.

It is suggested that within the short and long term, there will be positive and negative impacts associated with the proposed development:

Long Term Impacts

Long Term Positive Impacts

A project of this scale generates significant, compounding long-term benefits across several key areas:

- A 1,000-room luxury footprint would serve as a major driver for the country's primary revenue sources. It yields millions annually through the Accommodation Tax (the largest single contributor to TCI's $549M+ budget), along with ongoing import duties on resort provisions, work permit fees, national insurance contributions, health insurance contributions, etc.

- Consistent tax windfalls from large-scale hospitality help maintain the territory's fiscal surpluses. This strengthens its S&P Global 'A-' credit rating and preserves a low national debt-to-GDP ratio.

- A resort of this size requires a permanent workforce of 1,500 to 2,500 direct employees across management, hospitality, culinary arts, marine biology, and engineering.
- Major hotel groups typically subsidize advanced training hubs, professional certifications, and hospitality academy pipelines, elevating the baseline skill level of Turks and Caicos Islanders.

- High-quality, stable employment at a premium resort creates a viable pathway for TCI nationals to build permanent, lucrative careers locally rather than migrating abroad.

- Over a multi-decade horizon, the hotel will create a massive and recurring demand for local businesses. This directly benefits:
  - **Excursion Operators:** Increased bookings for diving companies, boat charters, and Eco-tours.
  - **Transportation Providers:** Long-term business stability for taxi unions and transport fleets.
  - **Agriculture and Fisheries:** Consistent, high-volume commercial purchasers for local fishers and farming operations.

- A 1,000-bedroom destination provides the guaranteed volume required to negotiate permanent, year-round international flights. This attracts expanded flight capacities from major carriers like American Airlines, British Airways, and Air Canada.

- To support the resort's massive utility demands, the government and utility suppliers must invest in long-term civil infrastructure. This results in superior road networks, expansion at the water plant operated by Provo Water Company, green energy grids, and improvements and upgrades to telecommunications that benefit the broader community.

Long Term Negative Impacts

Traditionally, the Turks and Caicos Islands (TCI) economy relies on a low-density, high-yield luxury tourism market. A 1,000-bedroom hotel on Grace Bay represents a new concept and opportunity, but there are associated negative impacts. The primary long-term negative economic impacts include:

- The local TCI labor pool cannot support the thousands of operational roles required by a 1,000-room resort. Massive reliance on imported work-permit

holders shifts the tax burden onto public services, as the government must expand schools and healthcare infrastructure to support the increase in population/users of these services.

- Mega-resorts are frequently foreign-owned and often operate on all-inclusive models. A significant portion of the profits bypass the local

  economy, flowing directly back to international corporate headquarters rather than circulating locally.

- Massive on-site dining, retail, and entertainment options keep guests spending inside the resort enclave. This reduces the foot traffic and revenue flowing to independent local restaurants, boutique shops, and local tour operators.
- Increased strain on the electrical grid and water supplies forces utility companies to invest heavily in capacity upgrades. These capital expenditures are often passed down to local residents and existing small businesses in the form of higher utility rates.

- A massive, single-property asset makes the TCI economy highly sensitive to the financial health of one corporate brand. If the resort operator faces bankruptcy, a management crisis, or pulls out of the market, the sudden drop in visitor arrivals would trigger severe, widespread economic shockwaves across the island.

- This will further exacerbate the disparity between Providenciales and the remaining lesser developed islands, in particular Grand Turk, the capital.

Others.

The terms of reference as presented are comprehensive and extensive, in many sections repetitive. We are satisfied that the topic areas that have been addressed adequately satisfies a sufficient assessment of all relevant parameters.

2.7.5 Infrastructure and Public Services

Some of the major challenges for the planned Moon Palace Resort 1,000 luxury hotel resort development for Grace Bay Beach and Leeward community comes at a time of unprecedented grow on the Island of Providenciales, Turks and Caicos Islands includes utilities carrying capacity – the existing electrical grid, water and wastewater management and solid waste management, transportation and traffic management,

and employee housing. The Moon Palace developers are in discussions with the Government of the Turks and Caicos Islands, Pelican Energy TCI, Provo Water Company and several government agencies and departments on dedicated infrastructure or utilities expansions to directly support the proposed developments.

Pelican Energy TCI has assured Moon Palace Company that they have the capacity to meet electrical demand requirements during the construction phase and once the electrical demands for the operation phase are agreed and assessed the appropriate expansion to the existing generation plant can be made. The plans for the Moon Palace Resort Development include on side development of backup water generation facilities, Wastewater management facility and backup electrical generation supply.

Short-term and long-term traffic management strategies are included in the Traffic Management Plan to address increase levels of traffic to be generated because of the proposed development, these include on-site traffic and Grace Bay Road management strategies. Island-wide traffic management strategies are also recommended.

2.7.6 Housing and Community Dynamics

The Turks and Caicos Islands, in particular Providenciales has a housing shortage crisis, facing mainly the middle- and lower-income groups. The Government Housing Department estimated that approximately 6,000 housing units are needed to meet the housing needs over the next decade or so. The demand for housing is driven by rapid increase in the population due to continued tourism growth, surging land prices and limited land supply. The high cost of housing on Providenciales makes housing unaffordable for low- and middle-income workers. However, government's national housing policy administered via the Department of Housing and Community Renewal helps to assist first time Turks and Caicos homeownership through initiatives such as financial assistance, providing Crown Land at concessionary rates.

The Moon Palace Company plans to implement its own housing initiatives to address the housing shortage on the island, by constructing approximately 1,200 temporary housing units to house construction workers. Additionally, 15 five stories' buildings with be developed off-site to house approximately 2,400 permanent workers.

2.7.7 Tourism and Recreational Value

The proposed Moon Palace Grand and Le Blanc resorts for Grace Bay Beach, Providenciales, Turks and Caicos Islands will add expanded luxury resort capacity to the tourism Market. It will also diversify the tourism market offering on Providenciales by providing high-end luxury resort featuring specialized services. As the largest

investment in the nation's history, the project aims to drive high-yield tourism revenue and create thousands of constructions and operational jobs.

High-end amenities will offer guests access to extensive gourmet dining options, signature spa facilities, and oceanfront suites. The development of large-scale resort recreational facilities will enhance the islands, competitive profile within the broader Caribbean all-inclusive luxury sector, advancing the destination overall tourism appeal.

2.7.8 Cultural and Heritage Considerations

When planning the proposed large-scale 1,000 room resort development on Providenciales, Turks and Caicos, the developers, Planners and Government must carefully balance this massive foreign investment with the preservation of local identity, ecological limits and community well-being. Government must ensure that every Turks and Caicos Islander that able and available for employment are given priority.

Moon Palace Resort Management should team-up with local farmers, fishermen, artisans and tour operators to ensure guest experiences reflect authentic island-culture instead of a closed-loop all-inclusive model. Management should also encourage guests to explore local island restaurants and businesses outside the property.

To develop and preserve Turks and Caicos cultural and heritage and to provide an authentic local heritage experience for hotel guests genuine TCI heritage themes such as Ripsaw Music, local maritime history, and local fora should be integrated into the hotel's local entertainment programs.

2.7.9 Local Economy and Cost of Living

The proposed 1.2-billion-dollar Moon Palace Resort development planned for Grace Bay Beach, Providenciales, Turks and Caicos will significantly boost national tourism revenue and job creation, but it also risks intensifying local inflation, housing shortages, and infrastructure strain.

The Moon Palace project is expected to be a major contributor to the economy of the Turks and Caicos through increased accommodation tax, import and customs duties, work permits and operational fees,

The cost of living in the Turks and Caicos is already considered to be one of the highest in the region. The Moon Palace Resort development will create additional pressure on the local cost of living.

2.7.10 Stakeholders Perceptions and Social License

The beach survey on the likely impact of the Moon Palace Resort project revealed that stakeholders' perceptions fall into two main categories – high economic optimism from government officials and intense apprehension from the local community. The government view this development as a bolds step forward for the island's economic future. The government's stated that the project will strengthen the country's standing as a premier global luxury destination, stimulate local commerce, and generate thousands of jobs across both the construction and long-term operational phases. On the other hand, some local express apprehension on the development, nothing that the high-paying managerial jobs will be taken by expatriates. While, others, beach vendors believed that more opportunities will be available for local merchants.

The local community expressed concerns that the Moon Palace Resort development will require large volume of operational man-power resources that will put stress on an already strain housing market and the island's infrastructure.

2.7.11 Socio-economic activities and stakeholders' proximity

The massive Moon Palace Resort development will shift the economy dynamics away from the crowded high-density Grace Bay area eastwards towards the low-density Leeward Community. The development that will significantly change the surrounding areas brings about a major shift in socio-economic activities across the local landscape. Existing businesses in the area will benefit from spin-off economic activities generated by the proposed development.

Local excursions, charter boat operators, taxi drivers and tour agencies will see increased volume of economic activities driven by the steady influx of new guests because of the proposed development.

Because the site of the proposed Moon Palace Resort development sits directly on the Grace Bay/Leeward area transition, the proximity to various stakeholders creates distinct zones of impact – Existing luxury resorts with shared footprint on the Grace Bay coastal strip will benefit from increased economic activities. The Leeward Residential Community, an upscale residential neighborhood, will face direct impacts from construction noise, heavy transport vehicles and traffic changes and potential shift in neighborhood privacy.

While all-inclusive models tend to keep guest spending on-property, proximity to Providenciales' commercial core provides off-site dining, retail shopping, and evening transport opportunities for guests looking to explore.

Public utilities on Providenciales stand to benefit from the new demand created by the proposed development. Also, the increased pressures on public infrastructure forces government and private stakeholders to address long-term capacity requirements for water, electricity, waste management and deteriorating public infrastructure.

SECTION III

3.0 Legislative and Regulative Context

To address the rapid rate of physical development in the islands over the past three decades, the government has enacted several planning and environmental legislations that aim to ensure resilient development and strike the right balance between realizing the full potential of the tourism sector and national economic development without seriously impacting the island's fragile environment.

This section of the report examines relevant laws and regulations, including those listed below, that are appropriate to ensure that the proposed Moon Palace Resort Development is constructed and operated at an acceptable local and international standard.

3.1 TCI Development Plan/Master Plan

The National Physical Development Plan (NPDP) 2020 for the Turks and Caicos Islands is the legal document regulating physical development in the Islands. The Department of Planning is the government agency responsible for physical development management. Guided by the recently approved NPDP (2020), the Planning Department takes a proactive approach to developmental planning. Development proposals and planning applications for development permission are assessed based on their compliance with the NPDP (2020).

The NPDP (2020) noted that Providenciales, which has experienced an extensive building boom in the last two decades, is known for its numerous developments, specifically along Grace Bay. According to the National Physical Development Plan 2020, Providenciales is the densest and most populous island in the Turks and Caicos archipelago and is famous for its high-end resorts and white sandy beaches. It is considered the most 'urban' and developed; Figure 60.0 is an Area Concept Plan for Grace Bay (NPDP 2020). Grace Bay is uniquely a tourist destination and should be maintained and infilled. The Moon Palace Resort Development is an example of that infilled development the NPDP 2020 recommended for the Grace Bay area.

The NPDP 2020 reported that there is currently a very limited brand hotel presence in the TCI as compared to other competing destinations. The proposed Moon Palace Resort is a luxury style residences development, with a mixture of luxury rooms and condominium residences that conforms with the land use zoning, building densities and building heights for the area.

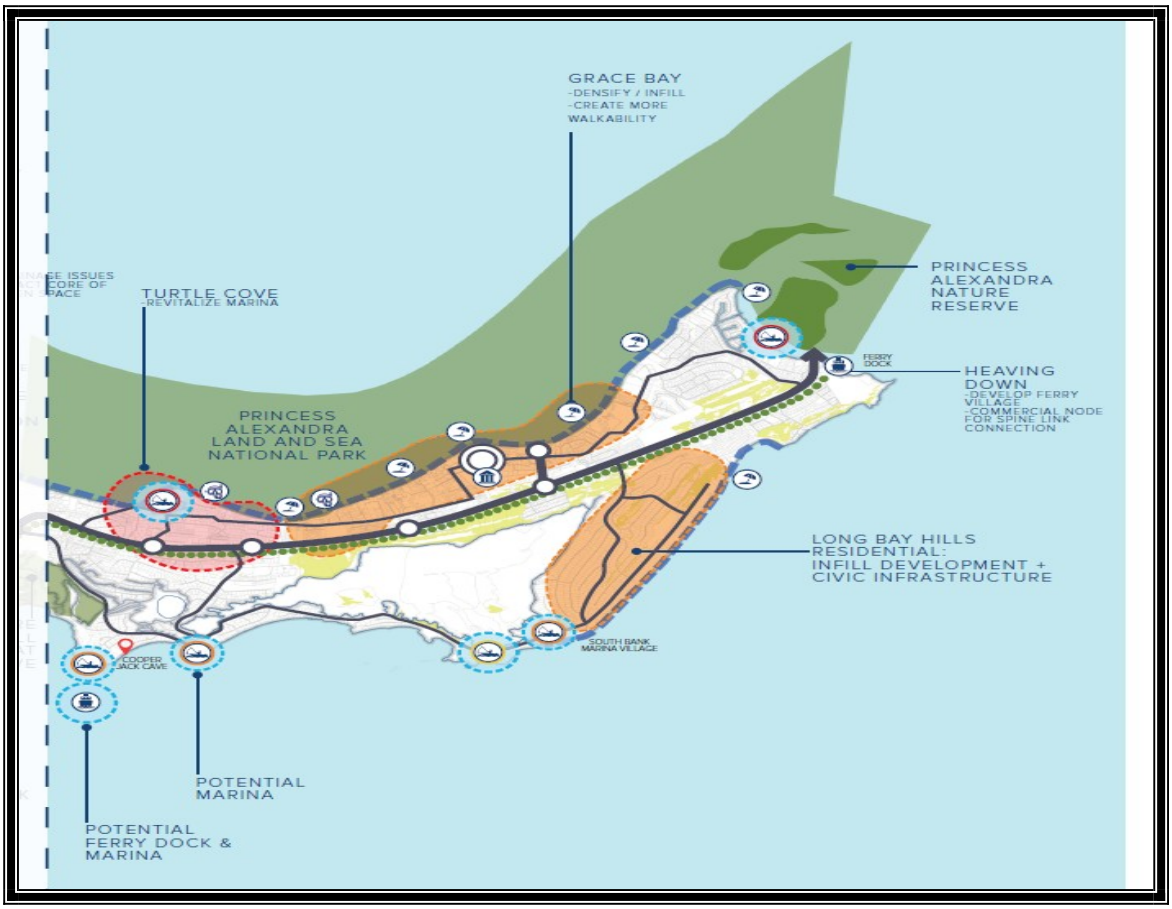


Figure 60 – Island Framework Plan, Grace Bay, Providenciales (NPDP 2020)

3.2 TCI National Physical Development Plan 2020

The National Physical Development Plan (NPDP) 2020 for the Turks and Caicos Islands is the legal document regulating physical development in the Islands. The Department of Planning is the government agency responsible for physical development management. Guided by the recently approved NPDP (2020). The Planning Department takes a proactive approach to developmental planning.

Development proposals and planning applications for development permission are assessed based on their compliance with the NPDP (2020). The Moon Palace Resort development conforms to the land use zoning, density, and building heigh requirements of the recently approved NPDP 2020.

3.3 TCI Physical Planning Ordinance and Subsidiary Legislation

Section 34 (1) of the Physical Planning Ordinance of the Turks and Caicos Islands (2014) authorizes the Physical Planning Board, while considering an application for hotel

development, to consider several factors to make a proper decision. These factors include inter alia:

- The impact of the proposed development on the ecology of the island where it is to take place.
- The impact of the proposed development on the natural and built environment and the uses of the adjacent land, and
- The benefits likely to accrue, and the disadvantages that may be imposed on the economic, social and welfare facilities, including prospects of employment and the effect on the infrastructure of the islands, because of the proposed development.

The Moon Palace Resort Development Terms of Reference (ToR) for this Environmental Impact Assessment Study was prepared under Section 32 (10b) of the Physical Planning Ordinance (2014) and conditions 3 and 4 of the Grant of Outline Planning Permission (PR 18748, dated December 4, 2025).

The Moon Palace Resort development design team has complied with the relevant standards and requirements of the physical planning ordinance and regulation of the TCI, including development guidelines and policy, the Physical Planning Ordinance (PPO), the Physical Planning Regulations (PPR), the TCI Building Code, and Development Manual.

As this project advanced to the final construction design phase, it will be guided by the requirements of the Physical Planning, Development Manual and TCI Building Code requirements.

3.4 TCI Development Manual

The Turks and Caicos Development Manual specifies planning and development standards for the Turks and Caicos Islands. It provides guidelines for developers wishing to carry out development on the islands, including the erection of buildings or structures or building operations, as defined under the Physical Planning Ordinance.
The Manual provides for the following:

- A logical approach to understanding the planning and development process.
- A guide to the process – the task, the sequences, and the decision-making.
- A description of relevant techniques and standards which should guide development.

The planners, architects, and engineers for The Moon Palace Resort development referenced the TCI Development Manual throughout the design and planning stage in the design process, and it was a useful source of design standards and requirements for development in the TCI.

3.5 TCI Building Code

The Physical Planning (Building) Regulations made under the Physical Planning Ordinance 2014 require any person wishing to erect a building or structure or carry out building operations as defined in the Physical Planning Ordinance to comply with such building standards as may from time to time be contained in and published by the Department of Planning, such as the Turks and Caicos Islands Building Code.

The proposed Moon Palace Resort Development is designed to meet the latest edition of the Turks and Caicos Building Code requirements. The Code sets out the requirements for the use of materials and construction methods to conform to the minimum standard provided by the Code. The project is designed to consider the use of sustainable and resilient construction methods and materials to conform to the Code's minimum requirements. The building is designed to be resilient to fire hazards, hurricanes, and earthquake loads.

3.6 National Parks Ordinance

The development is located adjacent to Princess Alexandra National Park (PANP). As such, the developer is cognizant of and concerned about its overall environmental value and will continue monitoring the site to minimize the effects of construction and development activities.

PANP is a protected area consisting of both coastal and marine waters and the coastline of the northern coast of Providenciales (Figure 61.0), Turks and Caicos. This protected area includes Grace Bay Beach, The Bight Beach, The Bight Reef (Coral Gardens), Leeward Beach, Smith's Reef, and many northern barrier reefs off Providenciales. PANP was declared a national park in 1992, covering six thousand five hundred thirty-two (6,532) acres of coastal and marine waters. The TCI National Parks Ordinance (2014) makes provisions for certain types of developments to be permitted on the boundaries of a National Park for the public's enjoyment once development is carried out in an environmentally sound manner.



Figure 61 – Princesses Alexandra National Park, Grace Bay, Providenciales

Due to the natural resources of Turks and Caicos contributing an estimated economic value of 45.5 million USD per year to the tourism industry (Wolf's Company, 2016), it is important to have protected areas, such as the PANP, established to safeguard TCI's biodiversity. In addition to this, the effective management of the PANP also plays a crucial part in maintaining ecosystem balance and preserving important habitats in Turks and Caicos as the extensive mangroves and fringe reefs found within and around the reserve act as a nursery for fish species as well as protect the surrounding coastline of Providenciales from storm surges in the event of a natural disaster (Pienkowski, n.d.).

Works within PANP are limited to the creation of a swim zone. The Developer will encourage staff, residents, visitors, and guests at Moon Palace Resort to abide by this Ordinance. This includes but is not limited to:

- No littering, including being mindful of the wind blowing trash into the sea.
- Do not remove corals, sand, shells, and dead or alive wildlife from the beach or ocean.
- No fishing of any kind.

- Do not feed the wildlife, including fish, turtles, birds, and reptiles.
- Do not walk on the dunes; walking should be limited to the walkways
- No open fires without a proper permit and license from the Department of Environment & Maritime Affairs (DEMA).
- Noise should be kept to a minimum.

3.7 Coastal Protection Ordinance and Subsidiary Legislations

The development is located along the coastline, and as such, it will abide by the articles set out in the Coast Protection Ordinance. Coastal works are limited to recreating a swim zone.

In abiding by the Coast Protection Ordinance, sand will not be dug or removed from the beach, and the Developer will discourage staff, residents, visitors, and guests at Moon Palace Resort from littering or depositing waste along the coast. Solid Waste Management for operations and construction will be followed to ensure waste is properly disposed of and is not blown onto the coast and into the open water.

The Moon Palace Resort Development is designed to adapt to the physical characteristics of the immediate and surrounding areas. The design incorporates Best Environmental Practices that would mitigate potential environmental impacts in accordance with the local TCI building code and the recently approved 10-year development plan. It follows that development permissions will be sought to carry out any construction and operations within beach face and construction of pedestrian boardwalks to access the beach.

3.8 Mineral (Exploration and Exploitations) Ordinance and Subsidiary Legislations

Mineral Resources are the most precious assets of the nation which need to be protected and subjected to reasonable use to satisfy the short-term needs for mineral materials and the long-term goals of social and economic development. The Minerals (Exploration and Exploitation) Ordinance and Subsidiary Legislation 2014 of the Turks and Caicos Islands make provisions concerning the management and protection of mineral resources regarding geological exploration, mineral exploitation, and protection of untapped mineral resources.

During the construction phase of the proposed development, the requirements of the Mineral (Exploration and Exploitation) Ordinance of the TCI will be adhered to. However, the project would not directly or indirectly involve mineral exploration or exploitation activities.

3.9 Marine Pollution Ordinance and Subsidiary Legislation

The development is located adjacent to open water, so the developer will continue monitoring the site to minimize the effects of construction and development activities. Pollution of the marine environment is unlikely to happen as no direct work is scheduled for the marine environment.

The Developer will encourage staff, residents, visitors, and guests at Moon Palace Resort to abide by proper Solid Waste Management Protocols to ensure that debris does not enter the marine environment. They will also ensure the proper collection and storage of waste for disposal.

3.10 Fisheries Protection Ordinance and Subsidiary Legislation

As the development is adjacent to the PANP, fishing or removal of marine life, including corals, is prohibited (National Parks Ordinance).

Destructive fishing practices such as using explosives, toxic substances, electricity, dredging, suction, and trawling devices for fishing are detrimental to fisheries and the marine ecosystem. They are prohibited under the Fisheries Protection Ordinance. The construction and operation of the proposed Moon Palace Resort Development will conform to all requirements under the Fisheries Protection Ordinance (2014).

The management of the hotel facilities would not engage directly in activities such as fishing excursions, scuba diving, or snorkeling; these activities would be outsourced to third-party vendors.

During the operation of the hotel facility management would adhere to the Fisheries Protection Ordinance (2014) requirements, particularly as they relate to sourcing, preparation, and serving seafood.

3.11 Wild Birds Protection Ordinance

Due to the proximity of open water, seabirds and shorebirds may be encountered along the coast. The Development will abide by the Wild Bird Ordinance, and staff, residents, visitors, and guests at Moon Palace Resort will be discouraged from:

- Killing, wounding, or attempted killing or wounding of Wild Birds.
- Taking, removing, or destroying nests or eggs.
- Selling any Wild Bird or parts of a Wild Bird that may have been killed, wounded, or taken.
- Selling of Wild Bird nests or eggs.

Should a wounded Wild Bird or a Wild Bird nest or eggs be discovered, the area will be sectioned off, and officials from the Department of Coastal Resources (DECR) will be contacted for further steps.

3.12 International Treaties and Conventions

International Treaties and Conventions are laws and agreements that govern international maritime affairs and ship pollution prevention. The three main categories that international conventions address include maritime safety, Prevention of maritime pollution, and liability and compensation, especially concerning damage caused by pollution.

The Moon Palace Resort development will not operate as a marina or Port of Entry. Jetty operations will not form any part of the proposed development. However, in the interest of maritime safety and the safety of beach users' navigational aids and safety zone markers will be deployed within the designated swim zone.

3.13 Turks and Caicos Islands Vision 2040

Vision 2040 of the Turks and Caicos Islands is a rallying call for the Government and people of the Islands. The Government will spearhead it through progressive policies and legislation. The vision foresees a united Turks and Caicos Islands by 2040 that will be a global leader in all levels of prosperity and human development. The Island's people will be positioned to be fully responsible for their collective future as a nation. There will be a more resilient country that balances economic, social, and environmental development for the significant benefit and prosperity of all the people of the islands.

However, the degree to which Vision 2040 can be attained will depend mainly on the strength of the planning systems and mechanisms implemented. The Department of Planning development guidelines and environmental standards will assist in achieving this vision for the future.

3.14 Others relevant laws and regulations

Other appropriate laws and regulations that planners, architects, engineers, and managers have considered during the design and would consider during the construction and management of The Moon Palace Resort facility are the Fire Services and Prevention Ordinance, the Crown Land Ordinance, the National Parks Ordinance, and Public and Environmental Health Ordinance.

The Fire Service and Prevention Ordinance apply during the hotel design, construction, and operational phases of the hotel facility to ensure that it adheres to local and international fire code requirements.

The Crown Land Ordinance is appropriate because Crown land is involved with the proposed development. A portion of the site (60905/204) is leased from the Crown and the Government of the TCI under a special lease agreement.

SECTION IV

4.0 Project Description, Construction and Operation and Alternative

4.1 Description of the proposed project/components

Moon Palace Resort is a proposed 12-Floors, 976-Bedrooms all-inclusive luxury resort. The estimated cost of the proposed development would be US$1.2 billion. The site for the development is approximately 44.5 acres of beachfront property, which is located between the Beach Enclave Villas/Beach Access Lane and the Coral House Villa. The property has a substantial coastal frontage of 4,844 linear feet. There are no alternatives proposal being considered by government at this time for this property. The developers have entered into a formal development agreement with the Turks and Caicos Islands Government (TCIG).



Figure 62 – The axonometric rendering shows the full view towards Grace Bay Beach.



Figure 63 - One of the aquatic areas amongst the grand lagoon and other swimming pools.

4.1.1 Resort 976 Rooms

The planned Moon Palace resort development for Grace Bay, Providenciales, Turks and Caicos Islands will comprise 976 luxury resort rooms configured around two twelve stories building complex. The Le Blanc Spa an All-Inclusive adults Only resort comprising 219 rooms (235 Keys), 6 specialty restaurants, wine bar, coffee shop, spa, gym, rum and cigar lounge, diamond lounge, Palace elite centre, Ballroom, luxury stores, three pools, pool bars, beach restaurant romantic dinner area and sport area (Tennis, Basket and Pickle ball.

The family oriented All-Inclusive Moon Palace Grand Resort comprising 690 resort rooms (789 Keys) and 14 specialty restaurants, wine bar, coffee shop, sports books, Teen's lounge, playroom, spa, disco/nightclub, casino, diamond lounge hostess and liners, ballroom, retail store, five pools, pool bars, beach bar, beach restaurant, wedding gazebo, flow rider and exterior terrace.

4.1.2 Guest and Service Access

The site design plan for the Moon Palace Resort development ensures that safety and functionality were the main consideration given to separating guests access from service assess roads. The guest's access is strategically centrally position along Grace Bay Road. The service assess roads are situated at the extreme western and eastern boundaries of the property.

4.1.3 Swimming Pools

The Moon Palace Grand and the Le Blanc resorts will incorporate multi-swimming pools throughout the development to serve its guests. A total of eight (8) massive swimming pools will serve the development, three (3) for the Le Blanc and five (5) for the Moon Palace Grand. These will include swim-up bar pools and private plunge pools.

4.1.4 Bars and Restaurants

The development planned some twenty (20) specialty restaurants to serve the massive development, six (6) for the Le Blanc hotel and fourteen (14) for the Moon Palace Grand.

4.1.5 Private Residence

Early design concepts for the Moon Palace proposed resort development on Providenciales, Turks and Caicos Islands focus strictly on all-inclusive luxury suites and resort amenities rather than private residences.

4.1.6 Sport Courts

The amenity breakdown for the proposed Moon Palace Resort on Grace Bay, Providenciales include tennis, basketball and pickle ball courts.

4.1.7 Sales Centre

The Moon Palace Resort development planned for Grace Bay Beach Providenciales, Turks and Caicos Islands will accommodate a dedicated sale centre and central office facilitate the management of the complex hotel facilities.

4.1.8 Water Treatment Plant

Providenciales do have a central wastewater disposal system, therefore, the Moon Palace developers will have to make provisions for an on-site Water Treatment Plan to handle the volume of wastewater the facility will generate daily. For a twin resort the Moon Palace Grand and Le Blanc, featuring approximately 976 rooms, will likely require a 300,000 to 450,000 Gallons Per Day (GPD) wastewater plant. Under Turks and Caicos environmental regulations 100% of the treated effluent can be used for landscaping irrigation.

4.1.9 Beach Boardwalks

The Project development includes the construction of eight (8) boardwalks intended to provide pedestrian access between the development and beach to minimize disturbance to the coastal environment.

While information regarding the exact design of the boardwalks is not made available at the time of preparation of this report, the boardwalks should be elevated to avoid disturbing the dune system and allow natural drainage beneath the structures. The boardwalk will be supported by appropriate piles and should consist of material appropriate for the coastal environment. The design, dimensions, elevations and support structures will be based on the final engineering design and recommendation from the coastal engineers.

4.1.10 Parking Lots

The primary parking lots are strategically located near the main entrance roadside boundaries of the 44.5-acre site ensuring that the beach-facing perimeter remains entirely pedestrian and dedicated to the resort's extensive swimming pools and landscaping amenities.

4.1.11 Housing for employed Staff

The staff housing strategy for the Moon Palace resort planned for Grace Bay Beach, Providenciales, Turks and Caicos will be two-fold, one for the construction workers (short-term) and the other for permanent t workers (long-term).

The construction workers will be housed in temporary housing comprising 200 dome units with basic sanitary facility and water and solid waste management facilities. Off-site staff housing will be provided for hotel workers during the operation phase. Moon Palace Company has acquired separate land away from the resort for its staff housing.

The permanent (Operational) staff housing will include twenty-one (21) three (3) stories apartment buildings, comprising twenty-four (24) 2-bedrooms apartment units in each building. Each building will house ninety-six (96) persons. There will be a total of five hundred and four (504) apartments.

The total permanent housing population will be 2,016 persons. Which includes 21 apartment buildings, with each apartment building housing nine-six (96) persons. The housing complex will be supported by appropriate amenities including shops, recreation and play areas.

4.2 Project Justifications

Turks and Caicos is renowned for its beaches, which attract many tourists to the country every year. This development seeks to ensure that both locals and tourists have access to some of Turks and Caicos' best qualities beaches. In turn, the increase in tourism in the area will directly and indirectly benefit nearby communities.

The development plans to create a swim zone and install beach amenities such as chairs and umbrellas. These amenities will attract beachgoers and encourage them to spend more time in Providenciales. Furthermore, the creation of a swimming zone will provide safety for swimmers as the area has high boating traffic.

The habitat near shore consists of bare sand voids of flora and epifauna. Seagrass, sand with rubble, and agal-dominated sandy bottom patches are further offshore. The placement of buoys and an increase in beachgoers are not expected to impact on the marine benthic community.

4.2.1 Project Justification Socio-economic

Consistent with the Hon. Premier's theme of "Tightening foundations for long term prosperity" and stating that "we have to do things now to strengthen and ensure an economic future" (Business Outlook Conference, 5th June 2026). Like *Beaches* TCI, which has been an anchor project for the Turks and Caicos Islands for many years, Moon Palace Resorts will have an even greater positive economic impact and further strengthen the islands' economic base.

Socio-economic justifications:

- GDP and tax revenue boost.

- Job creation and diversification.
- Air connectivity and economies of scale.
- Market diversification.
- Human resource development.
- Infrastructure improvements and development.

The proponents of the development have already signed a development agreement with TCIG to bring about the proposed development, which confirms that the development is in line with the TCI Governments' overall strategy of development. As part of this environmental impact assessment process, the following has been performed and will continue to bring about positive economic and social benefits:

- Comprehensive stakeholder engagement.
- The natural environment must be protected. Everything in the TCI is linked to the natural environment – Tourism, Construction, Real Estate, Commerce, Attorneys, etc.
- Investing in renewable energy wherever necessary is the preferred choice.
- Continued development of linkages to the tourism/hotel industry (The Orange Economy).
- Invest in staff housing.
- Foster social cohesion and economic justice.
- Focus on Sustainability.

From the environmental impact assessment (EIA) carried out and the findings thereof contained in this report (EIS), the proponents are confident that the proposed development will be economically viable/beneficial, socially just, and environmentally sustainable for the Providenciales and the wider Turks and Caicos Islands, and its citizens.

4.2.2 Project Justification Ecological

Turks and Caicos is renowned for its beaches which attract many tourists to the country every year. The development seeks to ensure that both locals and tourist have access to some of Turks and Caicos' best qualities. In turn, the increase in tourism in the area will directly and indirectly benefit nearby communities.

Terrestrial Environment

Baseline observations indicate the presence of Human Altered Environment, Coastal Dry Broadleaf Evergreen Formation, and Sandy Shoreline habitats. Portions of The Project site have been significantly altered by human activity and are currently have evidence of waste accumulation, recreational use, vehicle access, and construction-related disturbance.

Through appropriate environmental planning and management, resort development can incorporate native landscaping, plant salvage and relocation, invasive species control, waste management, erosion and sediment control, and coastal protection measures. These measures can help reduce existing environmental pressures while maintaining and enhancing habitat value for local flora, fauna, and avifauna.

Marine Environment

The near-shore environment is primarily made up of bare sand with limited biological cover. Patches of hard bottom and sandy bottom with macroalagae and rubble were observed within the bare sand. The seagrass habitat and hard bottom with seagrass habitat where higher biodiversity was observed were further offshore.

As no work is proposed for the marine environment, direct disturbance to benthic communities is not anticipated. The primary potential interaction with the marine environment is expected to result from recreational use of the beach by the development guests and other beach users. However, the beach is already being actively used by tourists and locals for recreational activities and therefore the near-shore environment is already subjected to regular human use and disturbance.
With no development scheduled for the marine environment, there is expected to be little to no significant impact the marine benthic community provided appropriate management measures are implemented.

4.3 How the proposed project will affect erosion or accretion.

Sediment transport patterns were studied in two forms, short-term and long-term. Short term movement was looked at through the simulation of a swell event and hurricanes. Sediment moved from the back of beach area to the underwater base of the beach slope. The site was not affected by swell waves and therefore the proposed on-land solution would not affect the regime in the short-term. However, significant dune erosion of up to 1.7m was modelled in the storm events. In these cases, sand from the property dune would be eroded and deposited onto the beach face.

Long term trends were investigated using satellite imagery and the average wave climate. Imagery showed that the beach is dynamically stable, with an average rate of change of +0.3m/yr. over the images assessed. Assessing the annual wave climate showed that the net sediment transport is to the southwest in a 20m band around the waterline. Figure 43 shows the LitDrift results for the proposed option (described in Section 2), which show similar results as under existing conditions.

Between March 2018 and June 2026, there was net landward movement (erosion) ranging from approximately 15m to 23m at the shoreline. The proposed development is not expected to affect these coastal erosion processes, as no coastal engineering works or structures will be constructed within the marine environment. The 200-ft HWM buffer will be maintained, with landscaping and designated walkout areas within the buffer.

4.4 Coastal/beach development and management including beach access

The master plan incorporates a 200-ft setback from the High-Water Mark, within which landscaping and designated walkout areas will be provided as appropriate. Beach access will therefore be managed through land-based walkout areas, with no structures proposed within the marine environment.

4.5 Solid waste management during construction and operation

Providenciales, as the country's most populated and fastest-growing island, faces increasing pressure on its waste handling infrastructure, particularly the Providenciales landfill, which already experiences challenges related to capacity, segregation, and long-term environmental control. The proposal by the Palace Company for the Moon Palace and Le Grande Hotels represents a major generator of both construction-phase and operational solid waste therefore making a thorough assessment is essential to ensure compliance with national environmental standards and to safeguard the fragile coastal and terrestrial ecosystems.

Solid waste management in the Turks and Caicos Islands is regulated under the Public and Environmental Health Ordinance. The relevant sections are under Part VII in particular sections 39, 40,41, 42 and 45. The authority has yet to promulgate direct regulations that govern the industry. Given this, and until these regulations come into force, the development will refer to and include any guidance from the authority and likewise shall rely on international best practices to ensure proper waste management.

Physical Planning Ordinance

- DEH Waste Management Guidelines

- DEH Hazardous Waste Protocols
- International best practices for SIDS construction waste management

Solid waste management is a critical component of environmental planning for large-scale tourism developments in any country, but this is more critical for small island developing states such as the Turks and Caicos Islands.

This section of the EIS report establishes the baseline solid waste conditions on Providenciales, evaluates the types and quantities of waste expected from the project, and outlines the systems required to manage, store, transport, and dispose of waste responsibly. It considers both short-term construction impacts such as demolition debris, packaging materials, and hazardous substances and long-term operational waste streams including organics, recyclables, residual waste, and maintenance-related hazardous materials. The assessment is guided by best practices in Caribbean hospitality development, discussions with TCI Green Ecological Corporation Limited (TCI GREEN) operator of the Solid Waste Disposal system, the Public and Environmental Health Ordinance, and expectations of the Department of Environmental Health (DEH), through any guidance that may be issued from time to time.

By identifying potential impacts and proposing mitigation measures, this section ensures that the hotel development adopts a modern, efficient, and environmentally responsible approach to solid waste management. It supports the broader goal of reducing landfill and disposal pressure, preventing pollution, and promoting sustainable tourism in Providenciales.

4.5.1 Solid waste management construction phase

During the construction of the Moon Palace Resort development solid waste would be collected on a daily basis and stored in garbage disposal containers and carried to the public waste disposal site.

4.5.2 Solid waste management operational; phase

During the operational phase of the Moon Palace Resort facility garbage bins will be placed at strategic locations throughout the site for the collection and disposal of sold waste. Solid waste from the various waste generated entities on the property would be collected and sorted for recyclying, those waste items that are not recyclable would be stored and transported to the public solid waste disposal site by a private solid waste disposal company.

Recovery and recycling

Recycling is the process of converting waste products into new products to reduce energy usage and consumption of fresh raw materials. Recycling is the third component of Reduce, Reuse and Recycle waste hierarchy. The idea behind recycling is to reduce energy usage, reduce volume of soild waste that goes to the landfill, reduce air and water pollution, reduce greenhouse gas emissions and preserve natural resources for future use. Recycling is widely used around the world, with plastic, paper and metal leading the list of the most recyclable items.

The volume of waste going to the landfill from The Moon Palace Resort development during the operational phase could be substantially reduced if waste management recycling programs like the separation of cans, bottles and paper are done and sent to a recycling plant.

The Moon Palace Resort development's management goal is to maintain and preserve the natural beauty of the TCI, by reducing the volume of waste that goes into the landfill. It will join the many hotel resorts on Providenciales that utilize existing solid waste management services and facilities on the islands.

4.6 Surface-water run-off management/Stormwater run-off and treatment

The, take water away from the property and protect human health. TCI Physical Planning Ordinance (2014) requires that a "storm water" drainage plan be submitted along with applications for infrastructure development permission. A good storm water drainage plan makes it possible to collect and manage storm water runoff (rain) to minimize flooding

The Moon Palace Resort development project's site drainage plan is designed to provide sufficient storm water drainage system for the conveyance of storm water runoff from the subject property, with due allowance to avoid runoff to adjacent properties.

4.7 Traffic flow and safety (marine and coastal)

The safety and security of patrons, snorkelers, swimmers, sunbathers, and boat operators is of paramount importance to the facility management. To ensure a safe environment for marine activities within the near shore coastal area it is important that the various recreational activities within the coastal marine environment be properly planned and layout by zones. For example, designating areas as swim only zones and providing boat access lanes where appropriate. Demarking this area with buoys is the most common way of dealing with the conflict between swimmers and motorized boats.

The Project is located on the northern coastline of Providenciales and is bounded by Princess Alexander National Park and Leeward Beach on the Northern side of the Property. Leeward Beach is a popular tourist destination and is regularly used by beachgoers, rental companies, recreational users, water sports operators and vessel charters.

Given the existing level of recreational and marine activity in the area, considerations to traffic flow and safety are important to ensure that the proposed development does not adversely affect the beach users. The following sections will outline traffic flow and safety for both the marine and coastal environment.

4.7.1 Traffic Flow and safety Marine

Boating traffic is extremely high in the area due to many charters utilizing the area for tours, dive trips, parasailing activities, etc. Due to development happening adjacent to Leeward Beach, the safety of boaters is important.

There is no direct work anticipated for the marine environment, therefore there is no traffic flow and safety considerations required. As the marine is located within the PANP, boaters should abide by regulations set out within the National Park Ordinance regarding speed restrictions.

4.7.2 Traffic Flow and Safety Coastal

Leeward Beach is a public beach, currently being used by beachgoers, rental companies, recreational users and water sports operators. As a result, pedestrians and recreational traffic are already present in the area. In constructing the boardwalks, uncontrolled pedestrian traffic across the coastal environment will be reduced. Construction of the boardwalks will not change the existing pattern of beach use but rather provide a more define means of accessing the beach.

Activities should not endanger beach goers but will affect use of a section of the coastal ecosystem, temporarily. Portions of the beach may have to be sectioned off/closed for construction of the boardwalks. To ensure the safety of beach goers in the area, the following practices should be implemented:

- Nearby businesses and residents should be notified of the commencement of construction activities. This is especially important as to allow for resorts and Airbnb's in the area to warn guests to be vigilant in the area.

- Proper signage to indicate active construction in the area. These can include but are not limited to signs saying, “Men at Work” “Caution” “Active Construction Site” and “No Entry”.

- The site boundaries should be clearly marked. Privacy fencing should be installed around the site to ensure no unauthorized entry and prevent any construction material from polluting the beach.

Consideration will also be given to maintaining clear and unobstructed access along the beach for existing beachgoers, rental companies, recreational users, water sports operators and emergency response personnel. Should the beach in front of The Project site be closed off, areas will be closed off in sections to allow continued use of the beach. If necessary temporary pedestrian measures will be implemented to maintain access to the beach while also ensuring no unauthorized access occurs on the construction site.

4.8 Utilities demand and sources (Construction and Operations)

Methodology and Assumptions

The estimation of construction-phase electrical demand for the proposed 1000-room hotel development was carried out using a structured engineering methodology consistent with international best practice and regional resort development benchmarks. The approach integrates equipment-specific load data, construction activity sequencing, diversity factors, and local utility supply conditions in the Turks and Caicos Islands.

Data Sources and Benchmarking

Electrical load values were derived from the use of published electrical ratings from several major construction equipment manufacturers (cranes, pumps, compressors, batching plants, and site tools) and international engineering standards (CIBSE, ASHRAE, IEC, NFPA) providing typical temporary power requirements for construction sites. Benchmarks for temporary utilities were derived from Caribbean resort Environmental Impact Assessments of comparable scale (approximately 600–1,200 rooms) and from available utility planning documents to ensure alignment with available feeder capacities and temporary supply practices.

Equipment Load Identification

All major categories of construction equipment expected on a project of this scale were identified, including tower cranes, hoists, concrete pumps, batching plants, mechanical

fabrication tools, dewatering pumps, temporary HVAC units, and site offices. Manufacturer-rated electrical loads were used as the basis for connected load calculations.

4.8.1 Electrical demand and sources – Construction

The construction of the Moon Palace and Le Grande developments (The Palace Company Developments) will require a stable and adequately sized temporary electrical supply to support cranes, batching operations, mechanical equipment, site offices, lighting, and essential services.

Making estimates based on the anticipated construction activities and typical site equipment profile, the anticipated connected electrical load is expected to fall within the range of 0.8–1.7 MW, with a diversified peak demand of approximately 0.5–1.2 MW. The developers have estimated that their realistic demand may be more 1.5 MW and that these values may increase to around 3 MW as the construction progresses. It is determined that these values may vary given the influence of the execution schedule.

Table 27 – Estimated Construction-phase Electrical Demand -Typical Usage

Category	Typical Load (kW)	Notes
Site offices & welfare facilities	150 – 250	Offices, canteen, toilets, small HVAC, IT, lighting
General site lighting & small power	60 – 120	Floodlights, task lighting, hand tools, chargers
Tower cranes & hoists	80 – 120 each	Assume 2 cranes + 2 hoists → 320 – 480 kW total
Concrete batching & pumps	120 – 200	Batching plant, boom pumps, mixers
Mechanical equipment & fabrication	150 – 250	Welders, compressors, cutters, workshop tools
Material handling (forklifts, lifts)	60 – 120	Electric forklifts, goods lifts, small winches
Temporary HVAC (critical areas)	80 – 150	For enclosed spaces, storage, or sensitive materials
Water supply & dewatering pumps	40 – 80	Borehole pumps, sump pumps, pressure systems
Temporary sewage & wastewater systems	30 – 60	Package plants, lift stations, dosing systems
IT, Security & communications	20–40	CCTV, access control. Servers,

		radios
Miscellaneous & contingency	100 – 200	Unplanned loads, future equipment, safety margin
Total estimated connected load	≈ 830 – 1,650 kW	Sum of above (all equipment connected)
Diversity factor (0.6 – 0.75)		Not all loads run at full power simultaneously
Estimated peak demand	≈ 500 – 1,200 kW	Use for temporary supply/generator sizing

***Estimations based on internationally available parameters (not specific to the project)**

Temporary power will be provided through a combination of utility-supplied construction feeders supplied by the local utility company. Should there be the requirement for additional supply during peak demand periods, on-site diesel generators sized to meet peak demand and ensure uninterrupted operation of critical equipment can be deployed as necessary.

The electrical demand plan generally would include staged power deployment aligned with the project's construction phases, dedicated distribution boards for major equipment zones, and continuous monitoring to maintain safe loading, prevent overloads, and ensure compliance with Turks and Caicos electrical standards. Such an approach can ensure reliable power availability throughout the construction period while maintaining operational efficiency and safety across the site.

4.8.2 Electrical demand and sources – Operational

During the operational phase, as with the construction phase above, the hotel development will require a stable and high-capacity electrical supply to support continuous 24-hour operations across guest rooms, HVAC systems, kitchens, laundry, pools, elevators, and back-of-house facilities. The developers have estimated that total connected electrical load is estimated at 5.5 – 6 MW, with a diversified peak operational demand of approximately 7–8 MW, reflecting the simultaneous use of chilled-water air-conditioning, commercial food-service equipment, industrial laundry systems, and extensive lighting and mechanical services typical of a luxury Caribbean resort.

Electricity will be supplied primarily by the Pelican TCI high-voltage grid, delivered through dedicated 12.47 kV or 34.5 kV feeders and stepped down via on-site transformers and switchgear housed in a purpose-built substation. To ensure resilience and compliance with life-safety requirements, the hotel will maintain 6–8 MW of standby diesel generation capacity, supported by automatic transfer switches and uninterruptible power supply (UPS) systems for critical IT, security, and communications infrastructure. This dual-source arrangement ensures uninterrupted

power availability, operational reliability, and alignment with Turks and Caicos Islands electrical standards throughout the hotel's operational life.



Photo 76 – Power Distribution Apparatus directly outside of site

Fire safety and equipment

High-rise buildings present several unique challenges not found in traditional low-rise buildings; longer egress times and distance, evacuation strategies, fire department accessibility and fire control. High-rise buildings are not inherently dangerous structures, but they do require additional systems and features than low-rise buildings. Components of hotel fire system can include the following – Fire sprinkler system; smoke and fire detectors; duck smoke detectors; automatic alarm systems; manual alarm systems (the pull-boxes used near stairway doors and elevators); fire Department standpipes; emergency lights, the emergency egress system; exits & exit signs, smoke control systems; portable fire extinguishers, staff and guests' emergency response plan, staff training; gas Supply Shut-off Devices, and fire alarm system.

The Moon Palace Resort Development is designed in accordance with the National Fire Association standards and Turks and Caicos Building Code.

4.8.3 Water demand and sources – Construction Phase

During the construction phase of the project, the estimated water demand will vary by intensity of the construction activities and seasonal conditions. However, it is expected to range between 13,208 to 31,700 gallons of water per day.

This demand includes water for concrete production and curing as may be necessary, dust suppression on haul roads and work areas, workforce welfare facilities, equipment cleaning, and early landscaping establishment.

Given the geography of the islands and the lack of natural fresh water sources, all construction water must be supplied through main supply by way of reverse osmosis (RO) production or trucked delivery. The primary source of water supply will be Provo Water Company, which provides bulk water via metered standpipes or tanker trucks. It is not anticipated that any supplement supply using on-site Reverse Osmosis units will be utilized.

To maintain continuity of operations, the project site should include temporary on-site storage to meet peak demands as may be necessary. This would typically range from 13,200 to 26,500 gallon based on industry standards.

4.8.4 Water demand and sources – Operation Phase

During the operational phase, the development by the Palace Company on Providenciales will require that there be a reliable, high-quality potable water supply. This can be supported by on-site production and external backup sources. As the island of Providenciales has little to no natural surface freshwater such as rivers or lakes that may form a primary water source, all water for public consumption must be produced through Reverse Osmosis (RO), with extraction from underground water lenses that may constitute mainly limited fresh or brackish water sources. The legal or lawfully sanctioned producer and distributor of water for public consumption is Provo Water Company.

The calculation or estimation of the project's operational demand reflects guest use, food and beverage operations, laundry, pools and spas, staff facilities, air-conditioning where applicable and extensive landscaping typical of large resort developments.

From estimations based on internationally and locally available data would surmise that total daily water demand is expected to fall within 92,460 – 132,086 US gallon per day under normal occupancy, increasing to 158,503.23 – 184,920 U.S. gallons per_day during peak or high season periods. Guest rooms represent the largest single demand category, followed by laundry, kitchens, and irrigation.

To meet this requirement, the primary water source will be Provo Water Company, delivered through piped connections. The site visits show that water mains are present within the project area, and Mains distribution access is in proximity to development site. This can be seen in image the below image where mains distribution is just outside of the development site, supplying the neighbouring Leeward Palms Community.



Photo 77 – PWC nearby water metering installations

Discussions have been held with the Principals of Provo Water Company, who have assured the developers of their ability to supply the required volumes even at peak demand periods.

Potable water storage of an estimated 317,000 gallons of water (1–2 days of demand) is recommended to ensure resilience during maintenance or peak-load conditions.

Secondary potable water supply may be provided through an on-site Reverse Osmosis plant sized between 150, 669 to 211,388 gallons per day, to provide a consistent supply and reduce reliance on a slower external trucking method. This option will offer redundancy for operational reliability.

Treated wastewater from the hotel's on-site treatment plant can offset potable demand by supplying non potable water for irrigation and cooling tower make-up. This would significantly reduce pressure on freshwater production and demand. Such an integrated approach would ensure a secure, efficient, and sustainable water supply throughout the hotel's operational life.

Assumptions have been made using the luxury hotel benchmark for water requirements for guests at a rate of 132 to 237 gallons (500 -900 L) would be consumed per guest-night. It is anticipated again that 75 percent would be the optimal occupancy and that we can assume 1,5 guests reside per room. Additionally, we assume full-service amenities (laundry, kitchens, pools, air-conditioning), and that water-use distribution is based on global hotel profiles. We also assume that there will be seasonal increases in irrigation and pool make-up, and that onsite on-site wastewater reuse reduces potable demand

4.8.5 Public Roadway Vehicular Demand and Load Construction Phase

The proposed mega Moon Palace Resort development on the Grace Bay Beach, Providenciales is expected to significantly increase vehicle load on the island's primary traffic corridors, including Leeward Highway, Grace Bay Road and other primary roads. During the construction phase there will be increased traffic loads, slower moving vehicles and highly concentrated commuter peaks.

During the construction phase substantial heavy-vehicle traffic will be generated from transporting bulk building materials, aggregate, cement, steel from the South Dock port via the Leeward Highway to the site at Grace Bay. Hundreds of construction works must be shuttled daily. This will create traffic spikes in the morning and evening along Leeward Highway and Grace Bay Road.

4.8.6 Public Roadway Vehicular Demand and Load Operation Phase

During the operational phase of the Moon Palace resorts the traffic model shifts from heavy machinery to high-frequency, continuous daily trips, guest arrivals and excursions, resort operations and logistics, staff and employment commutes and strategic infrastructure responses. The proposed Moon Palace Resort Development is expected to generate approximately 307 AM peak hour trips (215 inbound and 92 outbound) and approximately 384 new trips during the typical afternoon peak hour (138 inbound and 246 outbound).

4.9 Landscaping (Initial phase and maintenance/operations)

Landscape planning is defined as an activity concerned with reconciling competing land uses, while protecting natural processes and significant cultural and natural resources. Landscape design architecture for resorts is a unique art form that combines beautiful public spaces with the feeling of luxurious private escapes. Landscaping is a critical element of resort planning worldwide,

4.9.1 Methodology of conserving and utilizing existing vegetation

It is suggested that during the initial phase of site preparation and landscaping, suitable native flora identified within The Project site should be tagged and relocated to an on-site nursery for temporary maintenance. These plants can subsequently be incorporated into the final landscape palette, reducing the need for imported planting material while preserving the natural genetic diversity of the local ecosystem.

4.9.2 Landscaping Plan – Utilization of native species

It is recommended that the final landscape palette prioritize native Turks and Caicos Island plant species to enhance habitat value for local avifauna and other wildlife. The use of native vegetation will promote ecological connectivity, improve the availability of food and shelter resources, and contribute to the long-term sustainability of landscaped areas.

4.9.3 Landscaping maintenance and support systems

Prior to relocation, all candidate plants should be assessed to ensure they meet health criteria. Only healthy specimens that are free from pests, diseases, and significant physical damage should be selected for transplantation. Once relocated to the on-site nursery, these plants should be monitored and maintained until they are suitable for relocation as part of The Project's landscaping works.

Implementing a plant salvage and reuse program will not only reduce landscaping costs associated with importing plant material but will also conserve locally adapted genetic stock and maintain the ecological character of the surrounding environment.

4.10 Construction phase activities

The proposed development will be constructed as a single-phase development.

4.10.1 Construction methods and programs

As mentioned in 4.10 the development will be constructed as a single phased development. The method of construction will be a mixture of reinforced concrete construction and reinforced poured concrete. It is anticipated that construction will start in January 2027 and will be completed for opening in November 2029; a 32-month period.

The construction methodology is as follows:

- Material checks and sourcing
- Requisite testing will be done at the sand supply site to ensure that the sediment size is appropriate for the dune extension. Checks will also be done to determine if the required amount of sand can be attained from the sand supply site chosen.
- Requisite testing will be done at the marl quarry or holding site to ensure that the fill material is suitable for the land.
- Boulders will be sourced from a local supplier and density tests done to ensure that they fall within the specifications for boulder sizing
- Site preparation will begin with a surveyor setting out controls for the works.
- Equipment will be mobilised.
- Fill material will be brought to the site and stockpiled.
- Fill material will be spread by a front-end loader and compacted with a roller compactor in layers until the fill is at the design grade.
- An excavator will be used to excavate for the placement of the buried revetment.
- The buried revetment will be placed to grade.
- An excavator and truck will be used to load and transport the sand.
- The sand will be transported to the site and stockpiled.
- Once the requisite volume has been stockpiled, a front-end loader or bobcat will be used to spread the stockpiled sand to the design elevations and grades. Design grade describes the gradient of the finished surface of the dune. For this design the gradient is 1(vertical) to 3(horizontal) or 33% slope at the seaward face of the dune. The crest of the dune is flat (0% slope).
- Closing works

- A surveyor will then survey the works to ensure that the construction was done to recommended crest height and side slopes.
- All debris will be collected, removed and disposed of offsite at a suitable dump/landfill; and
- Equipment will be demobilised.

4.10.2 Site security and hoarding

The entire parcel will be enclosed with environmentally friendly green hoarding, which will be removed prior to an occupancy certificate being sought and obtained. Security personnel will be employed to cover the security of the site, materials, and equipment.

Proper signage will be used during the construction to warn patrons from both the road entrance and along the beach area. Hoarding will be installed around the perimeter of the property to prevent unauthorised access.

4.10.3 Storage of materials and equipment

During the construction phases, all materials and equipment will be stored in designated, controlled areas to ensure safety, minimize environmental impacts, and maintain the work site in an orderly manner.

All storage zones will be clearly demarcated and located away from sensitive coastal and any other sensitive natural areas. Impermeable surfaces and secondary containment measures shall be instituted or provided for fuels, oils, chemicals, and any other hazardous substances used during construction. This measure will be implemented to prevent spills or ground contamination.

Bulk materials such as aggregates, sand, and cement will be stored on level, compacted ground and covered where necessary to reduce dust and runoff. This is standard practice and shall be implemented as a standard operating procedure.

All equipment and machinery will be parked in secure laydown areas with drip trays or absorbent pads placed beneath stationary units as a protective measure against contamination.

Weather-sensitive materials will be kept in enclosed or sheltered spaces, and all storage areas will be routinely inspected to ensure compliance with safety and environmental standards.

This sensible approach will ensure that construction materials and equipment are managed responsibly, reducing risks to workers, nearby communities, and the surrounding environment throughout the project's duration.

The only materials and equipment to be stored on the site are those that are essential for the proposed project. Heavy equipment is to be stored onsite in a designated area. Hazardous materials including fuel shall be kept in appropriate containers and best international best management processes shall be applied to the use, storage and monitoring of these materials.

The contractor shall prepare a hazardous material management plan for review and approval by the developer prior to mobilization.

The developer or their representative shall regularly observe the project site for deviations from the adopted plan with immediate report to the contractor for corrective action.

4.10.4 Beach traffic impact and safety

Physical works will not occur on the beach, and beachgoers will be able to move around the nearby beach area without interruption. There will be an impact to patrons with possible noise and dust. Signs will be placed that inform patrons of works being done and the times of work.

4.10.5 Temporary sanitary facilities

During construction, as there is no local public health guidance or statute that address this, the developer will comply with the UK Health and Safety Executive's Guidance on Workplace Facilities and other international applicable standards. The developer will provide temporary sanitation facilities in accordance with established international public-health and occupational-safety standards. The project's contractors will provide enough portable toilets for the number of employees onsite. This standard requires a minimum of one toilet per 15–20 workers, with separate male and female facilities where applicable. This ratio ensures adequate access to hygienic amenities for the workforce and aligns with international guidance from OSHA, the UK Health and Safety Executive, and the International Labour Organization.

This guidance provides minimum several portable toilet/temporary facilities per the number of staff. The guidance is summarized in the table below.

Table 28 - Number of toilets and washbasins for mixed use (or women only)

Number of People at Work	Number of Toilets	Number of Washbasins
1-5	1	1
6-25	2	2
26-50	3	3
51-75	4	4
76-100	5	5

Source: UK HSE Guidance on Workplace Facilities

Further the prescription by United States, Occupational Health and Safety Agency *OSHA Guidelines/Standard 1910.141(c)(1)(i),* for Restroom and Sanitary requirement for workplaces can also be applied there as well are no applicable local regulations with regards to the provision of the number of temporary sanitary facilities as below:

Table 29 – Minimum Number of Water Closet per employee

Number of Employees	**Minimum Number of Water Closets**
1 to 15	
16 to 35	1
36 to 55	3
56 to 80	4
81 to 110	5
111to150	6
Over 150	(*)
**1 additional fixture for each additional 40 employees*	

Portable chemical toilets will be serviced at least weekly, with increased servicing during periods of high workforce numbers or hot weather conditions typical of Providenciales. Handwashing stations will be installed alongside all toilet units, equipped with running water, soap, and drying materials to maintain appropriate hygiene standards. This provision will ensure that sanitation facilities provided on site will remain clean, accessible, and sufficient throughout all phases of construction

As per the guidance, these facilities will be readily accessible for all site work zones and if necessary, there will be multiple zones for accessibility.

4.10.6 Access and staging

Access to the construction site will be via Grace Bay Road. No staging will be outside the premises of the construction site. It is suggested that no temporary off-street parking for the development will take place. Provisions will be made for onsite parking. This will be managed to prevent any obstructions, congestion, visual impacts or nuisances to the road and surrounding neighbourhood.

4.10.7 Solid waste Management – Those generated during construction

It is expected that all solid waste generated by the construction and during the operation of the project will be handled by permitted contractors who will be obligated to use environmentally sustainable collection, transportation and disposal methods.

All solid waste generated during construction or material debris will be stockpiled during construction activity and containerized where practical and then will be disposed at a suitable landfill facility or other destinations with recycling capabilities.

Final disposal shall be the responsibility of the contractor, with regular review by the developer's representative to ensure compliance with contractual requirements for waste management.

For smaller volumes of waste generated on site, the developer will provide sufficient and easily accessible waste receptacles (bins) for workers use with clear instructions for immediate disposal. Inspections will be made at the end of the day by the contractor to ensure compliance with use and maintenance of site cleanliness

Solid waste management experts and International best practices define several construction waste streams that shall be identified and managed during development of this project. These waste streams are generally categorized as follow; Inert Construction Wastes, Recyclable Wastes, Timber Waste, Packaging Waste, Hazardous waste, Organic Waste, and Domestic waste,

To understand how these are to be dealt with it does help to clearly define each category. Inert Construction waste includes waste such as concrete, block, masonry, tiles, stone, asphalt and aggregates that may be used during the development, while recyclable waste includes steel, aluminium, copper, cardboard, Plastics (HDPE, PVC, PET), Glass that may be used or disposed of on the site during construction. Conversely Timber waste includes all formwork, pallets, cut-off and other such wastes. Packaging waste includes all packaging material such as cardboard, plastic wrap, foam packing and strapping that may be delivered or used on site. Hazardous waste is defined as and may include all paints, solvents, adhesives, oils, lubricants, hydraulic fluids, fuel residues, batteries and chemical containers used on a site.

Organic wastes include all vegetation that may be cleared during construction and landscaping debris. Finally, Domestic Waste defines all wastes generated form the work force on site, and include food waste, plastics, paper and general refuse

Construction Waste Management Plan (CWMP)

Purpose of the CWMP

A construction waste management plan shall be developed and adhered to that will outline the procedures, systems, and responsibilities for managing all solid (and liquid) waste generated during the construction of the Moon Palace & Le Grand Hotel.

The plan ensures will be expected to ensure that all waste management activities shall comply with the current provisions of the overarching Public and Environmental Health Ordinance and further comply with any regulations that may be proposed or codes of practice that shall come into force.

This plan shall also ensure compliance relevant or related Planning regulations or conditions. The purpose of the plan shall be to ensure the protection of soil, groundwater, and nearby coastal waters. It shall ensure the safe handling of hazardous materials, it will ensure that there are waste minimization, reuse, and recycling activities in place to ensure that there is a reduction in amount of waste that ultimately may require disposal.

Finally, the Construction waste management plan shall ensure that there is proper storage, transport, and disposal of all waste streams

(See Construction Waste Management Plan)

4.10.8 Liquid waste Management – Those generated during construction

Liquid wastes generated during the construction phase will be managed through a structured and comprehensive system designed to prevent contamination of soil, groundwater, coastal environments, and any surrounding natural habitats.

The primary liquid waste streams include wastewater from worker sanitation facilities, equipment washing runoff, concrete washout water, fuels and lubricants, paints and solvents, stormwater contaminated by construction activities and any accidental spills.

Sanitary wastewater from temporary toilets will be fully contained within sealed chemical units and serviced by licensed waste handling contractors at a frequency appropriate to workforce size and climatic conditions. Waste will be transported off-site to an approved treatment facility. No untreated wastewater will be discharged to the ground or surface waters.

Concrete washout will be directed to a lined, impermeable washout pit to prevent alkaline leachate from entering the environment, with hardened residues removed and disposed of appropriately. Equipment washing will occur only in designated areas fitted with containment measures to capture runoff for proper disposal.

Fuels, oils, paints, and solvents will be stored in bunded, weather-protected areas, with spill kits and absorbent materials available at all storage and refuelling points. Any

spills will be addressed immediately following established spill-response procedures, and contaminated materials will be collected and removed by approved waste contractors.

Stormwater management measure including silt fences, berms, and temporary drainage controls, will prevent contaminated runoff from leaving the site during rainfall events. Regular inspections will be conducted to ensure containment systems remain functional, washout pits are not overloaded, and hazardous-material storage areas remain secure.

This integrated approach ensures that all construction-related liquid wastes are safely contained, handled, and disposed of in compliance with environmental and the Turks and Caicos Islands public and environmental health standards throughout the construction period.

4.10.9 Control of air, dust, water and noise pollution (generated by/heavy Equipment)

During construction of the Moon Palace and Le Grande hotel projects it is understood that measure will be necessary to control nuisances that may be generated by the construction project. It is anticipated that there may be impacts resulting from uncontrolled air contamination, dust, water and noise pollution. To address these issues, comprehensive measures will be implemented to control air emissions, dust generation, water pollution, and noise impacts across the hotel site.

Dust control

Theorists attribute a scientific name to the dust that occurs during construction as Construction Emission Dust (CDE). This may occur because of several onsite activities, that may include drilling, loading and unloading and more generally excavation and earth movement, among other causes. In most cases, these can lead to detrimental impacts on the general populace.

As an example, CDE was cited as being the causal factor for poor human health outcomes out of several other factors of construction pollution.

It is not anticipated that the construction activities of the development of the Moon Palace and Le Grande are expected to have any adverse or deleterious impacts on the neighbouring community, or the adjoining properties. Observations were made of the development site directly nearby, which has similar topography and soils, and showed that there was no observable dispersal of dust.



Figure 64 – Showing nearby development site in foreground and no visible dust impact



Photo 78 – (Development within the vicinity of Palace Company Site, Courtesy Kawa Williams)

Notwithstanding the above, dust will be minimized through regular wetting of haul roads, stockpiles, and work areas. Water will be applied to the site at regular intervals during all phases of the construction process such as site clearing and excavations. This application will be managed to ensure the application of water to the site does not create any unintended consequences. This action or process will prevent any dust fines from becoming suspended in the air and become airborne particulates.

Additionally covering of materials to prevent the dispersion of fines from material stockpiles will be employed. Other physical barriers like requiring fencing/hoarding to contain dust and debris, the use of covers of any waste during transport to prevent dust being airborne will be employed.

As is necessary, the project site will also enforce low-speed limits for construction vehicles.

Air quality

Air quality will be protected by maintaining equipment in good working order, prohibiting unnecessary idling, and ensuring that any generators and heavy machinery meet applicable emission standards.

Water pollution

To prevent water pollution, all runoff from construction zones will be directed through silt fences, berms, and sediment traps, with hazardous liquids stored in bunded areas and refuelling restricted to designated, contained locations.

Concrete washout, equipment washing will be minimized as far as practical, but any contaminated water will be captured in containment areas and removed by licensed contractors.

Storm Water

Observations during site visits did not reveal stormwater features (water scarring or cutting into soil or rock) at the development site. There was no evidence of direct discharge to the beach or any adjoining properties. Instead, it appears that storm water at the subject property percolates through pervious areas into the soil and filtering into any possible aquifers. No observations evidence of impact or water pathways were observed. The photos below are evidence of the site terrain that bears the above stated points.







Photos 79 – Development area showing no evidence of surface/storm water issues

The developers have indicated their intention for the design of a comprehensive storm water management plan, which will be designed to collect, convey and properly management and dispose of rainfall runoff. At minimal and as may be necessary, the standard prescription by the Department of Planning, be the development of discharge wells to handle and ultimately discharge said water can be employed. These wells can the integrated into operational phase of the property to handle said phenomenon.

Noise

Noise is defined by Environmental Health Practitioners as unwanted/undesirable sound that can affect job performance, safety, and health. Psychological effects of noise include annoyance and disruption of concentration. Physical effects include loss of hearing, pain, nausea, and interference with communication when the exposure is severe.

The construction will generally use light machinery and other miscellaneous sources of noise for construction at the site (concrete mixers, workers, trucks). Such equipment is not likely to cause any significant degradation of ambient environment or produce noise at decibel levels that could produce undue stress on receptors. Additionally, noise will be mainly limited to the construction site and will be limited in duration to daytime/working hours only.

Noise pollution will be controlled through the engagement and use of properly maintained equipment, ensuring the installation of mufflers on any generators deployed or utilizing available quiet running equipment and acoustic shields where necessary.

The scheduling high-noise activities during daytime hours and maintaining buffer zones between active work areas and sensitive receptors. These high noise levels are not likely to exceed the ambient/background levels and will be for a short duration.

4.10.10 Control/storage of fuels and other dangerous substances

Chemical hazards are present in most construction site environments, and these arise from a variety of sources. These sources include fuel that may be stored for use on site, chemicals used in construction process, and that may be held or chemicals stored on site. Exposure to hazardous chemicals or substances can cause a variety of human health effects (both minor and more serious) and environmental contamination. Fuels, oils, chemicals, and other hazardous substances used during construction will be managed under strict controls to prevent spills, fire hazards, and contamination of soil or coastal environments.

To ensure control of hazardous substances, the proponents shall employ several measures to ensure that workers and the environment are protected. These include the use of engineering controls. Engineering controls include the use of processes such as ventilation, substitution of materials, changing the process of use or enclosure/isolation.

All hazardous materials will be stored in designated, bunded areas with impermeable flooring and a containment suitable capacity, ensuring that any leaks or accidental releases remain fully contained. Storage zones will be covered or sheltered to protect against rainfall and reduce the risk of stormwater contamination. Refuelling, lubrication, and chemical handling will occur only in controlled locations equipped with drip trays, absorbent pads, and spill-response kits, and all machinery will be inspected regularly for leaks. Hazardous liquids such as fuels, solvents, paints, and hydraulic oils will be clearly labelled, kept in secure containers, and handled by trained personnel following established safety protocols.

A documented spill-response procedure will be implemented, requiring immediate containment, cleanup, and removal of contaminated materials by licensed waste contractors. Fire-safety measures—including extinguishers, no-smoking zones, and separation distances from ignition sources—will be maintained at all storage and handling areas. These controls ensure that dangerous substances are managed responsibly, reducing risks to workers, nearby communities, and the surrounding environment throughout the construction period.

Table 30 – Probable or identifiable risks or Environmental issues

Environmental Issue	Relative Impacts	Remarks
Soil Quality	Low Impact	✓ Loosening of soil cover during site clearing and land preparation for construction
Air Quality	Low Impact	✓ Minor dust nuisance impact during site clearance ✓ Exhaust from vehicles during construction and materials delivery
Drainage	Low Impact, if any at all	✓ The project will have onsite Wastewater/Sewage treatment facility ✓ Storm water runoff provisions implemented
Water Quality and Quantity	Low	✓ It is estimated that there will be minimum effects to the surrounding community during construction that result through poor drainage, and stagnant waters, Water and Wastewater emanating from the building upon occupation and Storm water from open surface run-off.
Land-use and settlement	Low	✓ Land use trends have already been determined.
Vegetation	Low	✓ No major effect since the area is undeveloped and with minor shrub coverage
Topography	None	
Health and safety	Medium	✓ Contingency measures on health and Safety measures will be taken into consideration.
		✓

Solid Waste Management during operation

Using regional SIDS data and TCI's tourism profile, it is expected that the reasonable composition the project's waste stream would be approximately 40 – 50 percent organic waste (1.6 – 3.0 tonnes per day) that includes food waste and green waste. The main sources of these would be buffets, restaurants, bars, staff canteen, room-service, prep waste.

Paper and cardboard would approximate 15 -20 percent (0.6 – 1.2 tonnes per day) and will be derived from packaging, delivered items and administration.

The other categories are plastics (approximating 15 – 20 percent or 0.6 -1.2 tonnes per day), Glass (7 – 10 percent or 0.3 -0.6 tonnes per day), Metals, residual or mixed waste and variable amount of green waste from landscaping that may range from 0.2 – 0.5 tonnes per day.



Photo 80 - Providenciales Waste Disposal Facility (Photo courtesy Hydea International)

Given these dynamics, the operational phase will implement a fluid and dynamic waste management plan that will align their operations to the need to reduce waste generation and to protect and conserve the environment. The property will address waste streams by promoting the reduction of waste, re-use where and institute a recycle programme that separates and sorts of waste to facilitate future waste recycling programmes. The

promotion of the elimination of single-use bottles and packaging, and the implementation of composting of organic waste for use as a nutrient base for landscaping are only two examples that can be applied here context. Additionally frequent haul-off from residual waste to landfill would be standard.

The developer anticipates that from a regulatory point of view the Department of Environmental Health will expect a robust waste management programme, while for reputational reasons the developer understands that guests increasingly expect and appreciate visible sustainability efforts. Discussions with TCI Green and other companies have begun and may prove fruitful in reducing waste cardboard and other recyclable materials from reaching the landfill.

Construction vs. Operation (TCI lens)

Construction phase

- **C&D waste:** concrete, block, steel, timber—hundreds to thousands of tonnes.
- **Packaging:** high volumes from imported materials.
- **Hazardous:** paints, solvents, oils.
- TCI risk: overloading landfill, unmanaged hazardous waste, wind-blown debris.

Construction Waste Management Plan

Estimated Waste Quantities

i. Total Construction Waste

- **Concrete & masonry:** 1,500–2,500 tonnes
- **Steel:** 300–500 tonnes
- **Timber:** 150–250 tonnes
- **Packaging waste:** 80–120 tonnes
- **Hazardous waste:** 5–10 tonnes
- **Vegetation/green waste:** 200–400 tonnes
- **Domestic waste:** 1–2 tonnes/day

These estimates guide storage, transport, and disposal planning.

ii. Waste Management Hierarchy

The CWMP follows the internationally recognized hierarchy:

- **Reduce** – efficient procurement, accurate material ordering
- **Reuse** – formwork, pallets, timber, aggregates
- **Recycle** – metals, cardboard, plastics, glass
- **Recover** – crushing concrete for fill
- **Dispose** – residual waste to Providenciales landfill

iii. Waste Segregation System

iv. Segregation Zones

The site will include clearly marked waste-segregation areas for:

- Concrete & masonry
- Metals
- Timber
- Plastics
- Cardboard
- Hazardous waste
- Domestic waste

Zones will be fenced, signposted, and accessible to construction crews.

v. Color-Coded System

- **Blue:** Recyclables
- **Green:** Organics
- **Yellow:** Timber
- **Red:** Hazardous waste
- **Grey:** Inert construction waste
- **Black:** Residual waste

vi. Waste Handling Procedures

vii. Inert Construction Waste

- Concrete and block waste will be crushed on-site where feasible.
- Crushed material reused as sub-base, fill, or road bedding.
- Excess inert waste transported to designated C&D areas at the Providenciales landfill.

viii. Metals

- Stored in covered bins.

- Sold or transferred to metal recyclers.
- No metals sent to landfill unless contaminated.

ix. Timber

- Reuse formwork where possible.
- Clean timber chipped for landscaping mulch.
- Treated timber disposed of as residual waste.

x. Packaging Waste

- Cardboard baled and recycled.
- Plastics segregated by type.
- Foam packaging disposed of as residual waste.

xi. Hazardous Waste

- Stored in **bunded, locked containers**.
- Inventory maintained.
- Collected by licensed hazardous-waste contractor.
- No hazardous waste stored on site longer than 30 days.

xii. Organic Waste

- Vegetation chipped for mulch.
- Large trees reused for landscaping where possible.
- No burning permitted.

xiii. Domestic Waste

- Daily collection.
- Stored in sealed bins.
- Transported to landfill by licensed hauler.

Liquid Waste Management During Construction

i. Concrete Washout

- lined washout pits.
- No discharge to soil or storm drains.
- Hardened concrete reused as fill.

ii. Oils, Fuels, and Lubricants

- Stored in bunded areas.

- Spill kits available.
- Used oil collected by licensed contractor.

iii. Paints and Solvents

- Stored in ventilated, bunded containers.
- Waste solvents collected for off-island disposal.

iv. Stormwater

- Silt fences.
- Sediment traps.
- Stabilized entry points.
- No runoff allowed to reach coastal waters.

Storage and Transport

v Storage

- All waste stored in designated, signposted areas.
- Hazardous waste stored in locked, bunded units.
- Recyclables stored under cover.

vi Transport

- Only licensed haulers used.
- Waste manifests maintained.
- No uncovered transport of loose waste.

Monitoring and Reporting

i. Daily

- Site supervisor checks segregation areas.
- Spill inspections.
- Waste-bin condition checks.

ii. Weekly

- Waste volume estimates.
- Recycling performance review.
- Hazardous waste inventory update.

ii. Monthly

- Waste audit submitted to project manager.
- Corrective actions implemented.

Record Keeping

- Waste manifests.
- Hazardous waste logs.
- Recycling receipts.
- Training records.

Training and Awareness

- All workers receive induction training on waste segregation.
- Weekly toolbox talks.
- Posters and signage throughout site.
- Specialized training for hazardous-waste handlers.

Emergency Response

i. Spills

- Spill kits at fuel storage, paint areas, and washout zones.
- Immediate containment.
- Reporting to DEH if significant (quantification to be agreed).

ii. Fires

- No burning of waste.
- Fire extinguishers at waste zones.

iii. Storm Events

- Secure all waste bins.
- Cover loose materials.
- Inspect bunded areas.

Responsibilities

Project Manager

- Overall compliance.

- Reporting to DEH.

Site Environmental Officer

- Daily inspections.
- Waste audits.
- Training.

Site Foremen

- Enforce segregation.
- Maintain waste areas.

Contractors

- Comply with CWMP.
- Maintain clean work areas.

This environmental assessment has used the following assumptions to make judgements on the types of waste and the estimated daily waste volumes that are expected to be generated by the project. These assumptions are that for the optimal occupancy would be at 75 percent of the total available rooms. The occupancy at 75 percent would be approximate 1500 guests. Staffing for the property at the same occupancy level would be estimate 700 – 800 staff (including Front Office, Food and Beverage, Maintenance, Housekeeping, etc). Given this, realistically the planning range for total solid waste would be a daily rate of 4-6 tonnes.

4.10.11 Emergency Mitigation Plan

The Contractor will always be at a high level of emergency preparedness and readiness to deal with accidents, evacuation in the event of a storm and any other incidents. The emergency plan will include the establishment of a network of communications with Police, Medical and Ambulance and Fire Services during construction and operation of the proposed development. A full nursing station will be opened during the operation of the proposed development. A First Aid Kit will be permanently kept on the construction site in a strategic location easily accessible to all workers.

Fire extinguishers will be fixed on all heavy machinery, i.e. tractors, bulldozers and trucks in the unlikely event of a fire. Appropriate instructions about fire risks must be given to all construction staff prior to commencement of construction. There will be no hazardous materials, waste, fuels, lubricants, or substances stored on the construction

site or in the vicinity. All vehicles, equipment and machinery will be refueled by a fuel/maintenance truck owned and operated by the Contractor, which will be called to the construction site on an as needed basis. There will be no contamination or pollution of soil or water.

The Contractor must be responsible for ensuring that there is absorbent material available on site to manage and clean up any accidental spillages of oils, fuels, lubricants, or other hazardous substances.

Upon completion, the Contractor will be required to reinstate all areas affected by construction to its original condition. Revegetation will not only be required in areas affected by the road construction, but also in areas used for the parking and storage of machinery during the day. The area for daily parking of vehicles must be allocated by the Contractor and agreed with the Directors of Planning and the DEMA. Reinstatement and revegetation must also occur in the aforesaid areas.

A Fire Plan will be developed in consultation with the office of the Chief Fire Officer for operation of the proposed development.

At the end of each day during construction, the gate will be locked in place at the entrance to the site to prevent unauthorized access and for security reasons. The building contractor will be held to best practice performance requirements.

After completion of construction, the contractor and site manager will ensure that the site is fully clear of construction activities. These activities include:

- All chemicals, waste stored on site, and concrete washout areas will be removed.
- A licensed contractor will properly dispose of oils, lubricants, or fuels.
- The contractor will clean, dismantle, and remove all equipment.
- All temporary buildings, trailers, and excess materials will be removed from the site.
- The site will be returned to its natural state. The exception is the beaches, which have permanent structures.

Two basic hydrogeological mitigation strategies will be employed for this project:

A. Avoidance of Risk – identify potential risk (injection /disposal failure), plan for risk (design deep injection / disposal well) and initiate mitigation steps to avoid the risk (injection / disposal well testing prior to construction).

B. Watch and Monitor – use of pressure gauges at the head works of the injection / disposal well(s) to act as early warning mechanism to alert to potential well failure. Daily monitoring schedule will provide input for routine evaluation.

Additionally, the implementation of a stormwater and site drainage network comprised of strategically place drainage wells will act to intercept potential flood episodes and reduce site flood potential.

Health and Safety Plan

The Project Manager or Owner/Developer shall appoint a designated Health and Safety Officer (who will be responsible for overseeing and ensuring the implementation of all health and safety protocols for the project).

The Health and Safety Manager is responsible for implementing the health and safety protocols and promoting an effective safety culture on site. They are responsible for responding to all emergencies. The general responsibilities of the HSO are as follows:

- The HSO will report to The Project Manager.
- With the assistance of The Project Manager and the Site Supervisors, the Safety Manager is responsible for overseeing the implementation and enforcement of all applicable safety and health rules/regulations. The manager has the responsibility and authority to take prompt corrective measures and implement additional safety procedures as necessary to eliminate working conditions that are unsanitary, hazardous, or dangerous to employees.
- Identification of the hazards and risks relevant to the construction project through regular coordinated site inspections.
- Reports identified safety hazards to the Project Manager, Site Supervisors, and affected Subcontractor(s) and provides written verification and documentation to The Project owner when so required.
- Facilitate site health and safety meetings, Site Inductions, and Toolbox Talks.
- Compiling project-specific emergency response and preparedness plans.
- Testing the effectiveness of the emergency response plans.
- Investigate and report project-related incidents.
- Maintenance of all records.
- Participation in management reviews of the health and safety systems.

The HSO is required to have basic first-aid training. There should always be a fully equipped first aid box at all work sites and a list of local emergency telephone numbers in case of an accident. Minor and major accidents shall be reported to the HSO, where they are recorded in an accident logbook. **ALL** accidents, including `near misses' / dangerous occurrences, regardless of severity, must be reported immediately to the HSO. After every incident, the HSO should carry out measures to determine the cause of the accident and to develop changes or corrections that may be needed to prevent the recurrence of the same or similar type of accident.

The HSO shall ensure that all staff, including subcontractors, undergo safety training and inductions. These training events will educate workers in the best practices for working (to include but not limited to):

- With hazardous materials.
- In confined spaces.
- With heavy equipment.
- Over and/or near water.
- With hot works.
- At heights.

Toolbox Talks

At the HSO's discretion, regular "Toolbox Talks" will be conducted after the initial Site Induction. The Toolbox Talks will include information on some or all the topics listed above depending upon the site-specific conditions: -

A Toolbox Talks form / Site Induction register form shall be completed for each talk and shall contain the following information: -

- Supervisors Printed Name & Signature.
- Date.
- Site/Project Name.
- Talk topics.
- Printed name and signature of each operative attending.

Site Rules

All construction personnel involved in the work will observe the following basic working rules, amongst others:

- Relevant Personnel Protective Equipment (PPE) will be issued and used before the commencement of the work.
- PPE shall be always worn on-site, except for the dedicated safe area(s) and welfare facilities.
- Proper training and induction in the various roles for the type of activity will be performed.
- Experienced and active supervision will be in place at all work times.

Site-specific rules will be posted in the canteen/office, and copies will be given to all personnel working on the site. They will contain details of No-Smoking requirements, dress code, PPE requirements, emergency arrangements, etc.

Use of Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE), including protective suits, gloves, hard hats, life vests, safety vests, and goggles, shall be worn in areas designated for their use. At all times, work sites shall be maintained in an orderly, safe, and tidy state. Precautions against fire accidents shall be taken, and appropriate fire safety equipment shall be supplied and clearly indicated at work sites.

Life Jackets must be worn when working near open water where no sufficient handrail or edge protection is present or when accessing/egressing a vessel using life jackets, lifelines/rings, and a safety boat. Work sites shall be maintained in an orderly, safe, and tidy state always.

Site Inspections

The HSO will inspect sites for compliance with approved working methods and contractual requirements. The emergency assembly site should be identified before work begins and relayed to on-site workers during induction and Toolbox Talks. In any emergency, the staff will meet in this area, away from the building and near the exit site, for easy evacuation.

The national labor laws and occupational health and safety policies for Providenciales will be always applied.

Construction activities can become dangerous if managers and operators are not careful. All efforts must be made to avoid dangerous or reckless practices on the construction site. The following are recommended practices to prevent emergencies and what should be done in the unfortunate case of a site accident.

Neighbourhood Mindfulness

Construction will be inconvenient for the surrounding residents and beachgoers. To mitigate any accidents from lack of information, it is imperative that clear communication occur. Neighbours should be informed of construction and the possible hours of construction/disturbance. Neighbours should also be informed of the positive impacts of the works such as reducing site inundation in hurricanes.

Muster Points and Evacuation Routes

Muster points and evacuation routes must be designated before the start of the construction and operational phases. Muster points are relatively safe locations where people can gather when an emergency occurs. At this location designated team leaders would verify that everyone is accounted for and provide further instructions. Evacuation routes will be used to move from the construction site to the appropriate muster point in each case. Muster points and evacuation routes must be clearly marked and kept unobstructed throughout the construction and operational phases.

Public Access and Recreational Use

During active construction hours (strictly 8am-5pm) there will be no public access or recreational use along the section of dune being worked on. After construction hours patrons should be warned with signs if they choose to enter the area.

Health and Safety

All workers will be given an orientation of the challenges associated with working in a marine environment. For each work activity, potential risks will be explained and proportionately addressed with risk-mitigation strategies. Appropriate protective gear will be used by all workers. Gear will include ear plugs, steel-toed boots, hard hats, wetsuits, high visibility vests and gloves. Neighbours and locals will be notified of the works, and caution tape will be placed along the beach, stockpile area and access path for equipment.

Emergency Response

In the unfortunate event of a worker being injured on site, work along his or her section will be stopped, and emergency response teams called to quickly aid the worker. The cause of the incident will be investigated to prevent further injury on site and safety procedures will be reiterated.

On-Site Resources

In addition to best practices, equipment and materials must be provided on site to respond to emergencies. These will include:

- Buildings or open areas designated as muster points with resources listed below:
  - A siren system to warn staff and nearby residents when an emergency arises.
  - Fire extinguishers on site.
  - Adequately stocked first aid kits.
  - Drinking water.

4.11 Socio-economic

The proposed development must have the effect of creating opportunities for Turks and Caicos Islanders in areas of technology, entrepreneurship, fisheries, aquaculture, arts and crafts. It is the responsibility of the TCIG Cabinet, the Employment Services Department, the Work Permit Board, and Immigration Department to ensure that Turks and Caicos Islanders are given first preference in all areas.

The National Development Strategy for strengthening the economy and creating an educated workforce, which was alluded to by the Hon. Premier must be completed.

The Minister for Education at the TCI Business Outlook conference highlighted all relevant areas that is inextricably linked with the preparation of Turks and Caicos Islands for such a major project. These are different and apart from the conventional areas for economic opportunities from development:

- Contributing to the TCIG mission of having an educated and ready populous by 2040 and a high quality of life for all.
- Participation in the creation of a nation that is resilient.
- Contributing to areas that ensure early childhood development; Primary and Secondary education; and Tertiary Education for all.
- As a corporate entity, sharing the belief and practice with TCIG that it is the responsibility of all stakeholders to ensure that Turks and Caicos Islands citizens are qualified and skilled.
- Technical and vocational education is a strategic priority.
- Strengthening of Apprenticeship opportunities by linking them directly to the proposed Moon Palace Resort and others. This allows students to benefit from

apprenticeship programmes over a two-year period, for example, what the Grace Bay Club is already doing.

- Apprenticeship programmes are the most powerful across the Caribbean. It prevents students having to go aboard. It also shows government and the private sector in an engaged, meaningful, and collaborative effort.
- The Moon Palace Resort must be obligated to participate in the apprenticeship programmes but also sponsor several scholarships annual for Turks and Caicos Islands citizens.
- Moon Palace Resort could create and/or sponsor programmes that lead towards digital literacy, thereby creating learning opportunities beyond the classroom.
- A resort of the magnitude such as Moon Palace could promote and boost fly fishing and make it an economically viable resource for the Turks and Caicos Islands.
- Sponsoring and promoting sustainable agriculture (hydroponics) into the high schools.
- Promoting local arts and crafts.
- Culinary programmes.

4.11.1 Demographic

The population of the islands is relatively young, with the age group of 0-14 years old accounting for 20.97% of the population and 15 years and making up approximately 74.84% of the population, while 65 years old and over representing just 4.87% of the population. The Male-Female Ratio of the 2012 population of the TCI stood at 99.1%. However, the present working age population cannot sufficiently service the booming construction industry, resulting in a heavy dependence on foreign construction workers.

Introducing a 976-bedrooms mega-resort like a Moon Palace property on Grace Bay, Providenciales coupled with the already existing resorts and those in the planning stages, would fundamentally shift the demographics of the Turks and Caicos Islands. For context, the entire country has a resident population of only about 47,000 people, with the vast majority living on Providenciales.

A mega-resort of this size typically requires a staffing ratio of 1.5 to 2 employees per room, creating 1,500 to 2,000 direct hospitality jobs, plus thousands more in indirect services.
The major demographic impacts are as follows:

Inward Migration and Population Growth: The local TCI labor force cannot fulfill 2,000 new job openings. The resort would require a massive influx of foreign workers via temporary work permits, rapidly inflating Provo's permanent and semi-permanent resident population, straining immigration administration and enforcement and changing local demographics.

Demographic Change: The balance between "Belongers" (indigenous Turks and Caicos Islanders) and expatriates would lean further toward expatriates. This accelerates the ongoing trend where Belongers form a demographic minority within their own country.

Widening Disparity: This scale of development would widen the existing disparity between Providenciales and the remainder of the Turks and Caicos Islands, especially the capital Grand Turk.

Cultural, Linguistic, and Ethnic Shifts: Dilution of culture and traditional way of life.

Residential Density and Urbanization: 2,080 new workers would seek housing in more affordable areas like Downtown Provo, Five Cays, Blue Hills, Wheeland, and Kew Town, which, without strict and massive enforcement controls, will result in a sudden housing shortage thereby accelerating the growth of illegal and substandard housing.

Infrastructure strain: TCIG must be prepared for unprecedented pressures on schools and clinics.

4.11.2 Employment – Labor & skills demand at construction and operation

The Moon Palace Resort development is likely to place an additional burden on the already stained labour force during both the construction and operational phases of the development.

A total of 2080 persons will be employed during the operational phase of the development and 3500 during construction. 70% of the workforce is anticipated to be foreign and 30% local.

4.11.3 Safety/security concerns within the community (Construction and Operation)

As mentioned earlier, the Turks and Caicos Islands (TCI) have experienced a historic and dramatic drop in serious crime. The Royal Turks and Caicos Islands Police Force (RTCIPF) has transitioned to an intelligence-led, zero-tolerance strategy that has significantly curbed the island's crime.

By mid-2026, official government and police updates confirmed that overall crime across the territory has plummeted by approximately 50%, with homicides seeing a massive reduction. TCIG with the support of the private sector and the law-abiding community will continue to ensure that the current downward trend continues.

Community safety and security concerns are discussed in two phases, construction and operations.

4.11.3.1 Construction

Providing and maintaining appropriate levels of site security during the construction of The Moon Palace Resort development is one of the main objectives of the contractor and owners of the proposed development, as it will protect the site, reduce the potential for theft and restrict entry to only authorized personnel.

Some security measures to be taken during the construction phase of the development include the development of a security plan by the contractor prior to the commencement of construction work, securing the perimeter boundaries of site to restrict access, install security lights, have limited access to the site and install surveillance security systems.

4.11.3.2 Operations

The increasing criminal activity in the Turks and Caicos Islands, particularly, Providenciales has placed tremendous challenges on hotel owners and management to ensure the safety and security of hotel guests, workers, and patrons. Hotel security is all about the management of all aspects of a hotel operation, its property, grounds, equipment, personnel and more. Hotel security involves the establishment of effective procedures, systems, and personnel to ensure the safety and security of all guests, their belongings, and the staff.

The Moon Palace Resort development residential facility management will develop security measures to ensure that any physical, financial or information threats to property and guests are reduced. This will be accomplished by providing surveillance monitoring systems throughout the property, equipping employees with safety devices, ensure that all employers are trained in safety and security measures and develop a security plan for the facility operation prior to the opening.

The facility management will also work with the Royal Turks and Caicos Police Force to develop a neighbourhood policing program.

4.11.4 Issues raised in public consultation (written and verbal concerns)

Concerns that have been raised from scoping exercises, meetings with TCIG officials, utility providers, and those from the community during the beach user surveys have informed the findings in this environmental impact statement (EIS). It is anticipated that any additional concerns to be addressed following the presentation of the EIS will be addressed accordingly.

Public involvement is a fundamental principle of the EIA process. The inclusion of the views of the affected and interested public help to ensure the decision-making process is equitable and fair and leads to more informed choice and better environmental outcomes.

Some of the issues raised at local agencies consultation level include the potential for coastal erosion, solid waste disposal methods to be employed, the use of renewable sources and sustainable and resilience construction methods and construction materials to be use in the construction of the hotel facility. Beach carry capacity is another issue raised, particularly as it relates to the use and placement of beach furniture. Safety and security of guests and visitors in swimming and snorkelling zones in the marine area in the front of the property. Swimming zones and boat access lane will be established to separate the two users.

4.11.5 Total projected visitors' numbers in high and low seasons

The Turks and Caicos Islands as a destination welcomed around 640,000 total stayover visitors in 2025. The proposed Moon Palace 976 room hotels across two all-inclusive hotel resort will drastically increase that figure.

According to marketing research by The Moon Palace Company, the proposed development is projected to generate a net increase of approximately 200,000 to 250,000 stayover tourists annually to Providenciales. The permanent resident population is expected to grow between 30% to 40%.

During the high-season (December – April) all-inclusive mega-resort boast of occupancy rates between 85 to 95 %. The project is designed to accommodate 2,000 to 2,400 active stayover visitors on any given day. During the low season the occupancy rate is much lower, between 55 to 70 %. Such rates will ensure a daily stayover visitor of between 1,100 to 1,750 guests.

4.11.5 Total projected increase in population

The Turks and Caicos government is presently undertaking a population policy to help inform its immigration policy. Due to porous borders and ineffective immigration system the exact population of the Turks and Caicos Islands is unknown, however, it is estimated at around 47,000.

Based on the scale of the proposed development and the severe deficit in existing on-island labour force, economic data and community impact assessment suggest that the hotels will require around 2,500 to 4,000 workers to fully manned and operate the facility. This workforce must come from outside the TCI, thereby substantially increasing the resident population of Providenciales by 2030.

Direct and indirect permanent workforce requirement for a development the size of the Moon Palace based 1.5 to 2 employees per will require around 1,500 to 2,000 permanent on-site workers. Additionally, the spillover effect of the development can see around 2,846 permanent jobs being created across the island, adding to the permanent resident population.

4.12 Impact on the terrain including method of clearing of the site

The Moon Palace Resort and associated development will alter the terrain of the site including site enhancement work, construction of boardwalks, elevation of finish buildings' finish floor levels to protect the proposed development from storm surge. The site will be graded and sloped to increase stormwater runoff and reduce erosion.

Environmental and physical impacts include changes to the topographic of the land by elevating it.

4.13 Potential Alternatives

The Turks and Caicos Islands National Physical Development Plan 2020 emphasizes the importance of diversification of our economy and of the tourism product or offering. The Premier at the Business Forum which was held on 5th June 2026 highlighted that his government is committed to strengthening the socio-economic foundations of today to secure a strong tomorrow in the global economy. TCIG has already signed a development agreement to construct the development as proposed. The proposed development is intended to diversify the economy of the Turks and Caicos Islands as did the *Beaches* TCI. The Moon Palace Resort is envisaged as a key component of investing stronger and wise today to secure a sustainable economic future for the Turks and Caicos Islands.

The alternative of "Do-Nothing" which would have no development was considered. This option is the cheapest option in the short term as there would be no expenditure used for raising the land. Additionally, the property is well protected against typical swells and has a stable beach width as was shown in prior analyses.

Unfortunately, the "Do-Nothing" alternative does not provided protection against inundation in storm events. Model simulations with climate change have shown that the property and critical roadway, Grace Bay Road, could be affected by storm surge under the 100-year storm. In the medium to long-term this alternative would be more costly as the property and roadway become increasingly vulnerable to rising seas and hurricane surges.

The building height question was settled with the change in government policy to allow the 12-story Ritz Carlton development. The was challenged in the court system and the Ritz Carlton Won. Subsequently, the National Physical Development Plan was amended to allow 12-storeys building on designated areas along the Grace Bay strip.

Considering government's policy to promote tourism development as an engine of economic growth to generate increased revenues, employment opportunities and improved the socio-economic wellbeing of the people the "No-Go" as an alternative was not given much serious consideration.

4.11.14 Others

Other concerns raised included the use of natural plant species vs foreign species was identified as a critical option for consideration during the preparation of the landscape plan. The use of natural plant species as the preferred option. The use of pesticides and fertilizers were discouraged by local environmental authorities.

The team is satisfied that all the concerns addressed in this environmental impact statement (EIS) comprehensively and satisfactorily address all the relevant parameters.

SECTION V

5.0 Environmental Impact Assessment

This EIA study has scoped out the concerns, identified the impacts, short term and long term, positive and negative, direct and indirect of the proposed development on the receiving environment and have provided mitigation measures.

No shoreline enhancement works will be undertaken at this site given the Do-nothing approach to be observed for the coastal environment. As no works are proposed within the coastal or marine environment, direct impacts on marine assets are not anticipated. Existing coastal processes, including wave transformation, tidal exchange, sediment transport, erosion and accretion patterns, will continue to operate under prevailing natural conditions.

The assessment therefore focuses on potential indirect interactions between terrestrial activities and adjacent coastal and marine assets. Potential impact pathways include surface water runoff, sediment transport, accidental releases of contaminants, windblown debris, dust deposition, litter accumulation and increased human interaction with coastal resources.

For this assessment, the principal environmental assets considered are:

- Nearshore benthic habitats
- Coral communities and associated hard substrate habitats
- Seagrass Areas
- Marine Fauna
- Beach and Sand Dune ecosystems
- Coastal Water Quality
- Solid Waste Impacts
- Light Impacts
- Wider Coastal Ecosystem functions

Impacts have been assessed based on their potential spatial extent and the likelihood of interaction with identified coastal and marine assets. The project site represents the area directly associated with the existing site and terrestrial environment, where any potential impacts would occur through direct interaction with site activities or

conditions. The 500 m Radius represents the local zone of influence where indirect environmental pathways, such as surface runoff, sediment transport, debris movement or accidental releases, may potentially affect adjacent coastal and marine assets. The 5 km Radius represents the wider coastal assessment area where broader ecological interactions, cumulative pressures and potential effects on the wider marine environment may be considered. Given that the selected Do-nothing approach involves no coastal intervention, shoreline modification or marine works, potential impacts to coastal and marine assets are expected to be limited in magnitude and primarily associated with indirect environmental pathways. Where appropriate environmental management practices are maintained, these potential impacts are anticipated to range from negligible to minor.

5.1 Impact Identification and Assessment Methodology

Developments of this scale bring about significant socioeconomic and environmental stresses during their construction and operational phases. While the project presents substantial immediate economic capital injections, it simultaneously places measurable pressure on local infrastructure, ecosystems, and community way of life. Potential impacts have been identified based on the interaction between existing terrestrial activities and adjacent coastal and marine assets. As no coastal or marine works will be undertaken, impacts associated with seabed disturbance, habitat removal, shoreline modification, sediment redistribution from engineering activities or alteration of coastal processes are not anticipated.

Potential impacts considered within this assessment include:

- Changes in coastal water quality resulting from surface runoff;
- Sediment transport from disturbed terrestrial areas;
- Accidental release of fuels, oils or other contaminants;
- Windblown litter and debris entering the coastal environment;
- Dust deposition into adjacent nearshore waters;
- Increased human interaction with coastal and marine resources;
- Potential disturbance to dune vegetation and coastal habitats;
- Introduction or spread of invasive species through landscaping or site activities; and

- Potential effects associated with climate change and existing coastal vulnerability.

- Air Quality & Noise Pollution (site grading, material hauling, dust, heavy machinery, drilling, piling) – H/ST.

- Waste Generation (The generation of massive tons of physical debris, concrete runoff, and packaging materials will create a strain on landfill site) – H/LT.

- Ecosystem Fragmentation (Immediate land clearing activities result in localized flora eradication and the forced displacement of native wildlife species) – H/LT.

- Massive Foreign Labour (Revenue for local surrounding retailers, food service, and convenience businesses) – H/LT.

- Increase in prices of building materials (concrete, steel, timber) – M/ST.

- Frequent transit of heavy goods vehicles (HGVs) and worker commuting vehicles precipitates severe traffic congestion along roads – H/LT.

- Degradation roads due to continuous heavy vehicles – M/ST.

- Hundreds of worker vehicles daily can quickly overwhelm local parking infrastructure, spilling into residential zones – H/ST.

- The need for housing (Providenciales already suffer from a shortage of affordable housing. Housing hundreds of imported construction and resort workers would severely worsen the local housing market) – H/LT.

- Demographic changes: The local population cannot supply 2000 hospitality workers. This requires massive foreign labor, straining regulatory and other services provided by TCIG, local Banks, etc. and changing local demographics – H/LT.

The assessment considers both the likelihood of these impacts occurring and the sensitivity of the receiving environmental assets. Due to the absence of direct coastal intervention, most potential impacts are expected to be low likelihood and limited in extent.

Possible impacts over the project life are categorised as occurring during the construction phase or the operational phase. The impacts are further classified as direct

or indirect based on the area of impact. For this project there are three areas of impact: (1) the option footprint; (2) a 500m radius from the site and (3) a 5km radius from the site.

The impacts on the coastal environment have been quantified by assessing modelling results before and after the concept is put in place. There were few changes observed on the wider impact areas since there is no permanent interaction with the nearshore area.

Impacts were identified and assessed based on their significance. Significance is a measure of the impact's magnitude and its likelihood (Table 31).

- **Magnitude –** magnitude was determined by combining The Project activity's duration and intensity.

    - ***Duration –*** The timeframe The Project activity will influence The Project area. The impact duration measures the time it takes for the impact environment to return to baseline conditions or undetectable levels. Duration can range from:

        - ***Temporary (T)***– impacts persist for a short duration and occur occasionally and/or intermittently.
        - ***Short Term (ST)*** – impacts are expected to persist for the duration of The Project activities related to the construction phase of The Project.
        - ***Long Term (LT)*** – impacts extend beyond the duration of the construction period and exist throughout the life of The Project.
        - ***Permanent (P)*** – impacts that persist far beyond The Project's life and are irreversible environmental changes due to Project activities.

    - **Intensity** – The degree to which an impact affects the environment. The intensity of an impact can be considered as:

        - ***Negligible (N)*** – Impacts that have no detectable change on the environment.
        - ***Low (L)*** – Impacts that do not alter the environment's natural flows and processes.
        - ***Moderate (M)*** – Impacts that alter the natural flows and processes of the environment while allowing the flows and process to retain their natural functions.

- ***High (H)*** – Impacts that alter natural flows and processes to the extent where natural functions are inhibited temporarily or permanently.

- **Likelihood**—The potential for an impact to occur. This can be categorized as Unlikely, Likely under most conditions, or Highly Likely. Risk Scores will be used to measure the likelihood of the impact occurring and are measured on a scale of 1-10, with 1 being unlikely, 5 being likely, and 10 being highly likely to occur.

Table 31 - Magnitude classification system used to identify and assess impacts

Significance		
Magnitude		**Likelihood**
Duration	**Intensity**	
Temporary (T)	Negligible (N)	Unlikely (1)
Short Term (ST)	Low (L)	Likely (5)
Long Term (LT)	Moderate (M)	Highly likely (10)
Permanent (P)	High (H)	

5.2 Description of impacts

The preceding sections of this environmental impact statement have detailed the impacts associated with the proposed development.

The selected approach will result in no direct alteration of the existing coastal environment. No shoreline structures, marine infrastructure, beach modification, dredging, reclamation or other coastal interventions will occur. The existing coastal system will therefore continue to respond to natural drivers including waves, currents, tides, seasonal variability, storm events and longer-term climate influences. The primary consideration for coastal and marine assets is the potential for indirect effects arising from terrestrial activities. These effects may occur where environmental pathways allow materials or contaminants generated on land to enter adjacent coastal waters.

These potential indirect effects include:

- Increased sediment delivery to nearshore waters during periods of rainfall;
- Reduced water quality associated with nutrients or contaminants;
- Introduction of marine debris or litter;
- Localised dust deposition;
- Disturbance associated with increased human activity; and
- Potential pressure on sensitive coastal habitats.

The magnitude of these impacts is expected to remain low due to the absence of activities that directly disturb marine habitats or alter coastal processes.

5.2.1 Potential impact on the biotic environment

The coastal and marine environment surrounding the site supports a variety of environmental assets, including nearshore benthic habitats, coral communities, seagrass areas, marine fauna and associated coastal ecosystems. These resources provide important ecological functions, including habitat provision, biodiversity support and contribution to the wider coastal environment. Under the selected approach, no coastal works, shoreline modification or marine activities will occur. Therefore, no direct impacts on marine assets are anticipated. There will be no physical disturbance of the seabed, removal or burial of benthic habitat, alteration of coral communities, disturbance of seagrass areas or modification of existing coastal features. Potential impacts on marine assets are limited to indirect pathways associated with existing terrestrial activities and broader environmental pressures. These pathways may include surface water runoff, sediment transport from terrestrial areas, accidental release of pollutants, windblown debris, litter accumulation, dust deposition and increased human interaction with coastal resources.

Within the immediate project area, potential impacts are expected to be primarily terrestrial in nature, with any interaction with marine assets occurring only where environmental pathways allow materials or contaminants to migrate beyond the site boundary. The likelihood and magnitude of such effects are expected to be low where appropriate environmental management practices are maintained. The beach and dune environment represents an additional coastal asset that may experience potential pressure through human activity, vegetation disturbance or natural erosion processes. However, as no coastal works are proposed, any effects on dunes or terrestrial coastal habitats are expected to be limited and should be addressed primarily through appropriate terrestrial management practices.

Within the 500m zone of influence, potential effects on nearshore marine assets may include localised reductions in water quality associated with sediment or contaminant transport, accumulation of debris and disturbance associated with increased human activity.

These impacts are expected to be minor due to the absence of any activities that directly interact with marine habitats. At the wider 5km assessment scale, no significant impact on marine assets is anticipated. No changes to coastal processes, sediment transport patterns, wave conditions or nearshore hydrodynamics will occur because of the selected approach. Any observed changes within this wider area would therefore be expected to result from natural variability, climate related processes or broader coastal pressures rather than site related activities.

5.2.1.1 Impacts of noise on marine organisms attributed to any piling works

Many organisms rely on sound to defend territory, attract mates, navigate, and maintain social bonds. Noise from major hotel resorts directly affects these organisms' ability to communicate effectively.

No work is proposed in the marine environment. Particularly, the project does not include any piling works.

5.2.1.2 Potential Impacts due to predicted direct and indirect impacts to coastal and near-shore marine assets due to increase human use

Increased human use of coastal areas may result in additional pressure on adjacent coastal and marine assets. Although the approach does not include any coastal works or marine intervention, any recreational use of the beach and nearshore environment may influence the condition of sensitive coastal resources.

Potential impacts associated with increased human interaction may include trampling of dune vegetation, creation of informal access pathways, increased litter generation, disturbance of coastal fauna and accidental physical interaction with shallow marine habitats. Within nearshore areas, increased recreational activity such as swimming, wading, boating or other water-based activities may result in localised disturbance to benthic organisms, particularly within shallow areas where coral, seagrass or other sensitive habitats occur.

The magnitude of these impacts will depend on the intensity and frequency of use, the sensitivity of the receiving habitat and the effectiveness of existing management practices. Areas containing structurally complex habitats, including coral communities, seagrass areas and other biologically active marine environments, are considered more sensitive than predominantly sandy seabed areas. The high presence of sandy seabed areas with minimal fauna indicates limited potential impacts from anthropogenic use.

Within the 500m zone of influence, potential impacts associated with increased human use are expected to be localised and manageable through appropriate environmental awareness, waste management practices, designated access routes and protection of sensitive coastal areas. At the wider 5km assessment scale, impacts associated with increased human use are expected to diminish with increasing distance from the site. Any broader effects would be associated with cumulative recreational pressures throughout the coastal area rather than activities associated with the selected alternative alone.

5.2.1.2.1 Direct Impacts

Direct impacts are defined as effects resulting from physical interaction between activities occurring within the project area and benthic habitats or marine organisms. Under the selected approach, no direct impacts on benthic resources are anticipated. No activities will occur within the marine environment that would result in seabed disturbance, habitat removal, burial, excavation, placement of materials or modification of existing marine structures.

Direct impacts on coastal and marine resources may result from increased pedestrian activity, recreational use of the beach and swimming in the nearshore environment during operations. Potential impacts may include trampling on beach vegetation and disturbance in the nearshore habitats when visitors enter the water.

The proposed boardwalks will help minimize impacts to coastal vegetation as it will minimize the need for visitors to traverse outside the designated access routes. Within the marine environment, the nearshore environment consists primarily of bare sand, with areas consisting of high biodiversity occurring offshore. The only exception to this is the groynes in the nearshore environment which have a hard substrate to support biodiversity. Given the existing recreational use of the beach and nearshore waters, increased recreational activity due to The Project is not anticipated to result in significant disturbance to benthic habitat.

Short term impacts

No short-term direct impacts on benthic habitats are expected because no marine activities will occur that physically interact with the seabed or associated biological communities. Existing benthic habitats, including sandy seabed, coral communities, hard substrate habitats and seagrass areas, will remain unaffected by physical disturbance. Natural short-term fluctuations in benthic conditions, including seasonal changes in habitat use, sediment movement and marine fauna distribution, are expected to continue independently of the selected alternative.

Long term impacts

No long-term direct impacts on benthic resources are anticipated. The absence of coastal intervention means that there will be no permanent loss, modification or conversion of marine habitat associated. Existing ecological functions, including habitat availability, coral growth, seagrass persistence and benthic community development, are expected to continue under prevailing environmental conditions. Potential localised effects could only occur through indirect pathways originating from terrestrial areas, such as uncontrolled runoff, accidental contamination or windblown debris entering adjacent coastal waters. However, these events are considered unlikely where appropriate environmental management practices are maintained.

5.2.1.2.2 Indirect Impacts

Indirect impacts are effects that may occur outside the immediate site area through environmental pathways such as water movement, sediment transport or human interaction. Within the 500 m zone of influence, potential indirect impacts on benthic resources are limited to changes in nearshore environmental conditions that may result from terrestrial activities. These may include increased sediment delivery during rainfall events, reduced water quality associated with pollutants or nutrients, accumulation of marine debris and localised disturbance associated with recreational activity.

Potential indirect impacts to the coastal and near-shore marine environment associated with the increase in human activity include the increase in waste generation, accidental discharge of pollutants, disturbance of wildlife, and decrease in water quality of the nearshore environment.

Short term indirect impacts

Short term indirect impacts may occur following rainfall events, accidental releases or periods of increased human activity. Surface runoff containing sediment, nutrients or contaminants may temporarily reduce water clarity or affect nearshore water quality. Similarly, windblown debris or litter entering coastal waters may result in temporary physical disturbance or degradation of habitat quality. Increased sediment transport from terrestrial sources may temporarily contribute to sediment deposition within nearshore habitats. While predominantly sandy seabed environments are generally capable of accommodating natural sediment movement, sensitive habitats such as coral communities and seagrass areas may be more vulnerable to persistent sediment accumulation or reduced light availability. The likelihood of these impacts occurring is considered low, and any effects are expected to be localised and reversible where appropriate management practices are maintained.

Long term indirect impacts

Long term indirect impacts to benthic habitats within the 500 m assessment area are expected to be negligible. No activities will occur that alter coastal processes, sediment transport patterns, wave conditions or nearshore circulation, and therefore there is limited potential for sustained changes to benthic habitat condition. Potential long-term pressures may arise from cumulative environmental factors, including climate change, increasing recreational use, coastal water quality changes and natural ecosystem variability. These pressures are not considered attributable to the selected approach but should continue to be considered as part of broader coastal management. The significance of potential indirect impacts within the 500m zone is expected to remain negligible to minor due to the absence of direct marine disturbance and the limited pathways through which terrestrial activities may influence benthic habitats.

Indirect Impacts on the Benthic Environment within 5 km of the Project Site

Within the wider 5km assessment area, impacts to benthic resources associated with the selected alternative are expected to be negligible. No activities will occur that alter coastal processes, sediment transport patterns, wave conditions or nearshore circulation. Therefore, there is no mechanism for project related changes to influence benthic habitat distribution or condition at a broader spatial scale.

Short Term Indirect Impacts

Short term effects within the wider 5 km assessment area are considered unlikely. Potential influences such as isolated pollution events, debris movement or changes in water quality would be expected to decrease with increasing distance from the source and would be dependent on specific environmental conditions such as rainfall, currents and wind direction. Where such events occur, impacts are expected to be temporary and localised, with recovery expected through natural processes.

Long Term Indirect Impacts

No long-term indirect impacts on benthic resources within the 5 km assessment area are anticipated because of the selected approach. The absence of coastal enhancement means there will be no project related changes to shoreline stability, sediment transport, hydrodynamic conditions or habitat distribution. Potential wider pressures on marine assets may include cumulative effects associated with regional coastal development, climate change, storm events, recreational use and natural variability in marine conditions. These factors are independent of the selected alternative and are not expected to result in measurable changes attributable to the site.

5.2.2 Potential Impact to coastal environment and processes, a distance equivalent to the zone of influence

The coastal environment surrounding the site forms part of a dynamic system influenced by waves, tides, currents, sediment availability, swell events and hurricanes. Existing shoreline conditions reflect the interaction of these natural processes, with localized areas of beach narrowing and erosion occurring along portions of the wider coastal frontage. As a result of the selected approach, there will be no project related changes to shoreline configuration, wave interaction with the beach, sediment transport pathways, erosion patterns or accretion processes. Potential changes to coastal conditions will therefore continue to be driven by natural coastal processes. These may include seasonal beach profile adjustments, sediment redistribution following energetic swell events, storm related erosion and longer-term changes associated with sea level rise and climate variability.

The offshore reef and shallow platform provide an important natural coastal protection function by attenuating offshore wave energy before it reaches the shoreline. However, energetic swell events and hurricanes may still generate increased nearshore circulation, sediment movement and wave runup, resulting in temporary changes to beach morphology and shoreline condition.

Short term impacts

No short-term impacts on coastal processes attributable to the selected alternative are anticipated. Existing patterns of sediment movement, erosion and accretion will continue without alteration because no activities will occur that modify shoreline geometry, interrupt sediment pathways or influence natural wave conditions. Short term coastal changes may continue to occur following storm events, hurricanes or energetic swell conditions. These may include temporary shoreline recession, beach narrowing, sediment redistribution and changes in nearshore morphology. Such changes represent natural responses of the coastal system and are not considered impacts associated with the selected alternative. Potential indirect effects from surrounding terrestrial activities, such as sediment runoff, debris movement or localised changes in water quality, are expected to have negligible influence on wider coastal processes due to their limited magnitude and spatial extent.

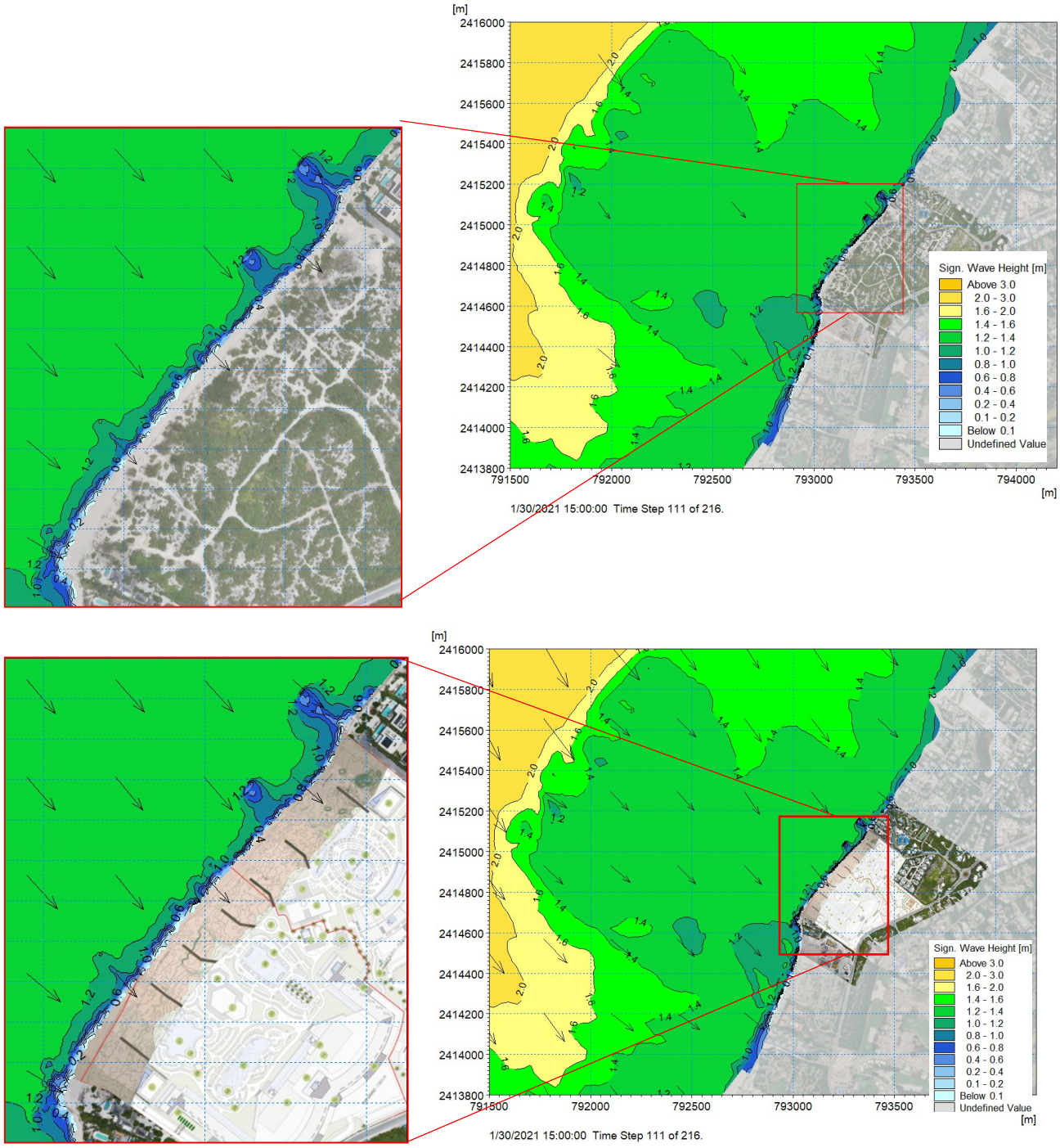


Figure 65 – Swell waves at the peak of the Feb 2021 swell event under existing (top) and proposed (bottom).

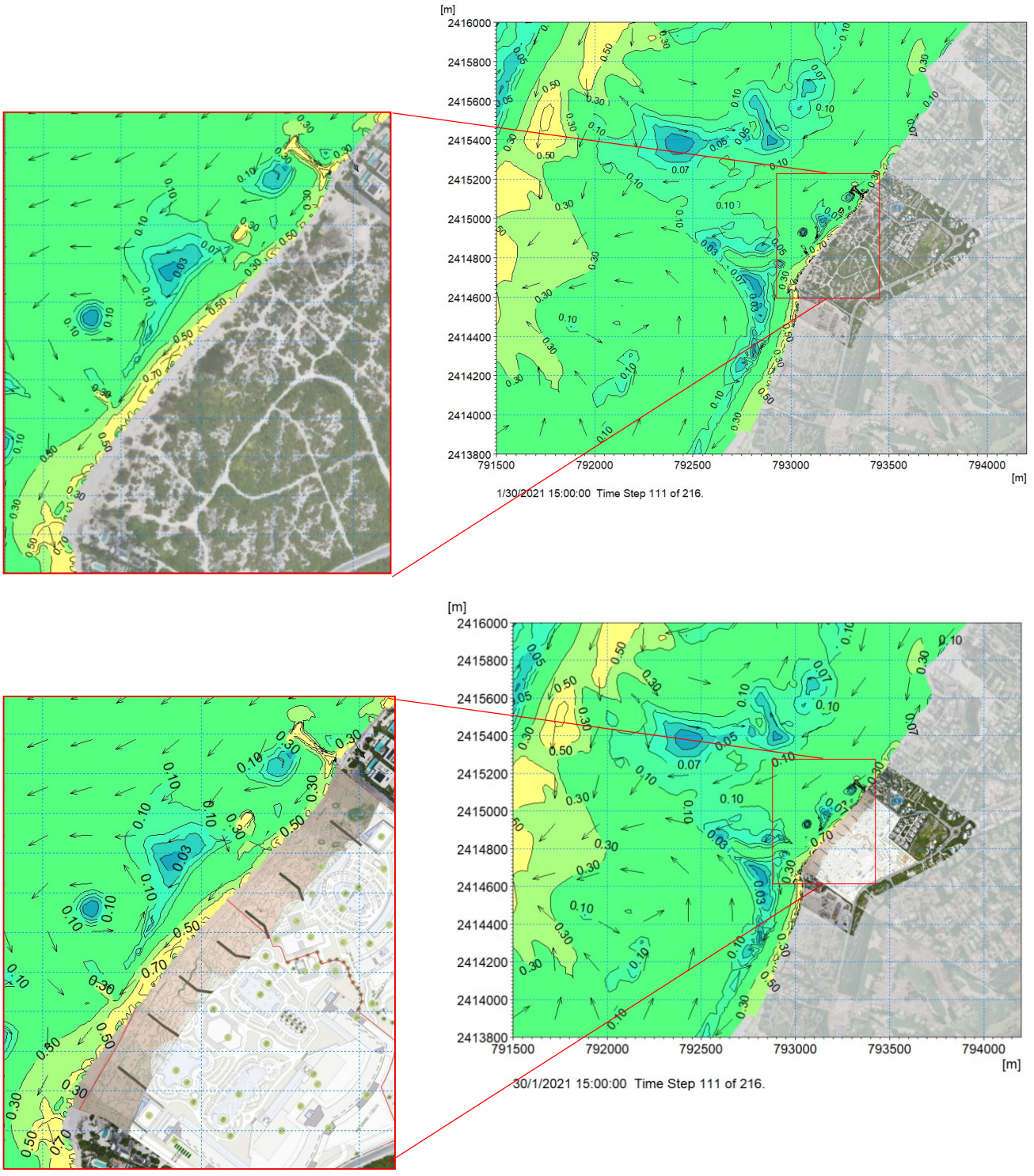


Figure 66 – Swell currents at the peak of the Feb 2021 swell event under existing (top) and proposed (bottom).

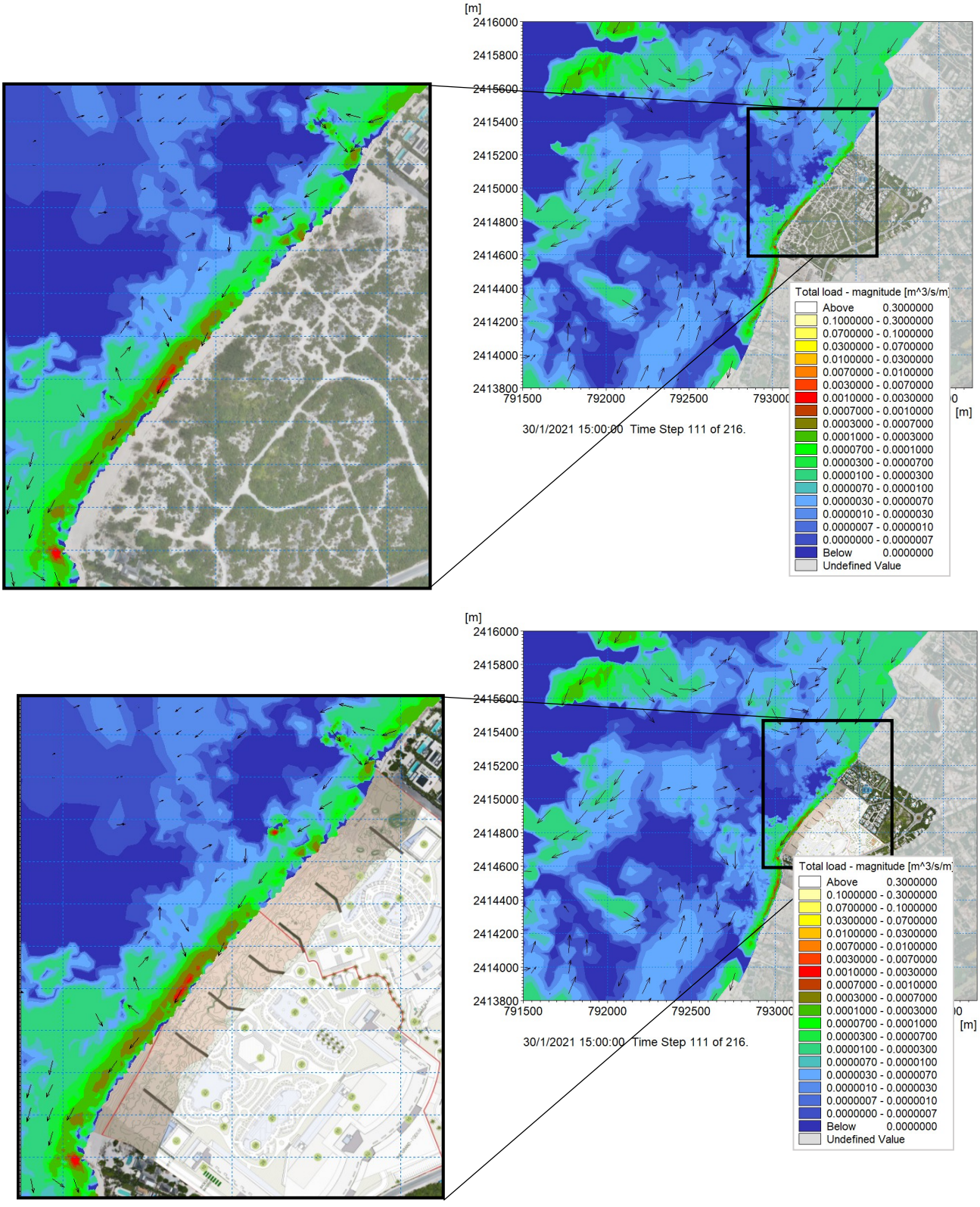


Figure 67 – Total load transport result at the peak of the swell simulation with simplified vectors showing the direction of transport under existing (top) and proposed (bottom) conditions.

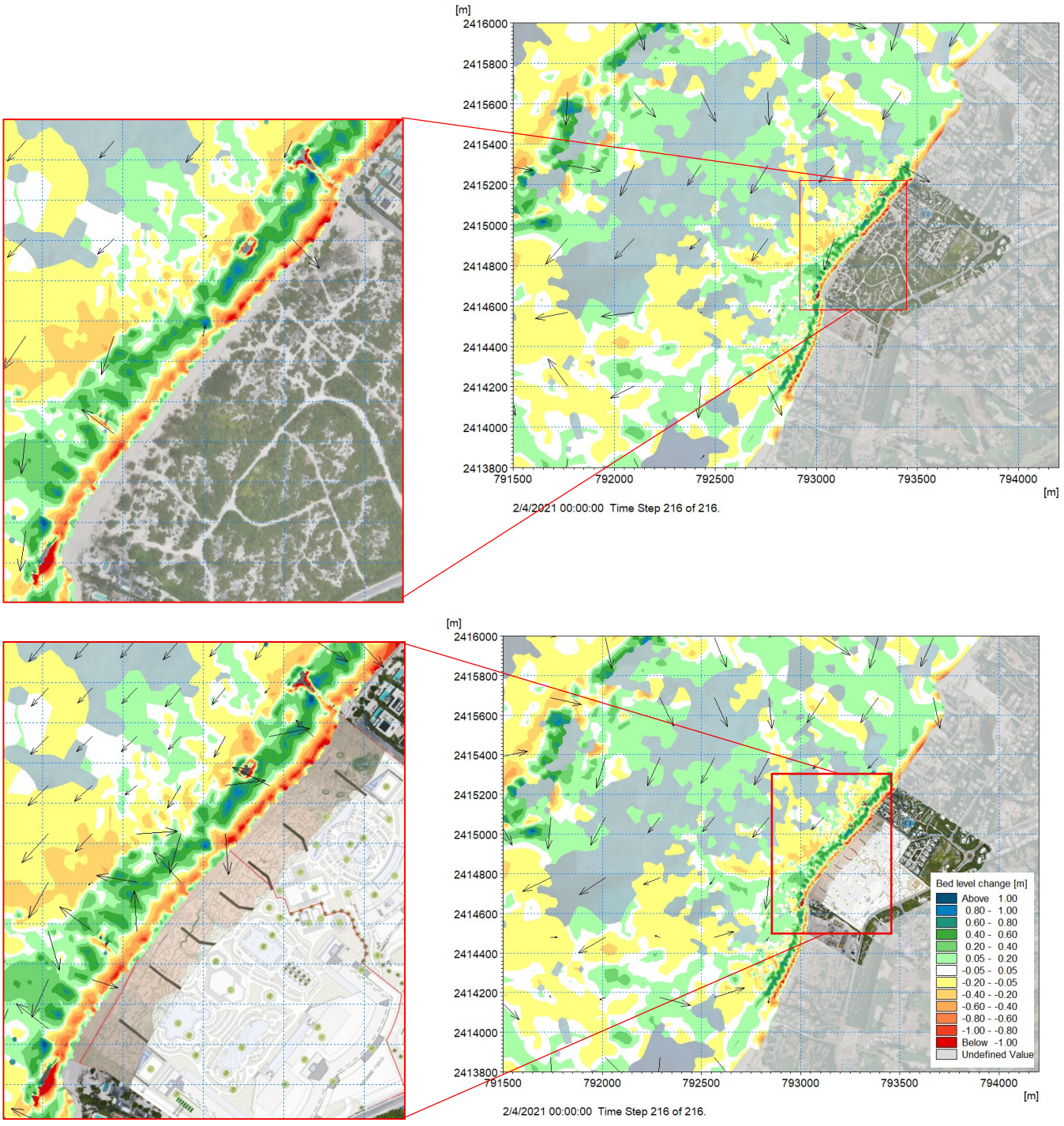


Figure 68 – Sediment transport result showing the change in bed level at the end of the swell simulation with simplified vectors showing the direction of transport under existing (top) and proposed (bottom) conditions.

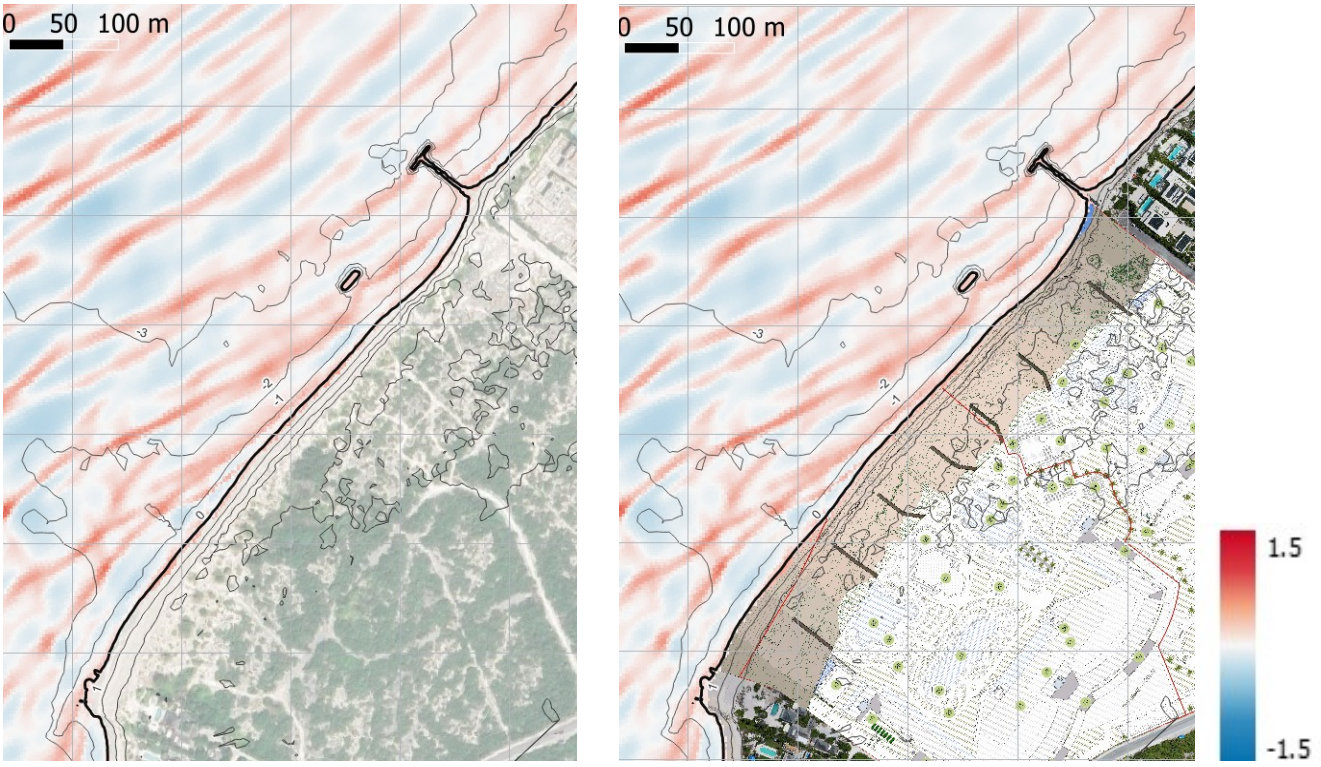


Figure 69 – XBeach 2D results for the selected swell event showing the modelled water-level field under existing (left) and proposed (right) conditions across the Palace Resorts frontage

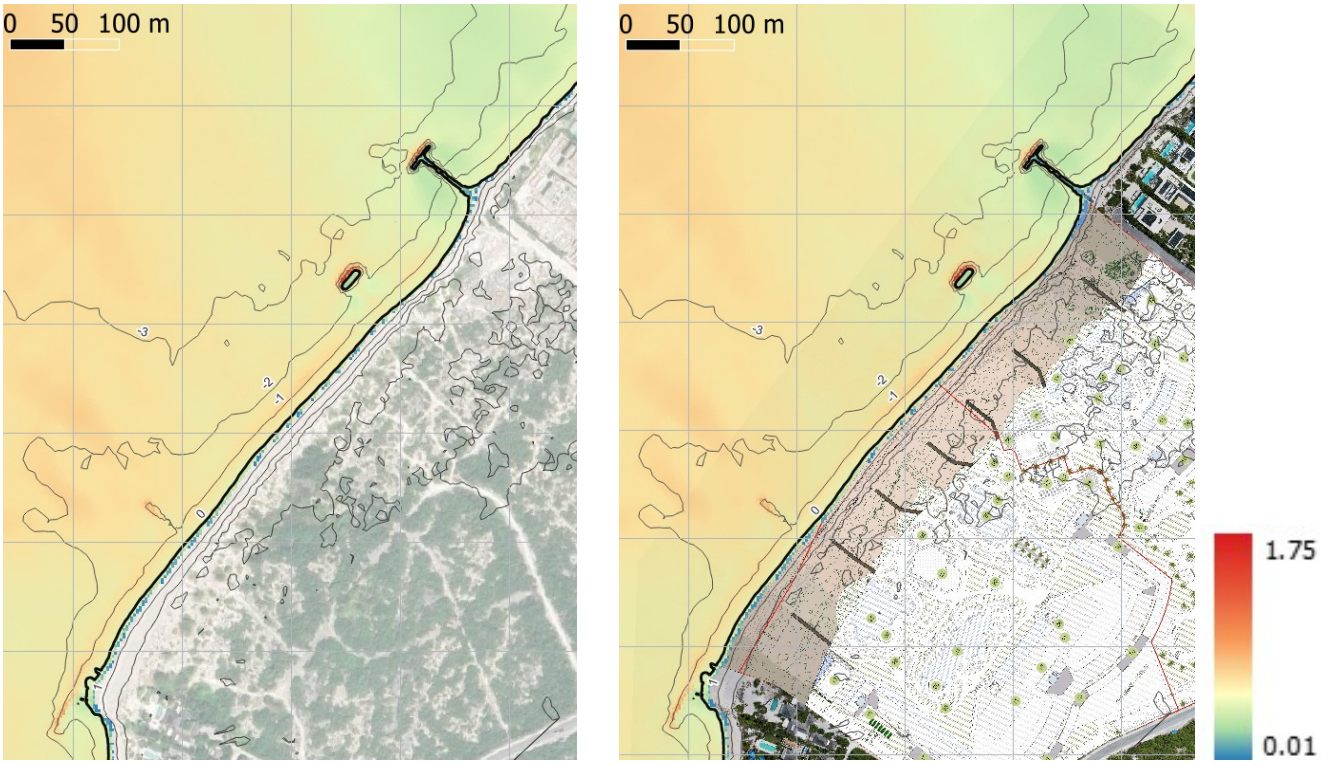


Figure 70 – XBeach 2D results for the selected swell event showing the modelled wave height field under existing (left) and proposed (right) conditions across the Palace Resorts frontage.

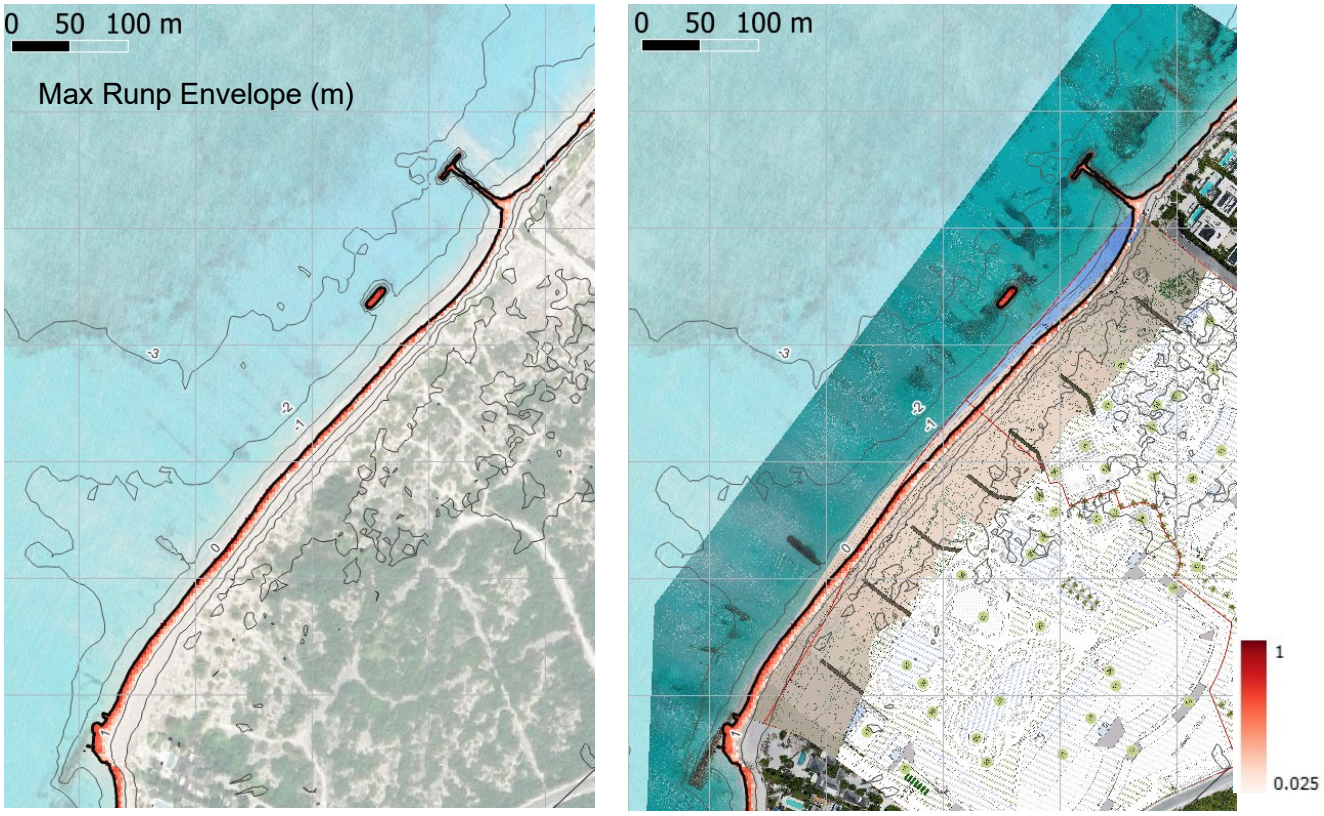


Figure 71 – XBeach 2D results for the selected swell event showing wave runup envelope under existing (left) and proposed (right) conditions across the Palace Resorts frontage.

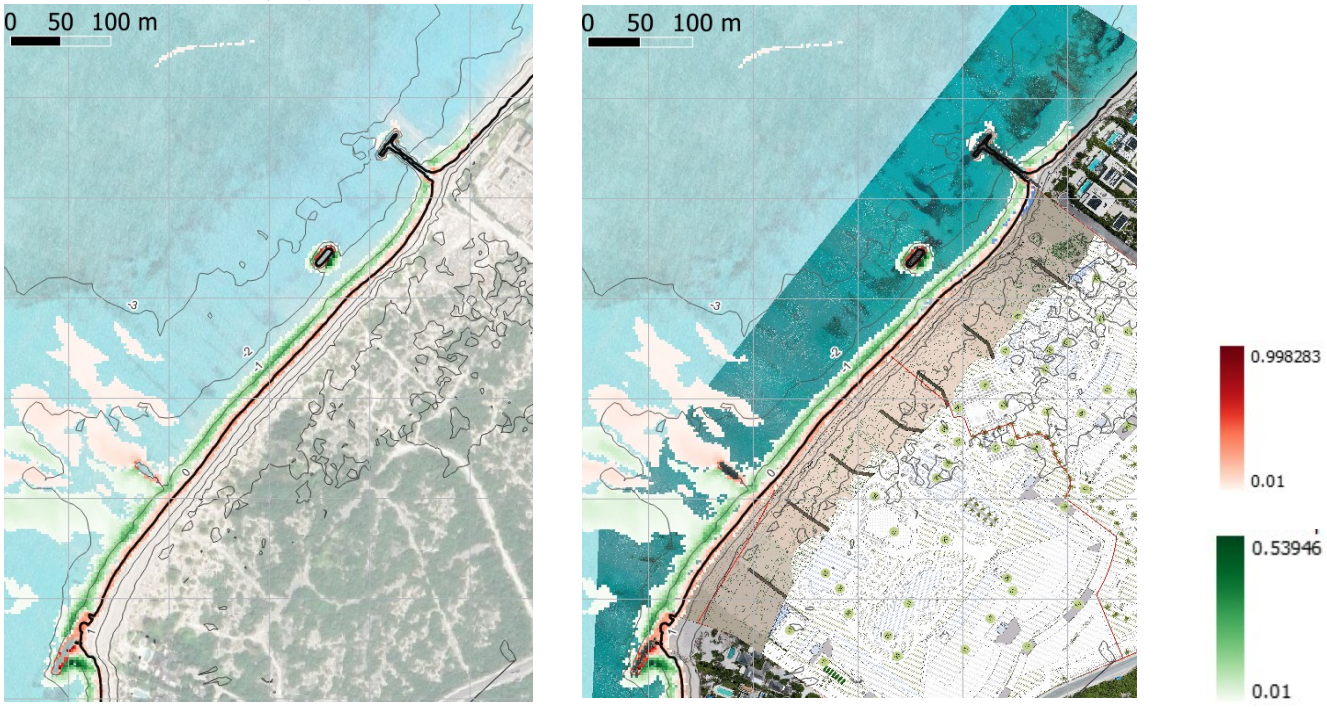


Figure 72 – XBeach 2D results for the selected swell event showing erosion/accretion under existing (left) and proposed (right) conditions across the Palace Resorts frontage.

5.2.2.1 Potential Impact on beach dynamics

No activities will occur that modify shoreline configuration, interrupt sediment pathways or alter existing coastal processes. Therefore, no project related changes to sediment transport, erosion or accretion patterns are anticipated. The offshore reef and shallow platform provide natural attenuation of wave energy; however, energetic swell events and hurricanes may continue to generate increased nearshore circulation, sediment movement and temporary changes in beach morphology. Natural variations in sediment deposition, erosion or scour may also influence adjacent marine habitats, including coral, hardbottom and seagrass areas. However, these processes will continue independently of the site and no additional mechanism for altering coastal processes will be introduced.

5.2.2.2 Potential Impact to the Dune Ecosystem and other coastal habitats

Sand dunes form an important component of the coastal environment by storing sediment, providing a buffer between the active beach and inland areas, supporting vegetation and providing habitat for coastal fauna. The master plan includes areas of landscaping. The landscaping activities should be done with native species that are both drought and salt resistant.

The construction of the boardwalk across the dune ecosystem has the potential to impact the dune's biotic environment. Direct impacts include the localized vegetation removal, trampling of vegetation, and disturbance to organisms.

The primary impact on the dune biotic ecosystem is associated with the removal of existing vegetation directly within the footprint of the boardwalks. In removing this vegetation, habitat utilized by insects, birds and other coastal organisms is lost. While this habitat loss is localized it can result in displacement of organisms. Also, during construction of the boardwalk, vegetation directly of the inside boardwalk's footprint of works may be trampled by workers and equipment during construction. This can further cause habitat loss and impact wildlife utilizing the area.

To limit impact, vegetation clearing will be limited to the direct footprint of works for the boardwalks. The boardwalks support structures are not expected to greatly impact dune vegetation as the vegetation is sparse. Where vegetation is temporarily disturbed, restoration using native species should be undertaken (see Appendix E: Landscape Restoration Plan). Long-term, once restoration is completed, dune vegetation is expected to revegetate the area and any fauna displaced during work is expected to be returned.

In addition to this, silt curtains should be installed along the coast while clearing vegetation for the boardwalks and construction of the boardwalk to prevent any loose sediment from entering the nearshore marine environment.

5.2.2.3 Potential Impacts on Valuable Ecosystems Within the Zone of Influence

Terrestrial Ecosystem

There was no valuable terrestrial ecosystem within the footprint of works. All species observed were common within the Lucayan Archipelago.

Coastal Ecosystem

The dune ecosystem is located within the zone of influence. See Section 5.2.2.2 for impacts to the dune vegetation and wildlife.

No works are scheduled for the beach (excluding the dune ecosystem); therefore, the beach is not within the zone of influence.

Marine ecosystem

There are no coral reefs or seagrass ecosystem within the nearshore environment. Seagrass habitats were observed in the offshore habitat. There are no works scheduled for the marine environment, therefore there are no potential impacts within the zone of influence.

5.2.2.4 Potential impacts of climate change, including rising sea levels and increased storm intensity

Climate change represents a long-term consideration for the condition and resilience of coastal and marine assets within the assessment area. Sea level rise, increasing storm intensity and changing wave conditions may contribute to increased coastal inundation, shoreline adjustment, erosion and changes in sediment distribution. No marine activities are anticipated to alter existing coastal processes or increase the vulnerability of coastal assets.

The coastal assessment identifies hurricane storm surge combined with wave action as a critical coastal loading condition. Under the assessed 50-year hurricane condition, modelled wave runup reached approximately 2.9 MSL along the project shoreline, demonstrating the potential influence of extreme events on nearshore conditions and coastal exposure. The offshore reef and shallow platform provide an important natural function by attenuating offshore wave energy before it reaches the shoreline. However, energetic swell events and hurricanes may still generate temporary changes in beach morphology.

Potential long term climate related effects include increased erosion, shoreline migration, sediment redistribution and additional pressure on dune and nearshore habitats. These changes represent broader coastal processes that may influence the condition of coastal and marine assets over time.

5.2.3 Potential Impact of Added Lighting

Impacts caused by the increase in light can possibly occur during construction and post construction activities. The need for artificial light during post construction may only extend toward erection of tower lights to aid in securing the site at night and illuminating pathways.

Due to The Project's proximity to a beach, marine fauna has been considered in this analysis. Many marine faunas rely on the natural light cycles of the moon and stars to drive and regulate important physiological and behavioral processes such as spawning (for corals), daily migration (for zooplankton) or nesting (for sea turtle hatchlings). Although corals are located within the nearshore environment, artificial light is not anticipated to reach the marine ecosystem. As there was no turtle nesting activity observed on The Project site, the use of artificial lighting is not anticipated to impact sea turtles.

Terrestrial fauna also can be affected by an increase in lights, as nocturnal species (such as Antillean Nighthawk) can become disorientated. There also is a risk of collision with machinery, as birds can be blinded by glare or lured towards operating equipment.

However, The Project currently has a sandy shoreline and is considered to have high amount of anthropogenic activity during the early mornings, midday and evenings. Therefore, impacts to both terrestrial and marine biota due to light impact during pre-construction and active construction activities are not anticipated to be significant. Light impacts are anticipated to be short term to long term (depending on operational need) however they're anticipated to be low.

5.2.4 Potential Impacts on any species identified as Endemic, Near Endemic, Rare, Threatened, or Endangered Species.

5.2.4.1 Terrestrial Species

There was no endemic, near endemic, rare, threatened, or endangered terrestrial or avian species observed during the assessment.

5.2.4.2 Marine Species

There was no endemic, near endemic, rare, threatened, or endangered fish, marine mammal, or marine reptile species observed during the assessment. Queen Conch (*Aliger gigas*) was the only marine non-coral invertebrate species observed that is listed on the IUCN list (listed as near threatened); however, this species was observed within the seagrass habitat offshore and will not be impacted by any construction works or by increased recreational activity during operations.

Corals

Coral species observed are listed on both the IUCN and CITES list. Increase sedimentation due to visitors swimming and wading in the nearshore environment can potentially impact corals located on the groynes, particularly the groyne on the south-western side of the nearshore environment. Increasing sedimentation can block sunlight to corals, impacting their ability to photosynthesis as well as can cover individual corals smothering them. This impact is expected to be low and localized as baseline turbidity levels were low (less than 15 NTU) despite recreational use. Therefore, it's anticipated that the impacts to corals will be due to swimming or wading by visitors will be negligible.

Increasing recreational use of the beach can result in an increase if sunscreen by beachgoers. Some ingredients within sunscreen can impact marine organisms such as corals, particularly in areas where water exchange is limited. Ingredients such as Oxybenzone (Benzophenone-3), Octinoxate, Octocrylene, and Ethylhexyl Salicylate can trigger coral bleaching, damage coral DNA, and disrupt overall growth and reproduction (NOAA, 2024). Given the open coastal setting and regular water exchange, sunscreen-related impacts are not anticipated to significantly impact corals. Furthermore, the beach is already a well-established tourist destination and is subject to consistent recreational use with associated sunscreen use. Increase visitation in the world only results in marginal increases of sunscreen contamination of the nearshore environment. As corals within the nearshore environment appear healthy, with no signs of diseases or recent mortality observed, impacts are anticipated to be localized and low in significance.

Coral species located on the two most northern groynes were small (less than ten centimetres (10 cm.)) and encrusting. Larger corals (more than ten centimetres (10 cm)) were observed in the south-western groyne. Corals in Southwestern groyne had a mixture of bouldering and encrusting morphologies. As stated in the baseline, corals were in good condition with no recent mortality and signs of diseases, therefore, coral

relocation is not recommended. Relocating these colonies would subject them to unnecessary handling stress, tissue damage, and the risk of post-relocation mortality, potentially resulting in greater ecological harm than leaving them in situ.

5.2.5 Potential Impact to Any Species Due to Building Height and Architecture

The height of resort buildings can affect terrestrial and avian species by altering the existing habitat structure and creating new vertical structures within the landscape. Tall buildings may increase the potential for bird collisions when buildings are within the flight path of species.

Potential impacts associated with the Project's building height and architecture are expected to be minimal, as the surrounding area is already characterized by high-rise developments. Avian species are considered the most potentially vulnerable; however, the species that frequent the area are accustomed to the existing urban environment and high-rise structures. Therefore, the development of similar scale and architectural character is expected to have little to no additional impact on avian species or other wildlife.

5.2.6 Potential impact to geological environment

The proposed development may result in localized disturbances to the geological environment through vegetation clearing, excavation, grading soil compaction and introduction to impervious surfaces.

Potential impact on the geological environment will be limited to surface level cut and fill processes in relation to substructure developments.

Karst's geological features do not exist within the subject geological environment. The general area is low lying, low relief sandy flat lands. Ironshore features are non-existent.

The existing primary dune ridge is highly susceptible to erosion during the winter months when the prevailing wind and wave actions are from the northwest.

5.2.7 Potential Impacts to The Aesthetic and Other Built Environment

The proposed development satisfies all planning and building standards provided within the Turks and Caicos Islands Development Manual and Building Code as they relate to density, height of buildings, building setback distances, site coverage, and other regulatory as it relates to aesthetics. The development is also in conformity with the

National Physical Development Plan 2020 as it relates to Land Use Zoning and Density requirements.

The style of architecture respects the islands' colonial architectural heritage and has incorporated elements of design to complement the surrounding high-end surrounding area.

The resort development will alter the existing visual characteristic of The Project site through the introduction of buildings, roadways, parking areas, lighting and other infrastructure. Building height, massing, colour, materials, and overall architectural design may influence the degree to which the development is visually appealing. The vertical building of the resort can also alter existing views of the coastline and natural environment.

Potential impacts on the aesthetic and built environment are expected to be low as the Project is not expected to significantly alter the existing character of the surrounding area. Incorporating appropriate architectural design and landscape plans that prioritize native vegetation is recommended to enhance the visual character of the site while creating a native flora corridor that can provide habitat and connectivity for avian species. Upon completion of the development and implementation of the landscaping plan, the overall aesthetic quality of The Project site is expected to improve.

5.2.8 Potential impacts from sunlight patterns including shadow-casting

Construction of The Project can alter existing sunlight patterns affecting the amount of light reaching terrestrial environments within The Project site and in the surrounding areas. Changes in light availability can impact plant growth and vegetation composition.

Potential impacts on sunlight patterns, including shadow-casting, are expected to be localized and primarily associated with the proposed building structures. Given the highly developed nature of the surrounding area and the presence of existing high-rise structures, changes to sunlight and shadow patterns are not expected to significantly alter the broader environment. Any impact that may occur will be low. However, the final building height, orientation, and design should be considered to minimize excessive shading of adjacent properties, vegetation, and other areas of environmental of aesthetic importance.

5.2.9 Water Quality during (Construction and Operation)

Groundwater quality will be susceptible to point source pollution during the construction and operation phases:

- Operation of bulk fuel storage (Standby power generators)
- Operation of sewerage disposal facility (Mechanical Systems)
- Landscape plans – nutrient loading from use of fertilizers

Noise pollution will be a factor during the construction phase of development:

- Use of heavy plants and equipment
- Loud talking – construction workers

5.2.10 Noise pollution (Construction and operation)

During Construction

During construction phase of the Moon Palace Resort development planned for Grace Bay, Providenciales noise pollution would like to cause some disruption and localized noise impacts on the surrounding areas. Noise will be generated during heavy equipment operations during excavations, land clearing and construction. These operations can easily push noise levels beyond the site boundaries to the maximum 70 dB (A) to 85 dB (A) standard as outlined by International Finance Corporation (IFC) environmental guidelines.

Sound waves travel easily across open water and flat beachfront terrain, therefore, neighboring communities on the eastern end of Grace Bay beach will experience intermittent high-decibel noise, particularly during drilling, hammering and heavy transport trucks.

To mitigate against anticipated high noise levels the developers would be required to limit high noise activities to daylight hours, construct sound barriers. The Contractors should be required to use modern, well-maintained machinery fitted with high-grade industrial silencers and mufflers. Where possible, quieter technologies should be substituted, for example, electric-powered equipment instead of diesel generators, and hydraulic pressed-in techniques rather than impact pile driving.

During the construction phase the project management will focus on controlling noise at the source and minimizing it from spreading to adjacent properties. Mitigation measures like constructing 3- to 4-meter-high solid temporary acoustic hoarding along the project's landward and side boundaries.

During Operations

During the operational phase of the hotel facility the noise profile shifts from mechanical disruption to human activity, hospitality logistics, and high-occupancy crowds. A resort hotel facility the size of the Moon Palace Grand and Le Blanc bring significant ambient noise levels. This increased noise level comes from large crows at multiple expansive pool decks, swim-up bars, and family orientated water parks.

Another source of noise can come from mechanical and utility equipment, including large-scale HVAC chillers, backup diesel generators, cooling towers and commercial laundry facilities. To mitigate noise levels, these mechanical infrastructures can be enclosed with purpose-built, sound-insulated concrete structures.

5.2.11 Ecosystem and Economic Analyses

The ecosystem and economic analysis look at the ecological service of ecosystem present on The Project site, who benefits from them, how important they are and how the proposed development could affect their value. A qualitative valuation approach was used to determine ecosystem value rather than assigning monetary value to the habitats. Valuation considered the following:

- ***Provisioning service***: Tangible resources provided by ecosystem such as coastal, fisheries and marine resources.
- ***Ecosystem Support Service***: This will include things like shoreline stabilization, sediment retention, carbon sequestration and habitat provision.
- ***Cultural Services***: what is important for resort development. This may include scenic beauty, access to recreational activities, beach use etc.
- ***Biodiversity value***: This represents the value of maintaining habitat and species. This is important due to the proximity of the PANP.

5.2.11.1 Ecosystem Analysis

The coastal and marine environment provides important ecosystem services, including habitat provision, biodiversity support, coastal protection, recreational value and

contribution to the wider tourism economy. These services are supported by existing coastal features such as beaches, dunes, nearshore habitats, coral communities and associated marine ecosystems.

The assessment indicates that no direct alteration of these environmental assets will occur, and no measurable changes to ecosystem functions are anticipated. Potential pressures on coastal and marine resources are limited to broader environmental factors such as climate change. Given the absence of direct impacts or measurable changes to ecosystem services, a detailed monetary valuation of ecosystem services is not considered necessary. The focus should instead remain on maintaining existing coastal and marine conditions through appropriate environmental management and continued observation of sensitive coastal assets.

Terrestrial Ecosystem

The terrestrial environment within the project area consists primarily of a coastal dry broadleaf evergreen formation with patches of human altered environment in the form of pathways and clearings. While there are portions of the surveyed area with intact natural vegetation, the existing natural vegetation has reduced habitat continuity in areas. Consequently, ecosystem value is not uniform across the entire site, with area containing intact coastal dry broadleaf evergreen formation having a greater ecosystem value than the altered areas.

The intact portions provide ecosystem services including a habitat for wildlife, soil stabilization, carbon storage, nutrient cycling and landscape connectivity. The vegetation also provides the visual quality of the area indirectly contributing to the recreational and tourism value. Land clearing will result in the direct permanent loss of terrestrial habitat with that area to be replaced with buildings, roads, and other development infrastructure.

While less diversity and ecosystem services are within the human altered environments, these disturbed areas nevertheless provide habitat for generalist species.

Although the beach is already being used for recreational activity, it continues to provide ecological function as a habitat for coastal fauna and flora. Costal vegetation would also help to stabilize the dunes which provide protection against wave every storm surge. Use of the beach can result in disturbance to the costal environment through pedestrian activity. The creation of the boardwalks will help preserve the ecosystem and help preserve ecosystem function by directing pedestrian activity to select areas and reducing trampling of vegetation.

Marine Ecosystem

The nearshore marine ecosystem is predominantly composed of bare sand with patches of hard bottom, and sandy bottom with macroalgae and rubble. As a result, the nearshore environment generally has low habitat complexity.

Indirectly the beach and nearshore marine environment provide high recreational and tourism value. The sandy shoreline and the coastal water support swimming, sunbathing, walking, swimming, snorkelling, paddle sports, and other water-based activities that attract guests not only to the resort (The Project) but also the country. As the property will have direct access to PANP, this will further attract ecotourists looking to explore the coral reefs or take part in the many water sport activities offered such as kayaking or paddle boarding.

The offshore environment has greater ecological values and sensitivity, particularly the seagrass areas and the hardbottom habitats that contain large corals and a high diversity of fish and invertebrate species. These habitats are nursery sites, act as carbon storage, and biodiversity hotspots. This area will remain intact providing full ecosystem services as there are no marine works and the area will not be utilized by recreational beachgoers.

See Table 32 below for a summary of the ecosystem analysis.

Table 32 – Ecosystem Analysis and Valuation

Ecosystem	Existing condition	Key Ecosystem Function and Services	Relative Ecosystem Value	Potential Development Impacts
Coastal Broadleaf Evergreen Formation	Natural vegetation consists of protected and invasive species. Fragmented by paths and clearing.	• Provide wildlife habitat. • Carbon storage. • Landscape connectivity.	Moderate	• Land clearing • Wildlife impacts
Pathways and cleared patches	Human altered environment that has low biodiversity and is fragmented.	• Limited ecosystem function • Can provide habitat for generalist species	Low	• Disturbance to species utilizing the area.
Coastal Vegetation	Sparse dunes species native to the country.	• Provide habitat for dune species. • Trap sand, and stabilized sediment on the dune. • Vegetation helps to preserve dunes to protect against storm surge and wave energy. • Aesthetics.	High	• Vegetation trampling • Removal of vegetation within the direct footprint of works. • Habitat fragmentation. • Wildlife impacts.
Beach Ecosystem	Sandy shoreline used for recreational activity.	• Recreation by locals and visitors. • Aesthetic value. • Cultural value.	High	• Increased pedestrian use. • Lighting.
Nearshore Environment (inclusive of Groynes)	Bare sand with patches of hard bottom, and sandy bottom with macroalage and rubble.	• Support benthic communities. • Recreational use • Artificial habitat for localized biodiversity.	Moderate	• Increased recreational use. • Impacts to wildlife.
Offshore	Hard-bottom and seagrass habitat	• Support benthic communities.	High	• No impacts

Ecosystem	Existing condition	Key Ecosystem Function and Services	Relative Ecosystem Value	Potential Development Impacts
		• Recreational use • Artificial habitat for localized biodiversity		
	Seagrass.	• Support benthic communities. • Recreational use • Nursery function • Carbon sequestration • Water quality regulation	High	• No impacts.

5.2.11.2 Economic Analysis

Using AI technology to analyses the best use, valuation, and possibilities, it recognized that the project guarantees unprecedented macro-fiscal returns for TCIG and its citizens but also points to irreversible ecological degradation. It also evaluates whether high-density mega-resort development represents the "highest and best use" of a hyper-sensitive coastal zone compared to alternative lower-impact models.

The eastern end of Grace Bay is already facing a severe shoreline crisis. Nearby resort projects have proposed building rock groynes to trap disappearing sand. Coastal geologists warn that groynes cause downstream sand starvation, meaning massive structural interventions here will rapidly erode adjacent public beaches. Moon Palace itself will require groynes to stabilize its beach. The question can be asked whether the island will lose “the goose that lays the golden egg” (Grace Bay Beach).

But an overriding factor in all the assessment is that the proposed Moon Palace Resort and Le Blanc Spa Resort twin mega-development by The Palace Company represents a historic $1.2 billion private investment—the single largest in the history of the Turks and Caicos Islands (TCI). Spanning a 44.5-acres parcel on the eastern end of Providenciales where Grace Bay meets the Leeward community, the combined project features a total footprint of roughly 1,027 keys (split between the family-oriented 796-room Moon Palace the Grand and the adults-only 235-room Le Blanc).

Given that this $1.2B development agreement is legally executed, the practical **best use** requires executing the 976-room program strictly bound to rigorous environmental and planning safeguards.

5.2.12 Socio-economic Impact

These areas of impact, positive and negative have been addressed elsewhere in the statement, but to summarize the key areas of predicted positive impacts would be as follows:

Job Creation: Generates hundreds of direct employment opportunities for TCI Islanders during both the construction phase and long-term hotel operations.

Economic Diversification: Stimulates secondary markets by expanding the supply chain for local entrepreneurs, restaurants, nightclubs, tiki bars, agricultural producers, boat tour operators, VIP limousines, and taxi drivers. The “farm-to-table” concept is becoming very popular in tourism and locally The Providenciales Farmer’s Market and

other community agriculture groups are setting themselves up to satisfy the demand. The applicant intends to source locally grown produce.

Revenue Generation: Boosts government funds through import duties, work permit fees, National Health Insurance Board (NHIP) fees, National Insurance Board (NIB), accommodation tax, service charges, Payment of government fees (vehicle licensing, etc.)., etc.

Global Positioning: Solidifies TCI's status as a premium luxury destination on the global travel map, attracting high-spending international visitors.

Predicted Negative Impacts

- The local TCI labor pool cannot support the thousands of operational roles required by a 976-bedrooms resort. Massive reliance on imported work-permit holders shifts the tax burden onto public services, as the government must expand schools and healthcare infrastructure to support the population influx.
- The need for housing (Providenciales already suffer from a shortage of affordable housing. Housing hundreds of imported construction and resort workers would severely worsen the local housing market).

- Waste Generation (The generation of massive tons of physical debris, concrete runoff, and packaging materials will create a strain on landfill sites).

- Massive on-site dining, retail, and entertainment options keep guests spending inside the resort enclave. This reduces the foot traffic and revenue flowing to independent local restaurants, boutique shops, and local tour operators.

- Increased strain on the electrical grid and water supplies forces utility companies to invest heavily in capacity upgrades. These capital expenditures are often passed down to local residents and existing small businesses in the form of higher utility rates.

- A massive, single-property asset makes the TCI economy highly sensitive to the financial health of one corporate brand. If the resort operator faces bankruptcy, a management crisis, or pulls out of the market, the sudden drop in visitor arrivals would trigger severe, widespread economic shockwaves across the island.

- This will further exacerbate the disparity between Providenciales and the remaining lesser developed islands, in particular Grand Turk, the capital.

Involvement of Stakeholder Groups

a. Enforcement of the Employment Ordinance, which is the main statute for the administration and operation of employment services and labour within the Turks and Caicos Islands.

b. Employment Services Department works closely in conjunction with the Immigration and Customs Ordinances to track and ensure compliance with work permit conditions.

   - Enforce requirements relating to:
   - Contracts.
   - Minimum Wage.
   - Termination.
   - Disciplinary Procedures; and.
   - Safety at Work.
   - Etc.

c. Strengthen the Labour Tribunal which is primarily to deal with mediation of employment cases or disputes, for example those relating to sexual harassment, safety at work, remuneration disputes, termination, etc.

d. Strictly enforce the Employment Ordinance requirements relating to companies employing greater than 15 employees being required to produce a Staff Plan for the office of the Director of Employment Services.

e. Currently there are no regulations which mandate a minimum percentage of employees to be "Belongers" or TCI Citizens. The only requirement is that the specific job be advertised with the job description and specifying salary, etc. The application must be submitted to the Work Permit Board. Advantageous for TCI Citizens is that when they are application for any of the advertised jobs, they must also send a copy of their application to be Work Permit Board. This allows the Board to ensure that any qualified citizen applying for that job has the first opportunity or that any expatriate applicant is assessed against the availability and qualifications of citizen. This must be formalized and strictly enforced.

f. The Premier alluded to the borrowing of US$350 million for modernization of the country's infrastructure, including the Providenciales Seaport, Howard Hamilton International Airport on Providenciales, and roads.

g. Citizens being able to sustain themselves.

h. The use of AI technology in crime solving.

i. A more intentional stakeholder collaboration with TCIG and the private Secor.

j. Greater funding.

k. Supporting local businesses.

5.2.12.1 Public Beach Access

It would be advantageous for the proponents of the development to commit at their expense to developing the nearby public beach access in consultation with the DECR for the benefit of the public. This will include hard surfacing, asphalt surfaced parking, construction of a boardwalk to prevent the trampling of sand dunes, revegetation and landscaping, lighting, and facilities for solid waste disposal, and toilet facilities. They will be carried out in consultation with the Department of Environment and Coastal Resources (DECR) and the Department of Planning.

5.2.12.2 Potential socio-economic and carrying capacity impact to the beach

Grace Bay Beach is globally celebrated for its low-density, tranquil aesthetic. Whilst areas along Grace Bay Beach, particularly those beach areas in front of existing major hotel resorts, are densely populated and near it carrying capacity. The beach survey for this project showed that the beach front at the site of the proposed development was not densely populated and beach goers expressed little concern over the impact of the proposed development on beach goers.

However, the proposed Moon Palace resort development would introduce thousand of additional guest daily to this concentrated beachfront area, thus adding to the beach carrying capacity. Increased foot traffic and installation of beach amenities threaten the fragile sand dunes. However, as a mitigation measure some eight (8) boardwalks will be constructed over the sand dune system to reduce foot-traffic over the dune system.

5.2.12.2.1 Neighbouring property values

The Moon Palace resort hotel development on Grace Bay Beach, Providenciales, Turks and Caicos Islands will have tremendous impact on neighboring property values. Real estate dynamics on Providenciales indicate that this mega-development will drive property values upward. There will be tremendous private and public sector investments in infrastructure upgrades, including utilities, road expansions and public works. These baseline improvements enhance the broad desirability and accessibility of nearby parcels.

Present land values on Providenciales are extremely high, placing it out of the reach of the Belonger population. The Moon Palace mega development will cause additional spikes in the value of surrounding properties.

5.2.12.2.2 Visitor use perception

The beach survey of both local and foreign beach users revealed that visitors use perception of the beach to the immediate front of the Moon Palace property was mixed. Some respondents view the mega proposed twin-resort hotel as a direct threat to the fragile ecosystem and natural environment, while others said that the beach has the capacity to handle increased foot traffic without causing too much negative impact on the beach ecosystem.

Some local beach venders have expressed concerns that most of the high-paid management and middle-management jobs will go to expatriate workers and that only minimal jobs will be reserved for locals.

5.2. 12.2.3 Coastal stability (natural capital)

The mega-resort Moon Palace development presents substantial implications for the coastal stability and natural capital of Grace Bay Beach. The new development will significantly increase human density on the beach. High foot traffic would add additional pressure to the beach. The economic value of Grace Bay relies heavily on its pristine marine ecosystem, which faces severe pressure from coastal developments.

The Palace Company has publicly emphasized its long-term vision for sustainable tourism growth, pointing to a history of implementing all-in-house coastal management systems, marine turtle conservation camps, and extensive nature reserves at its flagship Mexican properties. This EIA report recommends that the developers implement similar environmental initiatives in the Turks and Caicos Islands. Such initiatives will maintain the beauty of nature on the Islands.

5.2.12.3 Potential impacts on Island-wide traffic patterns

A traffic impact analysis was undertaken for the Moon Palace Resort Development. The analysis is divided into two parts. The first part addresses the traffic impacts on Leeward Highway and on Grace Bay Road as a result of the proposed resort development project. The second part includes level-of-service analyses for the main access driveway on Grace Bay Road.

5.2.12.3.1 Impacts on Leeward Highway and Grace Bay Road

Roadway segment analyses were undertaken for Leeward Highway and Grace Bay Road using Generalized Service Volume Tables developed by the Florida Department of Transportation based on traffic engineering principles applicable to the Turks and Caicos Islands . The roadway segment evaluation is presented in Tables 33 and 34. As indicated in the tables, Leeward Highway is projected to experience traffic congestion, especially within the major roundabouts during the peak periods. The traffic impacts created by the Moon Palace Resort Development will add to the level of congestion on this major east-west roadway. However, as a percent of the roadway's capacity, the Moon Palace Resort Development will have minimal to moderate effects to traffic conditions on Leeward Highway. Grace Bay Road has excess capacity to absorb the traffic impacts created by the subject resort development.

5.2.12.3.2 Main Entrance Analysis

Intersection capacity/level of service analyses were conducted the project's main access driveway on Grace Bay Road. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software. The results of the main driveway capacity analyses indicate that two exit lanes from the resort are required. Additionally, it is recommended that a westbound right-turn lane and an eastbound left-turn lane be implemented to avoid interruptions of traffic flow along Grace Bay Road. The driveway analyses are presented in Appendix X.

Table 33 – Roadway Segment Evaluation – Am Peak Hour Moon Palace Resort Development

TABLE 2 Roadwy Segment Evaluation - AM Peak Hour Moon Palace Resort Development								
			Existing Traffic		Future Conditons		Future Conditions	
		LOS "D"	(2026)		(2030) w/o Project		(2030) with Project	
Roadway Segment	Lanes	Capacity	Volume	LOS	Volume	LOS	Volume	LOS
Grace Bay Road								
- East of Project Site	2	1,330	976	D	995	D	1,056	D
- West of Project Site	2	1,330	976	D	995	D	1,241	D
Leeward Highway								
- Millennium Hwy to Allegro Rd	4	2,920	2,848	D	2,905	E	3,043	F
SOURCE: National Phusical Development Plan (Turks and Caicos) - Year 2020 & Traf Tech Engineering, Inc.								

Table 34 – Roadway Segment Evaluation – PM Peak Hour Moon Palace Resort Development

TABLE 3 Roadwy Segment Evaluation - PM Peak Hour Moon Palace Resort Development								
			Existing Traffic		Future Conditons		Future Conditions	
		LOS "D"	(2026)		(2030) w/o Project		(2030) with Project	
Roadway Segment	Lanes	Capacity	Volume	LOS	Volume	LOS	Volume	LOS
Grace Bay Road								
- East of Project Site	2	1,330	911	D	929	D	1,006	D
- West of Project Site	2	1,330	911	D	929	D	1,236	D
Leeward Highway								
- Millennium Hwy to Allegro Rd	4	2,920	2,904	D	2,962	E	3,135	F
SOURCE: National Phusical Development Plan (Turks and Caicos) - Year 2020 & Traf Tech Engineering, Inc.								

The conclusions of the traffic impact analysis are presented below.

- The proposed Moon Palace Resort Development is expected to generate approximately 307 AM peak hour trips (215 inbound and 92 outbound) and approximately 384 new trips during the typical afternoon peak hour (138 inbound and 246 outbound).

- Most of the traffic is expected to arrive/depart to and from the west via Grace Bay Road.
- Leeward Highway is projected to experience traffic congestion, especially within the major roundabouts during the peak periods.

- The traffic impacts created by the Moon Palace Resort Development will add to the level of congestion on Leeward Highway. However, as a percent of the roadway's capacity, the Moon Palace Resort Development will have minimal to moderate effects to traffic conditions on Leeward Highway.

- Grace Bay Road has excess capacity to absorb the traffic impacts created by the subject resort development.

- The main entrance into the resort development is projected to function adequately with two exit lanes one left-turn lane to head east and one right-turn lane to head west towards the Grace Bay area.

- It is recommended that a westbound right-turn lane and an eastbound left-turn lane be implemented on Grace Bay Road at the main entrance to avoid interruptions to traffic flow along this east-west roadway.

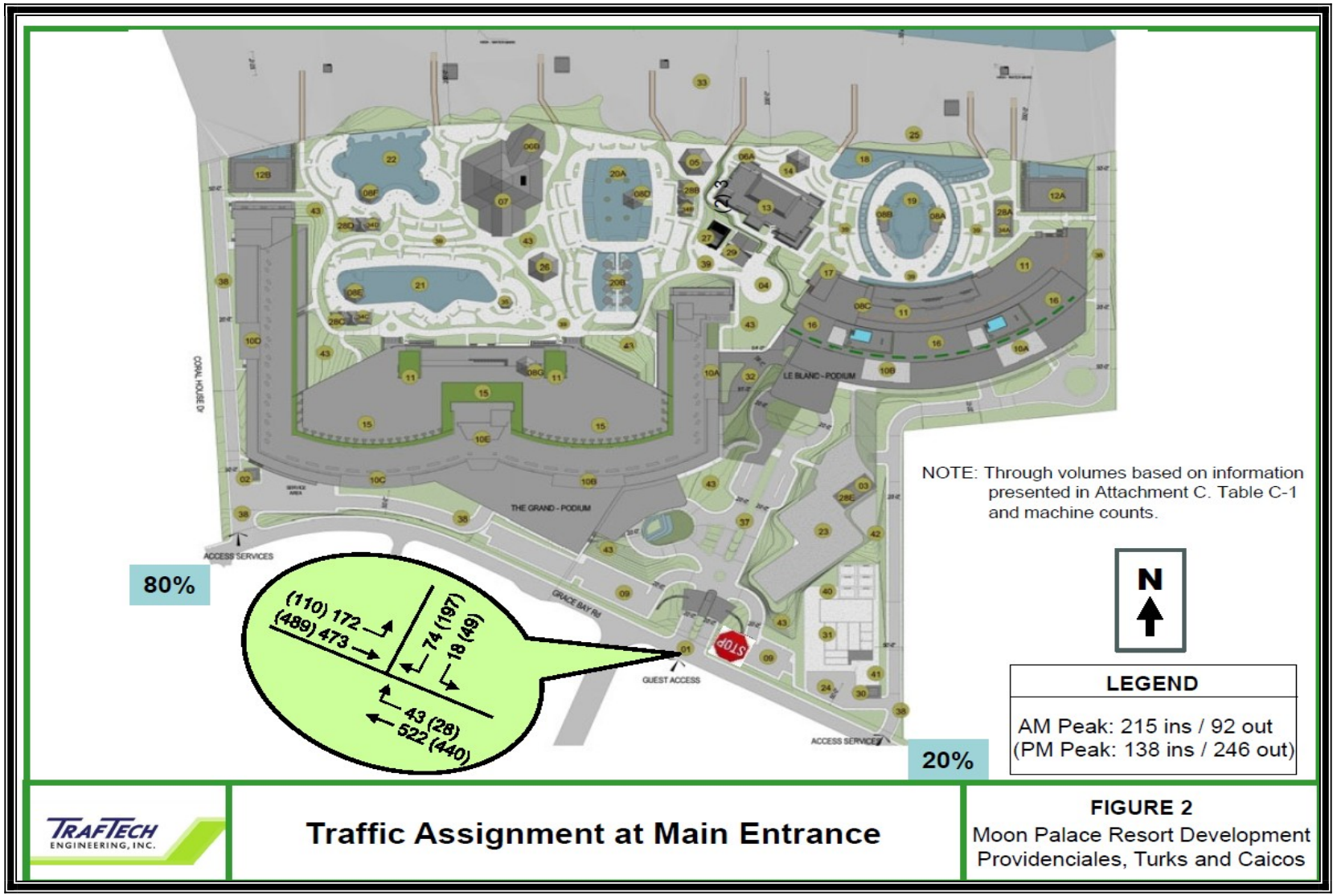


Figure 73 – Traffic Assignment at Main Entrance Analysis

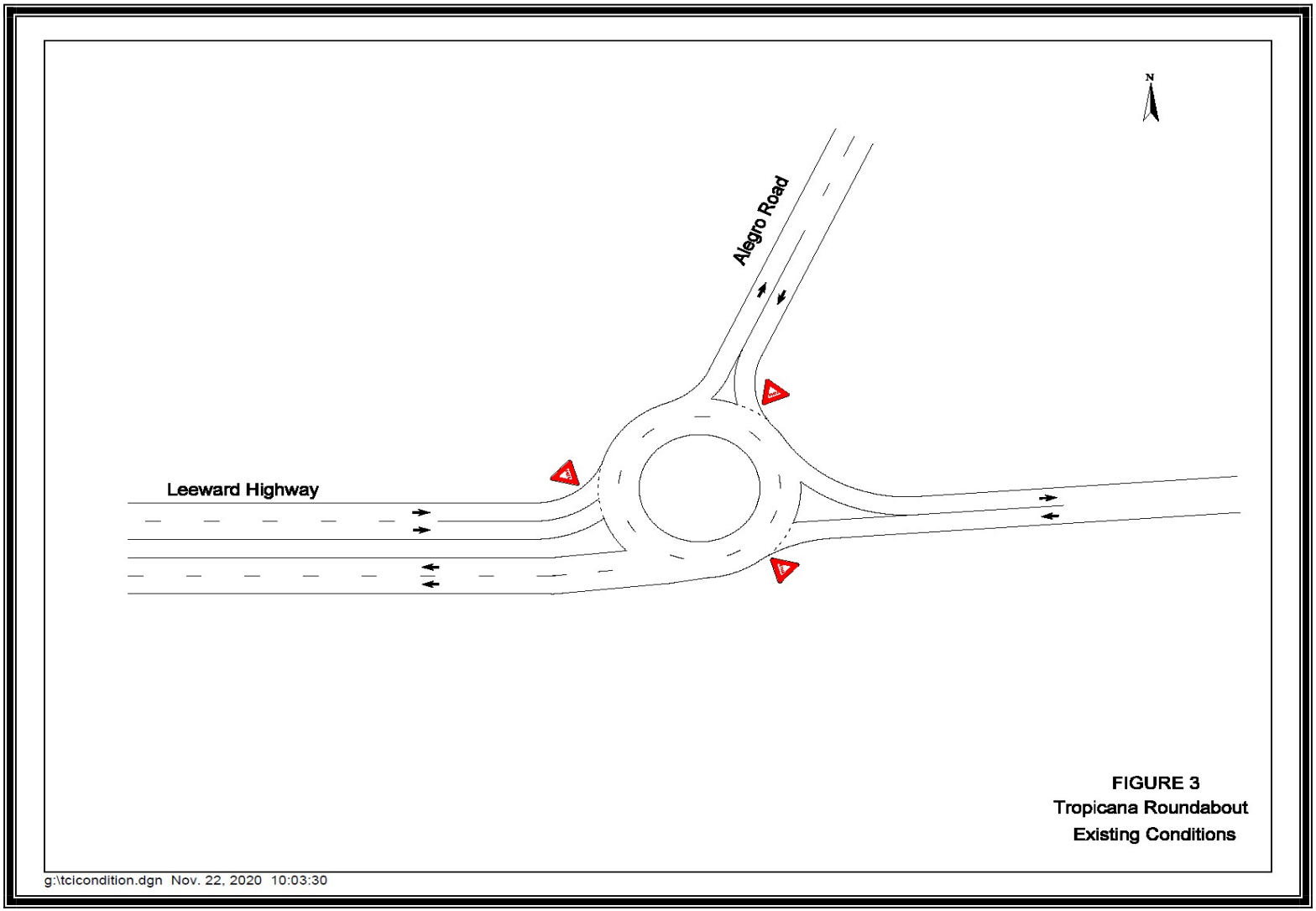


Figure 74 – Tropicana Roundabout Existing Conditions

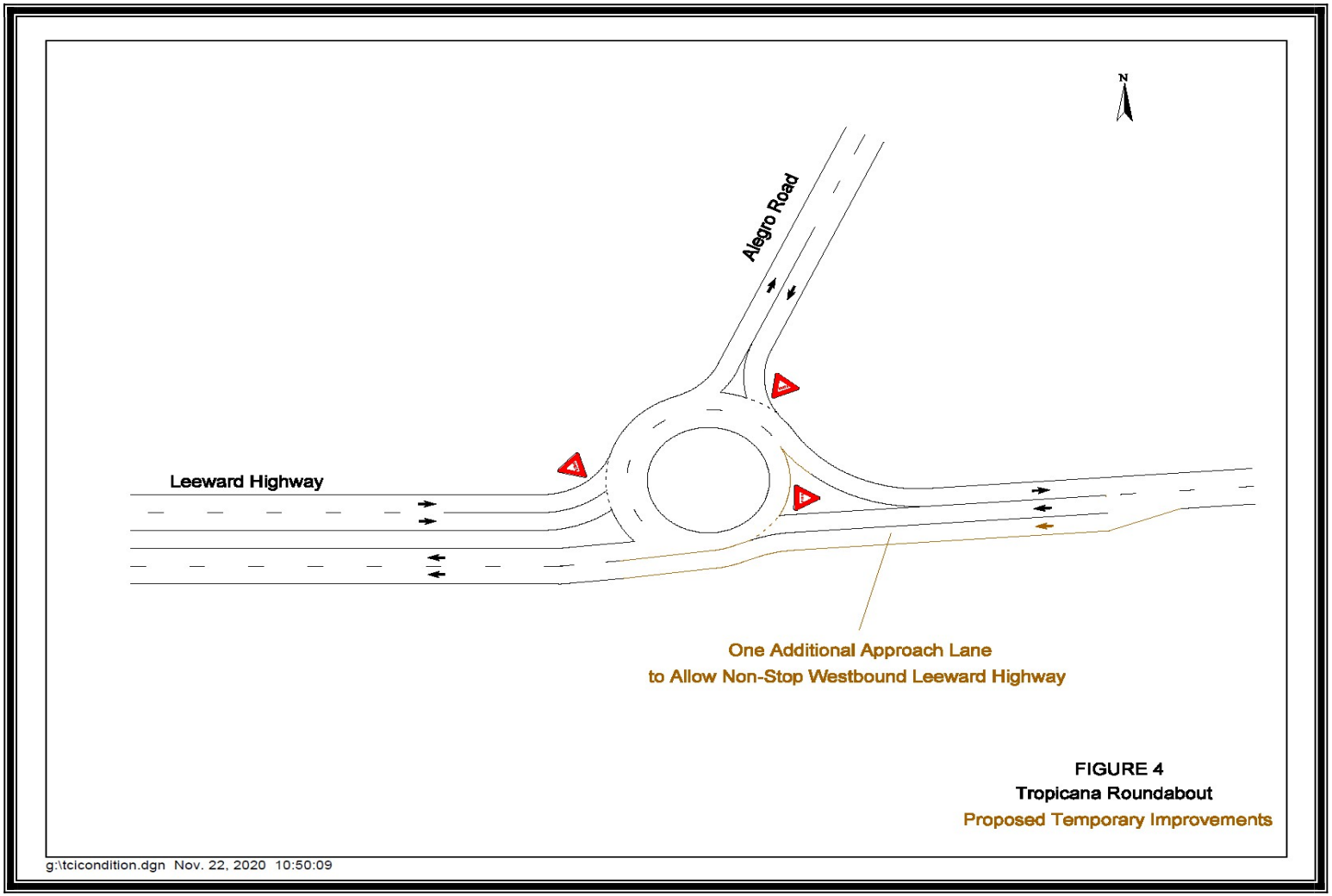


Figure 75 – Tropicana Proposed Temporary Improvements

5.2.12.4 Potential Impact on the general population – Construction and Operation

The impact of the proposed Moon Palace mega resorts on the general population of Providenciales will spread across several critical socio-economic categories, including economic and employment opportunities, the housing sector, public infrastructure and public services and environmental conditions.

5.2.12.4.1 Potential Impact on the general population Construction

During the construction phase temporary construction works will be needed to facilitate construction of the proposed development. This influx of temporary construction workers would drastically increase the island' s population placing tremendous strain on island's already deteriorating public infrastructure like road, water supply and solid waste system.

In accordance with the Development Agreement the developers is required to provide temporary housing for construction workers. This would relieve pressures on the already stressed housing market. It would stimulate local business activities for taxi drivers, beach vendors, entrepreneurs and domestic supplies.

According to estimates provided by the developers the project will create approximately 3,500 construction jobs during the construction phase. This will boost income for local contractor, entrepreneurs and suppliers.

5.2.12.4.2 Potential Impact on the general population Operation

During the operational phase the development will present a complex mixture of economic opportunities and challenges for the local population. Approximately 2,080 full-time direct jobs will be created during this phase of the development. Additionally, a several indirect jobs will be created because of spin-off development. The influx of person necessary to man the facility will cause a drastic increase in the island's population.

Increased visitor volume will provide a reliable customer base for local business such as taxi operators, excursion companies, supermarkets, shops restaurants and entertainment establishment. The daily operation of the twin-resorts will place enormous demand on public infrastructure, including water supply, the electrical grid and solid waste management systems.

5.2.12.5 Potential Impact on Neighboring Developments, Businesses and Residential Houses.

The proposed development is surrounded by luxury villa developments, partly located within the high-end Leeward residential community. It is not anticipated that there will be any traffic impacts on the Leeward residential community as no vehicular access to and from the property will be from the Leeward residential community. The impact of traffic will be negligible.

During the construction phase, the Contractor will give special attention to threats posed to the neighbouring community whether because of noise, dust, and other nuisances. The establishment of a collaborative working group will be explored to ensure a smooth construction process.

5.2.12.6 Potential Climate Change Impacts

No works are proposed for the marine environment; however, beach erosion is a natural phonemical. In response to severe erosion along the Grace Bay beach, neighbouring developments have proposed or installed hard engineering structures like rock groynes to mitigate against this process. The primary climate change vulnerabilities and ecological impacts surrounding coastal developments, includes accelerated beach erosion and shoreline destabilization and storm surge.

5.2.12.6.1 Locally within the Turks and Caicos

Whilst small island states, like the Turks and Caicos contribute very little to climate change they face significant potential impacts from this phenomenon, including rising sea levels leading to flooding and land loss, increased frequency and intensity of extreme weather events like tropical storms and hurricanes, damage to coral reefs, disruption of freshwater resources, potential displacement of populations due to shrinking landmass and disruptions to economies and livelihoods of peoples.

Climate change impacts have been considered in the design process mainly through the inclusion of sea level rise in design storms. This was done over a time horizon of 50 years and was 0.48m of added water elevation based on recent projections. Further mitigation against sea levels and surges was incorporated by adding a freeboard of 0.3m to the finished floor levels of the buildings.

5.2.12.6.2 Globally, including resulting global transportation

Many factors contribute to climate change and associated sea level rise. The Intergovernmental Panel on Climate Change (IPCC) determined that the current trend

of sea level rise is 3.4 mm/yr. The IPCC has also predicted that sea levels may rise anywhere from 8.9 cm to 23.8cm by the year 2050 and 18 cm to 59 cm by the year 2100. Some reports have called the IPCC conservative in their assessments and feel that they do not accurately account for the response of continental ice to greenhouse warming. These other reports have estimates of as much as 60 cm (the low range) equilibration. and 215 cm (the high range) by 2100.

In addition, it is notable that these projections in sea level rise are associated with global (eustatic) levels and do not account for localized changes in sea level associated with tectonic

5.2.12.7 Other Impacts

The daily churn of commercial tour buses, rental cars, and private vehicles has not been a problem at the *Beaches* TCI Resort. They have a single entrance/exit for their property. Using a separate entrance/exit and the dynamics of exiting from the proposed resort onto the Grace Bay Road whilst similar a vehicle is waiting on Grace Bay Road to enter the Leeward Government subdivision will be examined carefully to prevent traffic bottlenecks.

Beach density, crowding prevention, and the potential visual impacts of hundreds of tightly packed loungers, structures for towels, water-sports rental structures, structures for tour operators, and those for security, usually on Crown Land (the beach environment) must be shown on detailed plans and carefully examined and determined by the Director of Planning in conjunction with the Director, DECR. These are normally an afterthought and the short sighting of the TCIG officials. The objective must be to maintain unobstructed movement along the beach by users of the beach, residents and tourists alike, and prevent an otherwise tranquil and low-density residential area turning into a crowded, visually unattractive, and undesirable place to be.

5.3 Impact Assessment

In carrying out the environmental impact assessment (EIA), we have collected baseline data from direct site surveys and investigations, sought public opinions, analyzed data, examined photography, researched literature, conducted interviews with stakeholders including relevant TCIG departments and authorities, thoroughly studied the planning application and applied our professionally qualified, trained, and experienced judgement.

We have provided a description of the site, the development, and looked at laws and regulations. An impact of the proposed development is provided in this environmental impact statement of findings (EIS), along with the predictions.

Included in this statement of findings are the conclusions, mitigation measures, and management plans to counteract any potential adverse impacts.

Cumulative impact

Cumulative impacts are those that may result from the combined effects of The Project, taking into consideration the present use, previous disturbance and future use of the area. For this project the cumulative impacts include terrestrial habitat loss, increased human activity and coastal disturbance.

The land clearing required for development, when considered with existing development of the Leeward and Grace Bay Area, may contribute to the reduction and fragmentation of dry broadleaf evergreen formation habitat. Although portions of the property are already altered, additional clearing will reduce habitat availability and overall ecological connectivity within the Leeward and Grace Bay Area. Despite this, cumulative impacts are expected to be low as the ecosystem is already altered with only a few areas of intact dense broadleaf evergreen formation. The project is not anticipated to cause national or regional scale habitat loss although it contributes to it.

Cumulative impacts on the coastal environment may occur due to creation of the boardwalks and increased recreational use. Overall, the cumulative impacts are expected to be low. Although the activities may increase pedestrian presence along the coast, the impact is expected to be localized due to the creation of the designated access point (boardwalks). Activities are not expected to contribute to degradation of the wider coastal environment of Grace Bay Beach and Leeward Beach

Increased human activity in the marine environment can result in cumulative impact to marine resources. The near-shore environment consists of primarily sandy bottoms already subjected to recreational use, whereas the sensitive environments are located offshore where there will be no development and no utilization by beach goers. Cumulative impacts on the marine environment are anticipated to be low as there are no direct work scheduled, recreational activities already occur and the increase in human use is not anticipated to degrade the wider marine environment of Grace Bay and Leeward areas.

A summary of the potential impacts is presented in Table 35. The table identifies whether impacts are expected at the project size, within a 500m area or may extend indirectly within the wider 5km zone of influence.

Table 35 – Potential environmental impacts at the project site

Potential Impact	Project Site	500 m Radius	5 km Radius	Short	Long	Significance of Effect
Impacts on average waves in the area						No Impact
Impacts on average tidal currents in the area						No Impact
Impacts on erosion or accretion processes			X		X	Negligible (Natural coastal processes)
Impacts from storm waves in the area		X	X	X	X	Negligible (Existing coastal process)
Impacts from storm inundation in the area		X	X		X	Moderate (Climate related vulnerability)
Impacts on terrestrial flora and fauna	X			X		Negligible
Impacts on dune ecosystems and coastal habitats	X	X		X	X	Negligible
Impacts on marine benthos						No Impact
Impacts on nearshore water quality from runoff and sediment transport	X	X		X		Negligible
Potential impacts from accidental spills or contamination	X	X		X		Negligible
Impacts from windblown debris and marine litter	X	X	X	X	X	Negligible
Impacts from dust deposition on coastal and marine assets		X	X		X	Negligible
Impacts from increased human use of coastal resources		X	X		X	Negligible
Impacts associated with climate change and sea level rise		X	X		X	Moderate (Climate related)

5.4 Derivation of Significance

The magnitude, duration and likelihood of an impact are to be considered in relation to the sensitivity of the affected environmental receptor to derive the overall significance of each potential impact. As no coastal works, shoreline modification or marine

intervention will occur, direct impacts to coastal and marine assets are considered to have a negligible likelihood of occurrence.

Impacts associated with seabed disturbance, habitat loss, changes to sediment transport and alteration of nearshore processes are therefore considered to have no impact. Potential indirect impacts associated with runoff, sediment transport, debris and accidental contamination have a low likelihood of occurring. Where these events occur, the magnitude is expected to be low, temporary and localised, resulting in a negligible significance.

Similarly, although benthic habitats such as coral communities and seagrass areas are considered sensitive receptors, there is no mechanism for direct disturbance or habitat alteration, resulting in no impact. Potential impacts to dune systems and coastal habitats are also considered negligible due to the absence of activities that would directly disturb vegetation or alter coastal habitat function. Existing pressures such as erosion, storms and human activity may continue independently of the selected alternative.

Climate related pressures, including sea level rise, storm intensity and coastal inundation, may represent a moderate long-term pressure on coastal assets due to their magnitude and duration. However, these effects are associated with broader regional climate trends and are not attributable to the selected alternative.

It is anticipated that we have provided evidence in our statement of findings to convince the relevant authorities that there are justifiable reasons why the proposed development should be allowed.

A register of Significant Aspects and Impacts was used to derive impact significance

5.4.1 Register of Significant Aspects and Impacts

Environmental impacts of The Project are impacts to the natural communities and wildlife in the area that can be reasonably inferred, considering the footprint of impacts and known habitats on-site. Other expected impacts are those related to normal construction and operation such as waste generation and disposal, fuelling, and use of potentially hazardous materials as well as other accidents or malfunctions, which may entail an environmental component. The Register of Significant Aspects and Impacts considers potential impacts that may be due to construction activities. The Register will be used in the development of method statements to proactively manage and mitigate potential impacts pertaining to The Project.

The Register of Significant Aspects and Impacts evaluates the potential impacts identified in the Environmental Impact Assessment and assigns a significant Impact rating. Risk Scores measure the likelihood of the impact occurring and are measured on a scale of 1-10 with 1 being unlikely to occur and 10 being highly likely to occur. Magnitude scores measure the scale of the impact if it occurs. Duration ranges from Temporary (T), Short Term (ST), Long term (LT) and Permanent (P). Intensity parameters are Low (L), Moderate (M) and High (H). Low Impact refers to impact reversible in 1 year. Moderate Impact refers to reversible impacts in a 5-year period. High Impact refers to impacts that are not reversible within 5 to 10 years or are irreversible.

Table 36 – Register of Significant Aspects and Impacts

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
CONSTRUCTION PHASE						
Noise	Mobilization and construction	Disturbance to terrestrial biodiversity surrounding the site	ST	N	3	• Limited work to daylight hours.
	Mobilization and construction	Disturbance to marine biodiversity surrounding the site	T	N	1	• No mitigations are required.
Lighting	Securing site during construction phase.	Disrupt natural process and disturb/harm marine life (such as turtle hatchlings) and avian species	ST	L	3	• A proper light management plan should be established. • Tilt light away from sensitive areas • Use shades where necessary
Water Quality	Fuel, Oil and Chemical Spills during construction	Contamination of groundwater	ST	M	5	• No hazardous substances will be permitted to escape into the exposed groundwater at the work site. • ·All fuel and oil spills will be cleaned up as per the Fuel Spill Prevention Plan. • ·Spill Kits will be located on all machinery and at designated areas on-

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
						site. • ·Equipment on site will be well-maintained. All leaking equipment will be removed from the site and repaired before being brought back on-site.
Solid Waste	Construction Activity	Increase in terrestrial and marine debris. This may cause entanglement of fauna (specifically seabirds), introduction in diseases, increase of fauna ingesting debris and a smothering of both terrestrial and marine habitats.	ST	M	6	• A proper waste management system should be created. • Any material or equipment that is blown into the water should be retrieved at the earliest convenience, in a safe manner. • Sufficient waste bins should be provided on site. Waste bins should have lids to ensure domestic waste does not enter open water. • Waste should be recycled before entering pre-approved landfill. • Construction waste should be reused on site where feasible.
	Land Clearing – Vegetative Waste	Proliferation of invasive species	T	M	10	• All invasive species should be disposed of

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
						According to the Invasive Species Management Plan
	Hazardous Waste		ST	M	6	• Proper usage and disposal of oil spill material. • Hazardous waste to be stored in lidded containers in a safe place that is lined and bermed, and away from environmentally sensitive areas. • Provisions should be made for management and disposal at a licensed facility. Material should be removed as it's created. • Pollution prevention practices should be implemented.
Vegetation	Land Clearing	Disturbance to biodiversity surrounding the site. Habitat degradation	P	M	10	• Native species that can be reused in the landscaping pallet should be removed prior to land clearing. • All invasive species will be removed according to the Invasive species

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
						Management Plan
	Fire	Habitat degradation	LT	M	1	• Fire control protocols outlined in the Fire Control Pan should be followed. • Fire Prevention tools (extinguishers) should be resented onsite.
Wildlife	Construction	Disturbance of terrestrial wildlife	ST	M	10	• Wildlife not within the direct footprint of work should not be disturbed. • Wildlife encounters during construction should follow the wildlife management plan.
	Construction	Disturbance of marine wildlife	T	N	1	• No marine wildlife should be disturbed during work. • Encourage the use of sunscreen
Dune Ecosystem	Creation of the boardwalks	Turbidity	T	L	3	• Installation of silt curtains during creation of the boardwalks
	Creation of the boardwalks	Removal of vegetation within the direct footprint of works. Trampling of vegetation	ST	M	10	• Only vegetation within the direct footprint of works should be disturbed. • Replanting of native dune species should

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
						occur once boardwalks are completed.
POST – CONSTRUCTION PHASE						
Water Quality	Increased Human Use	Decreased water quality	T	N	3	• The area is currently being used for recreational activity.
Storm water Runoff	Increase period of heavy rainfall or severe weather.	Decrease in water quality Impacts on marine ecosystem	ST	M	3	• Drainage systems will be designed to minimize discharge, erosion and sedimentation transport
Terrestrial Ecosystem	Landscaping	Introduction of invasive species	ST	L		• Landscaping pallet will include native species. • No invasive species will be used in the landscaping pallet.
Marine Ecosystem	Increase Recreational Use (swimming wading, etc.)	Decrease on water quality. Disturbance to wildlife	T	L	1	• The area is already being used for recreational activity.
Wildlife	Recreational use	Disturbance of Terrestrial and Marine Wildlife	T	L	3	• Encourage the use of sunscreen. • Include signage of the rule of the Princess Alexander National Park. • No hunting or fishing will be allowed. • No wildlife should be harassed. • An Operational Wildlife

Significant Aspect and Impact	Activity	Potential Impact	Significant Impact Ratting			Mitigation Strategy
			Magnitude		Risk Score	
			Duration	Intensity		
						Management Plan should be implemented. Staff of the resort should follow this plan if wildlife is encountered.
	Building height	Increase the potential for bird collisions	T	N	1	• Species that frequent the area are accustomed to the existing urban environment and high-rise structures.
Sunlight Pattern and Shadow Casting	Resort operations	Impacts on surrounding vegetation	P	L	8	• The surrounding area consists of existing high-rise structures. • Design should be considered to minimize excessive shading of adjacent properties, vegetation
Aesthetic and other building environment	Operation of the resort	Decrease in aesthetics.	ST	L	3	• Incorporating an appropriate architectural design and landscape plan that prioritizes native vegetation is recommended to enhance the visual character of the site while creating a native flora corridor

SECTION VI

6.0 Mitigation and Monitoring

Although no direct impacts to coastal or marine assets are anticipated, appropriate environmental management measures should be maintained to ensure that existing coastal conditions and ecological functions are preserved. Mitigation measures should focus on preventing indirect impacts associated with land-based activities, including runoff, debris, accidental contamination and disturbance of sensitive coastal habitats.

Monitoring should be undertaken to confirm that coastal and marine assets remain consistent with existing baseline conditions and to identify any changes associated with natural coastal processes, climate related pressures or increased human use.

6.1 Proposed actions and schedule to mitigate against any environmental impacts.

Mitigation measures should focus on maintaining existing environmental conditions and reducing potential indirect pressures on coastal and marine assets. These measures include:

a. To limit the impact of the construction workers and staff during the operational phases of the proposed development on the islands' limited medical and health services, this resort community could be served separately from the local population by having a clinic within the resort. During construction, a temporary mobile clinic could be used. By providing sufficient and adequate medical services, and a health practitioner within the resort, would have the following positive benefits:

   - This stops patients crowding at the local hospitals and clinics.
   - Patients would only travel to the hospital if determined by the health practitioner within the resort.

b. The TCIG must continue to formalize and strengthen its relationship with corporate entities and all stakeholders to ensure that the Turks and Caicos Islands' citizens are qualified and skilled. Therefore, the Technical and Vocational education programmes must be an important strategic priority. Strengthening apprenticeship opportunities by linking them directly to the proposed Moon Palace Resort and others is a must. This allows students to benefit from apprenticeship programmes over a two-year period, like that now being executed by the Grace Bay Club. Apprenticeship programmes are the most powerful across the Caribbean. It prevents students from having to go aboard

and adding to the country's brain drain. It also shows that the Government and the private sector are engaged in meaningful and collaborative effort. The Moon Palace Resort must be obligated to participate in the apprenticeship programmes but also sponsor several scholarships annually for Turks and Caicos Islands citizens. This will ensure their transition to middle and upper management positions within the resort, replacing and becoming a substitute for foreign work permit holders.

c. In the long term, and on the matter of having Turks and Caicos Islanders fully qualified and ready for the future of tourism, the TCIG must model a local institution to that of the Hotel Pomarine in Barbados. Hotel Pomarine is a unique **3-star hospitality training boutique hotel** located in Marine Gardens, Hastings, Christ Church. It functions as the training facility for the Jean and Norma Holder Hospitality Institute (JNHHI) of the Barbados Community College, where students prepare for careers in the tourism industry under professional guidance. This institute offers the Barbados tourism industry:

    - Practical Training – Students gain real-world experience in cooking, cleaning, managing, and guest services.
    - High Service Standards – Trainees deliver attentive, high-caliber care that raises overall service expectations across the island.
    - Local Workforce Pipeline – The facility supplies a steady stream of trained chefs, front-desk agents, and managers directly into the local resorts and restaurants.

d. Grace Bay Beach on which the hotel is proposed, is the Turks and Caicos Islands' single most valuable and economic natural resource or asset that continues to bring in millions of dollars of inward investments. The beach is consistently ranked amongst the best beaches in the world and has won the same prize in major travel awards. The thirteen (13) miles of powdery white sand and incredibly calm turquoise waters help maintain it as a top contender for the global number one (1) spot. It is easy to surmise that if strategic and targeted management plans and actions are not initiated to control developmental impacts, the beach is likely to degrade with catastrophic impacts on the Islands' tourism future, its perception, and economy. Coastal interventions of Rock Groynes, Private Seawalls, Dredging and Beach Replenishment, Destruction of Sand Dunes and Dune Vegetation, Severe Storms, Effects of Climate Change and Sea Level rise are all having a devastating impact on the area. The solutions to

the problems are exacerbated rather than preventing the serious visual and aesthetic impacts, and obstructions to beach users.

Despite its vital significance to the economy of the Turks and Caicos Islands, Grace Bay Beach itself is not fully and properly protected. Whether Grace Bay Beach with its fluctuating processes of erosion and accretion is entirely within the coordinate boundaries of the Princess Alexandra Land and Sea National Park is fully debatable. But the protections for the beach itself must go beyond the provisions of the National Parks Ordinance and Coast Protection Ordinances.

For many years dating back to the 1980s, there has been an accepted Cabinet or Government Policy that docks, jetties, wharfs, and other similar structures would be prohibited along Grace Bay Beach. The existing docks that were located at the Club Med, Ritz Carlton, and *Beaches* properties were grandfathered in. While this was an accepted practice, to date there is no written evidence of the existence of the Policy.

The Policy relating to the prohibition of further wharfs, docks, jetties, and other similar structures must be written and approved by Cabinet and enshrined into legislation.

An independent environmental and design study must be carried out for the entirety of Grace Bay Beach to provide answers, including, but not limited to the identification of the causes of the erosion in the locality; whether beach control measures currently seen are causing further damage to the coastline in the affected areas and downwind and whether any of them are necessary. If so, the preferred types of structures that may be needed to prevent further beach erosion and allow for accretion should be detailed. The study must also show where along the coast, from the Leeward Going Through Channel in a southwest direction along the coastline should an end point be delineated beyond which no structures should be allowed to prevent further intrusion and beach erosion into the heart of Grace Bay Beach.

The study must also look at design guides, which will specify whether the current building setback distances are satisfactory, and identify beach enhancement measures that could improve and enhance the aesthetic quality of Grace Bay.

Additionally, permissions for further beach restoration projects shall not be forthcoming from the TCI Cabinet until such time that independent environmental studies have been carried out and recommendations made.

e. With an estimated 2,080 employees being hired during the operation of the proposed development and 3,500 employees during construction, and only 30 percent of which will be locals, land must be sought by the developer for staff housing for the entire duration of the foreign labour force being on the island. This would prevent interference with an already high demand, short supply, and exorbitantly priced rental market. The closest resort in size that exists within the Turks and Caicos Islands is *Beaches* TCI, which has 859 rooms. *Beaches* has an existing 106 staff housing units, located at Venetian Road and the rented Sun Flowers, with approximately 400 additional units proposed. This gives a clear indication of the magnitude of staff housing, which will be needed for the proposed development.

f. The key to the success of the proposed development is going to be the establishment of a development impact team, consisting of a few selected neighbours and development team members working collaboratively not just during construction of the development, but also during the operational phases to address concerns of noise, light, and visual intrusions.

g. The design elements have already been built into mitigation, for example, the elimination of vehicular access into the private, low-density residential Leeward community. Sizeable building setback distances from the boundary of the beach access, and the width of the beach access lane is another mitigation measure. The are no high-rise buildings in the vicinity of Sunset Beach Villas. Noise and light mitigation will be the concerns there. This can be addressed by densely planting tall trees and restricting hours of construction and hours for noise generating activities during operation of the development.

h. A 976-bedroom resort introduces a highly transient population of thousands of rotating tourists every week onto the beach environment. These tourists will naturally extend beyond the linear frontage of the resort. The establishment of briefs, written and verbal for guests, educate them on being mindful of neighbouring residential properties will be important. There should also be informational signs for guests notifying them, not as control or obstruction, when they are going beyond the boundaries of the resort.

i. Beach density, crowding prevention, and the potential visual impacts of hundreds of tightly packed loungers, structures for towels, water-sports rental structures, structures for tour operators, and those for security, usually on Crown Land (the beach environment) must be shown on detailed plans and carefully examined and determined by the Director of Planning in conjunction with the Director, DCR. These are normally after thoughts and the short sightings of TCIG officials. The objective must be to maintain unobstructed movement along the beach by beachgoers, both for residents and tourists alike, and prevent a tranquil low density residential area in character turning into a crowded, visually unattractive, and undesirable place to be.

Each report produced should predict trends based on previous reports and comment on the overall successes and shortcomings of the coastal works implementation. Any anomalies should be highlighted with possible causes mentioned. For example, a beach profile survey report might show a period of erosion after a swell event. This should be noted in the report to determine whether the erosion is episodic or a constant.

Actions to be taken to mitigate against impacts to groundwater resource are to include*:*

Pre- construction -	Water quality sample episode 2 weeks prior to Construction
Construction -	Weekly water quality sampling episodes
Post- construction	Quarterly water quality sampling episodes

6.1.1 impacts on the terrestrial and marine life (Displacement).

Terrestrial and marine wildlife monitoring should be implemented across the pre-construction, construction, and post construction phases of The Project to assess changes in the presence abundance and behaviour with the Project site.

Given that the property already contains paths and patches of human-altered habitat, as well as the marine environment is already being used for recreational purposes, some level of wildlife displacement is already occurring. The Monitoring Program should focus on determining whether construction causes measurable increase in the displacement of wildlife.

Table 37 outlines the actions recommended to minimize potential impacts to marine and terrestrial wildlife.

Table 37 – Terrestrial Ecosystem Monitoring Schedule

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline biological baseline assessment	Completed to determine the existing presence abundance, habitat use, and nesting areas of fauna	Once prior to construction	Pre-construction	Botanical Specialist and Marine Biologist
Terrestrial wildlife monitoring	Determines the presence and abundance of birds, reptiles, mammals, and other fauna using habitats. All species observed along with abundance shall be documented. During clearing changes in wildlife activity or movement away from The Project site should be documented.	During Clearing, right after and clearing then monthly	Construction	Environmental Monitor with guidance from a Botanical Specialist
Marine wildlife monitoring	Determines the presence and abundance of fish, coral, reptile mammals, and other fauns using habitats. All species observed along with abundance shall be documented.	Quarterly during construction	Construction	Environmental Monitor with guidance from a Marine Biologist (Construction)
		Bi-annually for the first year during operations	Post construction	Marine biologist
Wildlife Observations	Ensure all wildlife encounter protocols are adhered to. All encounters, nesting activity and wildlife injury or mortality should be documented.	Weekly with daily observation being done during land clearing activities	Construction	Environmental Monitor

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Post Construction Survey	Completed to determine the existing presence abundance, habitat use, and nesting areas of fauna.	Quarterly for 2 years	Post - construction.	Botanical Specialist and Marine Biologist
Light Impacts	To determine changes in wildlife activity as a response to artificial lighting.	Quarterly for 1 years	Operation	Resort Staff (trained) with guidance from a Botanical Specialist and Marine Biologist

6.1.2 Impacts on Dunes and other Coastal Ecosystems and other habitats

Dune monitoring should be implemented across the pre-construction, construction, and post construction phases of The Project to assess changes in dune vegetation, habitat condition and pedestrian disturbance.

Given the existing recreational use of the beach the Monitoring Program should focus on determining the project related impacts from the existing background and natural seasonal changes of the dune

Table 38 outlines the actions recommended to minimize potential impacts to the dune ecosystem.

Table 38 - Dune Ecosystem Monitoring Schedule

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline assessment	Completed to determine vegetative cover, species composition and existing disturbance of the existing dunes.	Once prior to construction	Pre-construction.	Botanical Specialist
Dune and Coastal Vegetation Monitoring	Determines vegetation cover, plant health and species composition on the dune and	Daily during clearing then monthly	Construction	Environmental Monitor with guidance from a Botanical Specialist

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
	coastal environment. Also looks at trampling and vegetation loss. Any observation of invasive species should be documented.	Quarterly for the first 2 years	Operation	Botanical Specialist
Pedestrian Disturbance	Monitors trampling, and vegetation damage due to unauthorized access and use of informal access routes. Any unauthorized access should be documented.	Monthly.	Construction	Environmental Monitor with guidance from a Botanical Specialist
		Monthly. More frequent during peak season with high number of visitors	Operation	Staff of the Resort (trained)
Wildlife	Monitoring to determine ecosystem function for wildlife. Looks for evidence of nesting, feedings, and wildlife activity	Weekly during relevant seasons and quarterly otherwise	Construction	Environmental Monitor with guidance from a Botanical Specialist
		Weekly during relevant seasons	Operation	Staff of the Resort (trained) with guidance from Botanical Specialist
Dune Vegetation Replanting	Monitors that native dune species are reused in replanting and that no additional disturbance to the dune ecosystem occurs.	Weekly during replanting efforts	Construction	Landscaping Team with guidance from the Botanical Specialist

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Post-construction Survey	Monitor recovery of the dune biotic environment. Monitor effectiveness of replanting efforts.	Weekly for the first 2 months, then monthly for the next 4 months and then quarterly for the next year.	Post-construction	Botanical Specialist
Boardwalk Access	Monitors condition of the boardwalks and monitor how effective access controls are. Look at visitor compliance and recommend adjustments as necessary.	Monthly during	Operation	Staff of the Resort (trained) with guidance from Botanical Specialist
Overall ecosystem condition	Monitors changes in habitat conditions, vegetation cover and human disturbance to the biotic environment.	Annually	Operation	Botanical Specialist

6.1.3 Impact on Water Quality

Water quality impacts are detailed on both ground and marine waters.

6.1.3.1 Impact on Ground Water Quality

Saltwater encroachment will be monitored as per the proposed actions under Section 6.1. When salinity measurement exceeds the freshwater threshold of 600 parts per million the groundwater abstraction regime will be modified to reduce the impact on the freshwater lens. Salinity measurements greater than 1200 parts per million will cause the groundwater abstraction regime to be shut down and rest until salinity measurements return to measurements below 600 parts per million.

Additionally, nutrient loading will be closely monitored to ensure that individual parameters are kept within satisfactory limits. Any parameter(s) exceeding satisfactory limits will cause the application of fertilizers to be modified to reduce the negative impact.

6.1.3.2 Impact on Marine Water Quality

An open water quality monitoring program should be implemented to identify potential changes in water quality associated with the construction and operation of The Project. As there are no direct impacts to the marine environment monitoring activities will be conditional to when there are impacts to the marine environment.

Table 38 outlines the actions recommended to minimize water quality impacts.

Table 39 – Marine Water Quality Monitoring Schedule

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline Marine Water Quality Analysis.	Completed to determine baseline. Parameter tested include: • Ammonia (as mgN/l), • Nitrate/nitrite (as mnN/l), • Nitrite (as mgN/l), • Total dissolved phosphorus (mg/l), • Total chlorophyll (µg/l), • Pheophytin (µg/l), • Active chlorophyll (µg/l) and • Total Coliform • Turbidity • Temperature • Dissolved oxygen • Total dissolved solid • Salinity • pH	Once prior to construction	Pre-construction.	Marine Biologist or Hydrogeologist
Nearshore Environment	Retesting of the water quality parameters listed in the Baseline Marine Water Quality Analysis.	Quarterly for two years after which frequency will be determined by results.	Construction, Post Construction, and Operation	Marine Biologist or Hydrogeologist

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Offshore	Retesting of the water quality parameters listed in the Baseline Marine Water Quality Analysis.	Not required as there is no direct or indirect impacts.	N/A	N/A
Incident Monitoring	Retesting of the water quality parameters listed in the baseline in the event of: • Contamination • Spills • Unusual odor/colour • Algal growth • Marine species die-offs • Sedimentation Continuous Monitoring until incident is resolved.	Immediately following the incident then weekly until incident is resolved	Construction, Post Construction, and Operation	Environmental Monitor, Resort Staff (trained), Marine Biologist or Hydrogeologist

6.1.4 Impacts to noise, light and air emissions

Monitoring of natural light and shadow patterns should be undertaken to determine whether the development results in changes to sunlight availability within the surrounding and adjacent terrestrial and coastal ecosystems. Monitoring should focus on areas with retained vegetation and any sensitive habitats.

6.1.5 Impacts from natural light and shadow cycles.

Monitoring of natural light and shadow patterns should be undertaken to determine whether the development results in changes to sunlight availability within the surrounding and adjacent terrestrial and coastal ecosystems. Monitoring should focus on areas with retained vegetation and any sensitive habitats.

Table 40 – Outlines the actions recommended to minimize potential impacts due to shading.

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline Light Assessment	Assessment to determine duration of sunlight, natural shadow patterns and areas receiving direct sunlight.	Once	Pre-construction or early construction.	Botanical Specialist
Seasonal Assessment	Assessment to determine duration of and timing of shadows during the summer and winter season.	Twice annually covering summer and winter conditions.	Construction	Environmental Monitor with guidance from the Botanical Specialist
		Twice annually covering summer and winter conditions at least 2 years after completion.	Operation	Resort Staff (trained) with guidance from the Botanical Specialist
Dune and Vegetation Response	Monitoring plant health, vegetation density, species composition and any signs of stress due to shading.	Quarterly	Operation	Resort Staff (trained) with guidance from the Botanical Specialist
Artificial Lighting	Monitoring the effects of artificial light spills into the terrestrial and coastal ecosystems.	Quarterly and following major lighting changes	Operation	Resort Staff (trained) with guidance from the Botanical Specialist

6.1.6 Impacts of building height.

The Turks and Caicos Government's Planning Department has amended the country's Physical planning Ordinance and Development Manual to allow buildings up to 12-storeys on certain areas of Grace Bay Beach, Providenciales. The site of the proposed 12-stories Moon Palace development is included in this density, zoning and building height change. In fact, Outline Development Permission has been granted for the development by the Physical Planning Board and the Department of Planning on December 4, 2025. Other similar 12-storey buildings have been constructed or are under construction along the Grace Bay Beach strip. These includes the Ritz Carlton, and the St. Regis towers developments.

However, whilst the development will not establish a new legal building height precedent for the area, it would significantly impact on the physical density and architecture landscape of the area. The 12-storey high-buildings being built adjacent to the Leeward neighborhood composed of 1 – to 3-story residential luxury villas will fundamentally alters the visual landscape of the area.

Measures to mitigate or softens the 12-storeys building height on adjacent properties will be to have expanded setbacks and deep green buffers. By establishing wide setback zones along the shared property boundaries with dense, multi-tiered tropical vegetation provides both a visual block and sound barrier. The choice of building materials and exterior lighting can determine how heavily the towers impose on the skyline.

6.1.7 Impacts of incursion of invasive species of flora and fauna.

Monitoring should be implemented to identify the introduction, establishment, and spread invasive flora and fauna species associated with the construction and operational phase. Invasive species can be introduced through importation of landscape material, transportation of construction and operation material and equipment, and human activity.

All invasive species identified should be handled promptly based on the Invasive Species Management Plan (see Appendix V).

Table 41 – Invasive Species Monitoring Schedule

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline Invasive Species Survey	Assessment to determine existing invasive species (flora and fauna), their distribution, abundance and areas of occurrence.	Once	Pre-construction	Botanical Specialist
Construction Monitoring	Monitoring to determine duration of and timing of shadows during the summer and winter season. Monitoring should include: • Checking imported material and transport container containing landscape trees.	Daily during land clearing and landscaping activities. Monthly otherwise	Construction	Environmental Monitor trained to identify invasive species
Vegetation Monitoring	Looking for the presence, abundance and spread of invasive flora and fauna on The Project site. Looking for invasive species within planted and landscaped areas.	Quarterly with weekly checks during landscaping activities	Construction	Environmental Monitor trained to identify invasive species.
		Monthly for the first 6 months then quarterly	Operation	Resort Staff trained to identify invasive species.
Boundary Monitoring	Monitoring for the presence, abundance and spread of invasive flora and fauna into adjacent habitats	Quarterly	Operation	Resort Staff (trained) with guidance from the Botanical Specialist

6.1.8 Impacts to resettled wildlife

Where wildlife resettles on the property, monitoring should occur to determine whether resettlement causes operation concerns. Resettled wildlife should only be moved, when necessary, for example if it causes safety or health concerns, and by a qualified person. Should wildlife be removed, appropriate wildlife protection measures should be followed as per the Wildlife Management Plan (see Appendix W).

In addition to the monitoring schedule outlined in section 6.1.1, Table 41 outlines the actions recommended to minimize potential impacts of incursion of invasive species.

Table 42 – Resettle Wildlife Management Schedule

Monitoring Activity	Purpose and parameters	Frequency	Project Phase	Personnel
Baseline biological baseline assessment	Completed to determine the existing presence abundance, habitat use, and nesting areas of fauna.	Once prior to construction	Pre-construction.	Botanical Specialist
Resettlement Areas monitoring	Monitoring to identify where fauna has been resettled on site. Buildings and other infrastructure should be monitored for potential nesting areas.	Monthly	Operation	Resort staff (trained)
Human-Wildlife Conflict	Assess whether the resettlement area poses a health, safety, environmental or operational concern. Determine if there is any aggressive behavior, property damage, guest complaints and health/safety incidents.	Monthly	Operation	Resort staff (trained)

6.2 Proposed actions to mitigate against noise pollution

Increased noise due to construction and operation has potential to impact the surrounding wildlife and communities. The following measures should be implemented to minimize noise impacts.

Construction Phase

Noise nuisance during the construction phase is expected to be low as the site is located within a human altered environment already undergoing varies construction projects adjacent and near to The Project site. To ensure that noise generated by activities remains low and does not disturb the surrounding environment, construction operations should be restricted to daylight hours between 0700 hrs. and 1900 hrs. Any

reason to work outside these hours to speed up the progress of work, advance notice will be given, and specific requests will be reasonably accommodated.

To manage noise impacts during construction hours, contractors shall utilize accepted noise control techniques, such as:

- Maintaining equipment in good working order,
- Implement the use of best available control technologies to reduce noise, such as mufflers and silencers,
- Implement a speed limit to slow vehicles and limit noise generation,
- Turn off idling equipment when not in use.

Operational Phase

Noise impacts are anticipated to be negligible during the operational phase as the surrounding area is already characterized by similar resort and tourism-related developments. Therefore, The Project is not anticipated to increased noise above background levels. Nevertheless, to manage noise impacts the following noise control techniques will be considered:

- Maintaining equipment in good working order.
- Implement a speed limit to slow vehicles and limit noise generation.
- Ensure outdoor entertainment is located away from sensitive areas.

Further, to reduce construction noise the following mitigation measures will be incorporated into the construction work plan:

- Erection of noise berms, fences and barriers as early as possible to provide noise shielding.
- Limit construction activities to normal working hours.
- Equip construction equipment engines with adequate mufflers, silencers, and engine enclosures to reduce their noise.
- Specify the quietest equipment available to reduce noise.
- Turn off construction equipment during prolonged periods of nonuse to eliminate noise from construction equipment during those periods.
- Require contractors to maintain all equipment and train their equipment operators to reduce noise levels and increase efficiency of operation.

- Locate stationary equipment away from receiving properties to decrease noise from that equipment in relation to the increased distance, and,
- Construct temporary noise barriers or curtain walls around stationary equipment.
- Delivery of construction related works materials should be limited to daytime hours only between 8am to 5pm
- Locate machinery that are likely to produce noise as far as practical from neighboring properties
- Limit pickup trucks and other small equipment to a minimum idling time and observe a common-sense approach to vehicle use,
- Sensitize truck drivers to switch off vehicle engines whenever possible.
- Install portable barriers to shield compressors and other small stationary equipment where necessary.
- Comply with the provisions of the Public and Environmental Health Ordinance
- Construction noise is expected but should be limited to daily working hours, which vary seasonally but are typically between 7am and 6pm.
- Adhering to daylight hours will also avoid any need for nighttime lighting in the area
- Continuous monitoring and routine inspections will ensure that all mitigation measures remain effective, reducing environmental impacts and maintaining compliance with Turks and Caicos Islands environmental standards throughout the construction period.

Increased dust levels from construction activities are another nuisance that can be expected during the early stage of construction. Dust levels can be reduced by enclosing and screening the property prior to commencement of earth moving works. Dust nuisance can also be reduced by watering down site at least two times per day.

6.3 Proposed actions to mitigate against changes to natural cycles.

If monitoring identifies prolonged shading, corrective measures will be implemented such as reducing unnecessary shading or shading elements (where feasible), selective vegetation management or adjustment of landscaping where feasible.

6.4 Proposed Actions to Mitigate Against Social and Environmental Impacts of Building Height.

The proposed building height should be managed to minimize ecological impacts; the design should be compatible with the surrounding landscape and minimize visual contrast.

Additional mitigation measures include:

- Maintain building setbacks from coastal habitats to reduce shading.
- Where practice limit building height and mass.
- Incorporate bird friendly designs including reduce use of reflective glazing, and other external shading devices.

6.5 Storm surge analysis and mitigation plan for sea level rises

The Caribbean region is vulnerable to tropical storms and hurricanes each year from June to November. Dramatic and abrupt changes to the coastline can occur because of these storms. In general, coastal protection structures are designed to withstand wave attack from these extreme storm events, e.g., the selection of armour stone size for a coastal structure, or the determination of design wave forces on critical infrastructure from extreme waves. Extreme waves occur infrequently, and decades or centuries of data must be explored to adequately describe the statistics.

For the Atlantic Ocean, detailed information on tropical cyclones, including all hurricanes from 1851 to present, is provided by the US National Oceanic and Atmospheric Administration (NOAA), specifically at the National Hurricane Center (NHC). This database of storm tracks and other parameters was the main source of information describing the individual storms. Figure 76 shows the extracted historical paths of major hurricanes (category 3 and higher) passing within a 300km radius of Providenciales.

Turks and Caicos lies to the north of 'Hurricane Alley', an area of water in the Atlantic Ocean within which hurricanes typically form from warmer sea surface temperatures there. Historical paths of hurricanes in the North Atlantic basin tend to form between latitudes 5°N and 25°N off the west coast of Africa and then track across the Atlantic Ocean. Those formed at the lower latitudes are usually pushed on a westerly track by the north-east Trade Winds, whereas those of the higher latitudes track more to the north and north-west. Multiple storms have impacted the Providenciales coast as it is located where many storms turn towards Florida in the north.

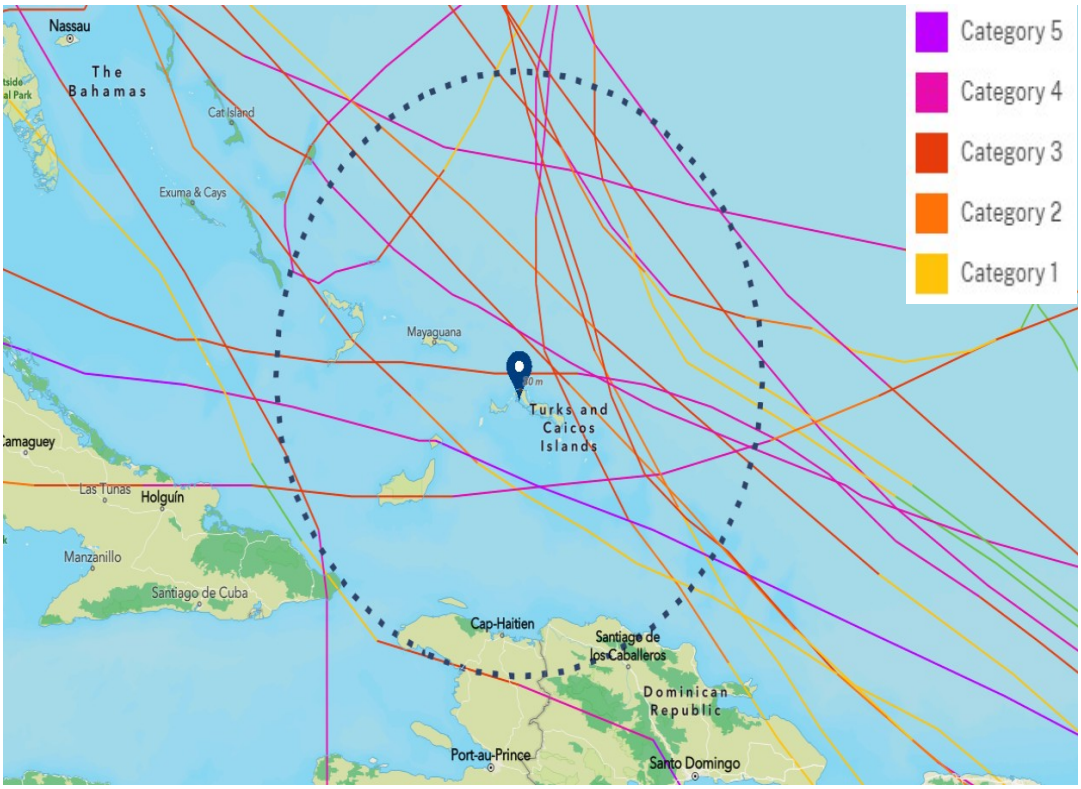


Figure 76 – Major hurricanes passing within a 300km radius of Providenciales from 1950 (Source: NOAA-NHC)

Historical Hurricane Activity

Historical hurricane information from the NOAA's National Hurricane Canter (NHC) database was reviewed (for storms occurring between 1851 and 2025). All tropical storms passing within a 300km radius of the project site were extracted from the database. The results show that from 1851 to 2025, 164 tropical storms and hurricanes have passed within this radius of Providenciales. The total number of storms can be broken down according to the categories described by the Saffir Simpson scale (Figure 77).

The graph shows that the study area was more frequently hit by tropical storms (102) and was affected by hurricanes (62 count) less frequently. Of these 62 storms, 30 storms were major hurricanes. Figure 78 shows the temporal distribution of storms. The graph shows that many years can pass without a major hurricane. The figure also shows that over the last 40 years; there has been a significant increase in the number of storms and the strength of storms. The period between 1995 and 2018 was very active, with many years featuring more than` one storm passing near the site.

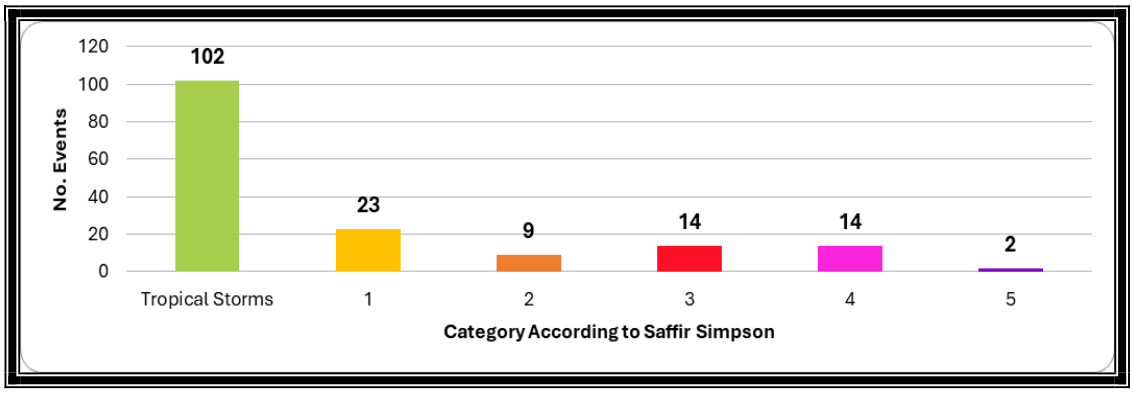


Figure 77 – Storm category distribution since 1851 showing storms that have passed within a 300km radius

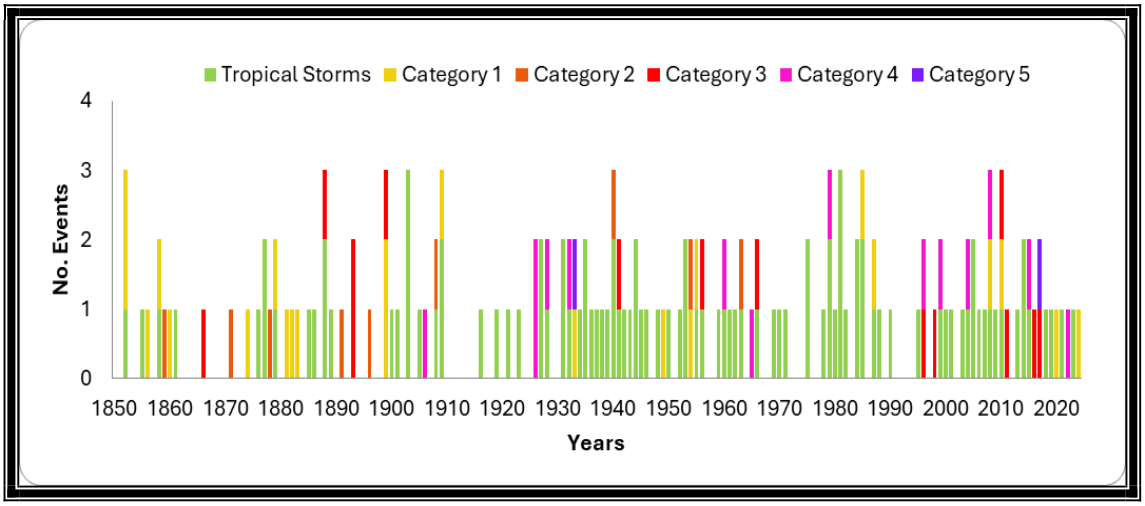


Figure 78 – Annual occurrence of tropical cyclones with 300km of the site since 1851

Offshore Hurricane Waves

Deep-water wave parameters were calculated for each selected tropical cyclone using parametric models (Cooper, 1988; Young and Burchell, 1996). The resulting wave conditions were segmented into directional sectors and fit to a statistical function describing their exceedance probability. The wave parameter values for 50-year and 100-year return periods were determined from the best-fit statistical distribution. Table 43 shows the wave heights, wind speeds, and periods for the directional sectors that would affect the project site.

As shown in the table, the highest waves come from the north-east with deep water wave heights of 12.17m and 13.85m for the 50-year and 100-year storm respectively. The highest wind conditions also came from the north-east. However, the highest deep-water conditions do not necessarily translate to the highest nearshore conditions due to the complex bathymetry, which may induce breaking of waves. MIKE 21 Spectral Wave (SW) and Hydrodynamic (HD) models were used to simulate the interaction of the deep

waters with the bathymetry to ascertain the highest wave conditions in the nearshore of the project site.

Table 43 – Boundary wave and uniform wind conditions used for all investigated return-period simulations

Return Period	Direction	Windspeed (m/s)	Wave height (m)	Wave period (s)
50-Year Storm	West	29.81	8.00	12.23
	North-West	26.85	7.96	12.19
	North	33.27	8.25	12.47
	North-East	**39.35**	**12.17**	**15.93**
	East	34.79	12.00	15.79
	South-East	36.05	11.11	15.04
100-Year Storm	West	33.10	9.14	13.30
	North-West	30.40	9.09	13.26
	North	37.20	9.84	13.94
	North-East	**43.59**	**13.85**	**17.28**
	East	38.51	13.46	16.98
	South-East	36.06	12.57	16.26

Storm Surge Levels

Water levels increase during the passage of a hurricane due to inverse barometric pressure rise (IBR), which is caused by the low atmospheric pressure in the centre of the hurricane. As with the wave heights, water levels were computed from each historical storm and the data fitted to various statistical distributions. Because of the non-directionality of the water level increase phenomenon, the analysis was not carried out on a directional basis. The best-fit distribution was selected based on correlation and goodness-of-fit to the most extreme values. In addition to the extreme eventualities, it is important to consider the expected long-term trends from global sea level rise.

Tidal variations were considered and based on the tide measurements published by the Admiralty Chart, spring high tide above MSL was determined to be 0.40m.

Global Sea Level Rise (GSLR) has been predicted by scientists according to current rates of sea level rise and forecasting of the effects of climate change on the thermal expansion of the seas and the melting of glaciers and polar ice caps. The sea level rise component was obtained by using an averaged version of the IPCC Summary for Policymakers projections for sea level rise for the SSP3-7.0 scenarios. Additional effects such as increased thermal expansion in shallow banks like Caicos Bank were not directly addressed in this analysis. Rather, they were assumed in GSLR projections.

These effects were added to the IBR and the Spring High Tide to produce final deep-water levels for the 50-year and 100-year storm, which are shown in Table 44.

Table 44 IBR and design deep water surface level (m) for all return periods investigated

Parameter	Value 50yr	Value 100yr
IBR - Determined through statistical hind-casting analysis (m)	0.45	0.53
Highest Astronomical Tide (m)	0.40	0.40
Sea Level Rise Component to about 2076 (m)	0.48	0.48
Rate of Sea Level Rise - AR6 SSP3-7.0 Scenario value from IPCC (mm/yr)	*9.5*	*9.5*
SLR Horizon - How long structure is to last (not related to design storm)	*50yr*	*50yr*
Design Deep Water Level considering SLR (m)	**1.33**	**1.41**

Design Criteria

A distinction should be made between the concept design life and the return period of a storm. The design life describes how long a particular structure should last. The return period of a storm is based on long term statistics on storms. Further context comes from the exposure risk of a project component. This describes how likely a given return period storm is to hit over a design life. The probability for typical values is shown below in Table 44. For example, within the next 50 years (project life span), there is an 87% chance that the 1 in 25-year event will occur, a 64% chance that a 1 in 50-year event will occur. A 50-year design life is typical for coastal design and was used for this project.

Table 45 - Exposure risks (%) over a project life span for different return periods

		Design Life (years)			
		25	50	100	200
Storm Return Period (years)	10	93%	99%	100%	100%
	25	64%	87%	98%	100%
	50	40%	**64%**	87%	98%
	100	22%	39%	63%	87%
	200	12%	22%	39%	63%
	500	5%	10%	18%	33%

Nearshore wave transformation of hurricane waves

Previously described deep-water conditions were transformed to the nearshore regions and up to the project site using MIKE21 modelling software. Conditions for the extreme wave climate as listed in Table 43 and the deep-water surface levels

Table 44 were applied to the boundary of the model and transformed to the nearshore from the five main directional sectors – west, north-west, north, north-east and east. Also, the wind fields (magnitude and direction) were applied as a constant over the entire model domain. The wind directions in a hurricane change rapidly, therefore, the worst-case scenario for wind direction was used, with winds approaching from the same dominant direction as the waves.

The coupling of hydrodynamics and waves in the numerical model is an important aspect of storm surge computations, particularly in areas such as the Caribbean where wave set-up is a significant component of the total storm surge. As large waves approach shallow water with steep bathymetry (like Caico's bank) and break, the water level is increased, causing localized currents. These currents and changing water levels affect the waves by allowing them to travel farther inland. To capture the full extent of the possible inundation the two phenomena must be coupled.

For the design storm, the maximum conditions across the five directional sectors tested were calculated and plotted. Results are presented in Figure 77 to Figure 80. Figure 77 and Figure 78 show the maximum wave heights for both, 50-year and 100-year storms respectively. Figure 79 and Figure 80 show the maximum static storm water elevation for both, 50-year and 100-year storms respectively.

Immediately seaward of the reef crest, while wave breaking occurs, the 50-year and 100-year hurricane conditions show similar significant wave heights, generally in the order of 2.0–2.5 m. As the waves propagate across the reef and shallow platform, the difference between the two return periods becomes more evident.

Under the 50-year condition (Figure 79), significant wave heights are reduced to approximately 1m along the project shoreline. Under the 100-year condition (Figure 80), nearshore wave heights remain higher, at approximately 1.5m. This indicates that the reef provides substantial attenuation during both events, although the 100-year condition results in greater wave penetration toward the shoreline.

For the 50-year storm surge condition (Figure 79), modelled static water levels across the project area are generally around 1.7–1.9 m. Under the 100-year condition (Figure 80), static water levels increase to 2m and values of approximately 2.1m occurring along portions of the project shoreline.

Overall, the 100-year hurricane represents the more severe coastal loading condition, combining higher static water levels with increased wave penetration. The resulting combination of storm surge and hurricane waves increases the potential for wave runup, shoreline overtopping and coastal flooding relative to the 50-year event.

Comparison of the existing and proposed conditions indicates no appreciable change in the overall hydrodynamic response within the project area. Current patterns, magnitudes and the associated nearshore response remain essentially unchanged between the two scenarios, with only minor local variations that do not alter the prevailing circulation pattern. The proposed works are therefore not expected to result in a measurable change to the existing hydrodynamic regime.

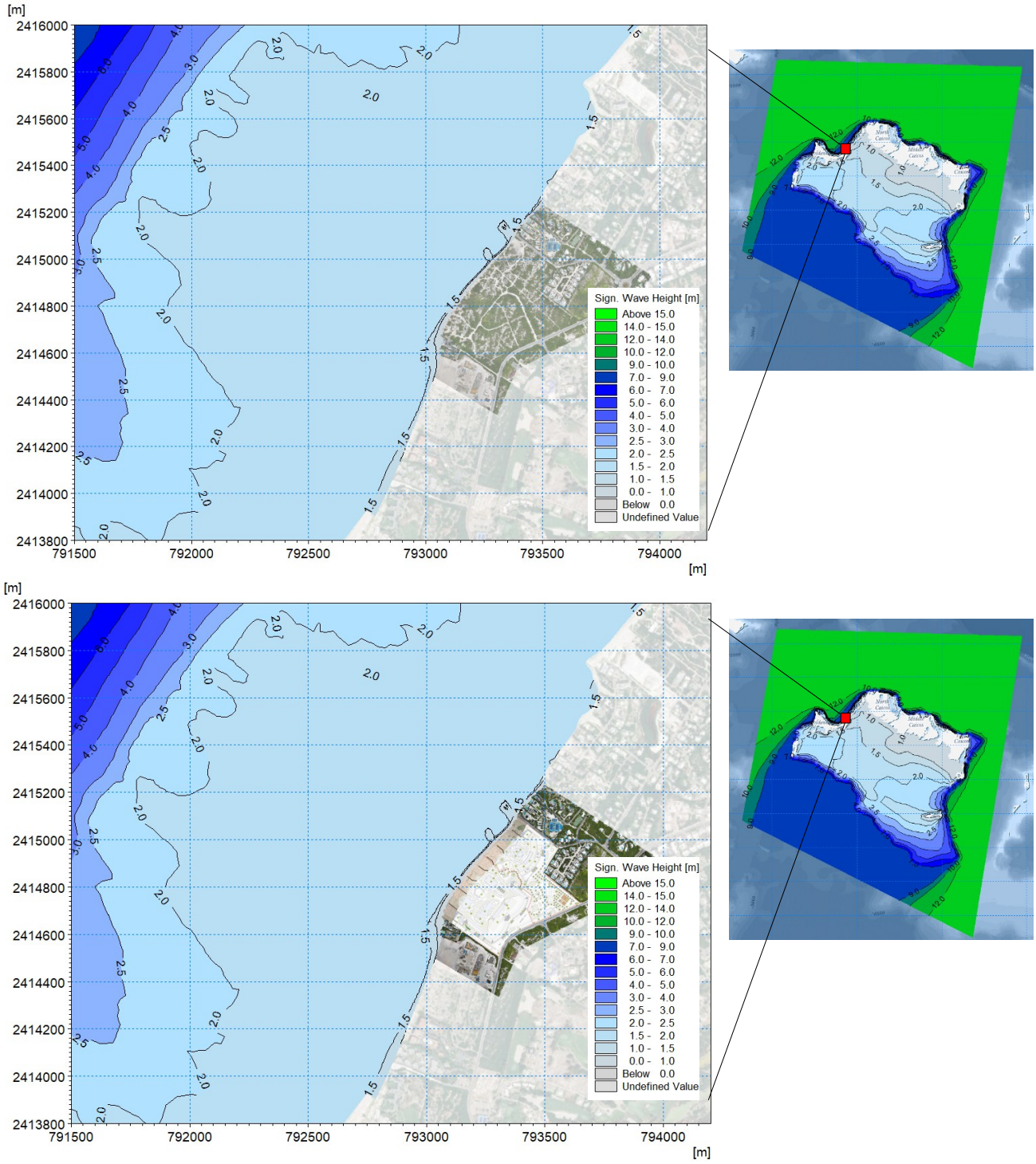


Figure 79 - Storm waves for the 50-year under existing (upper) and proposed (lower) conditions

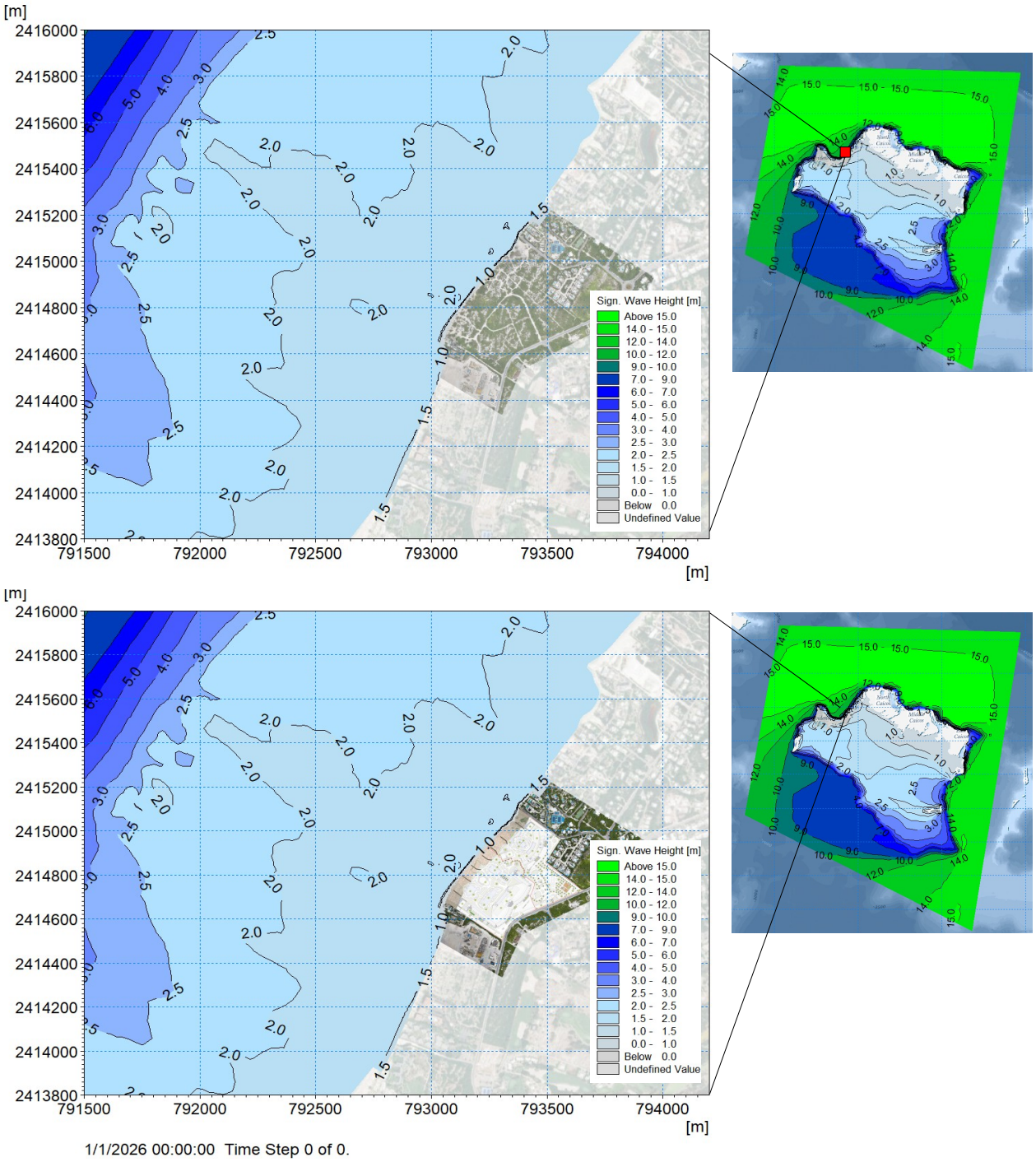


Figure 80 – Storm waves for the 100-year under existing (upper) and proposed (lower) conditions

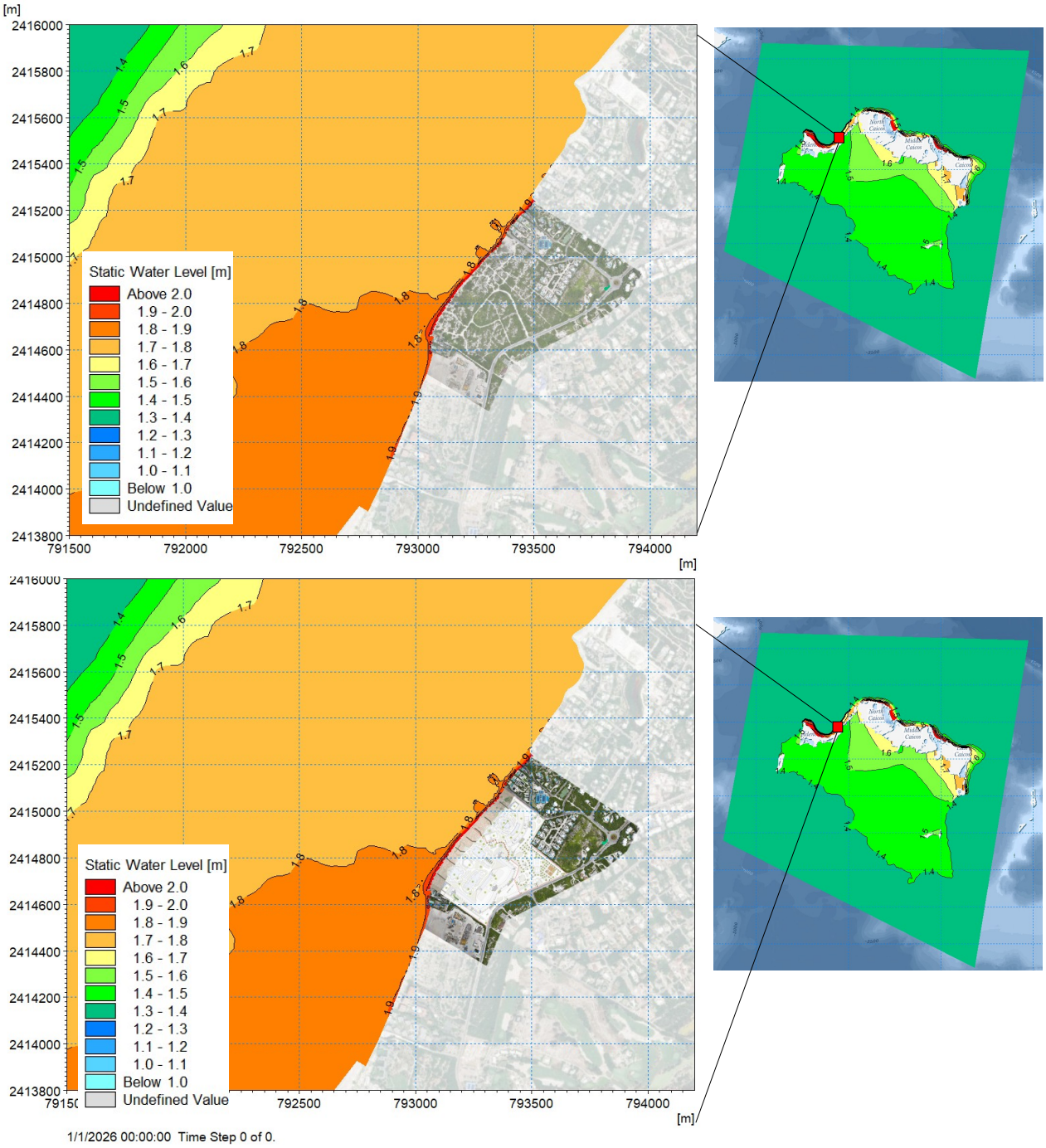


Figure 81 – Storm surge for the 50-year under existing (upper) and proposed (lower) conditions

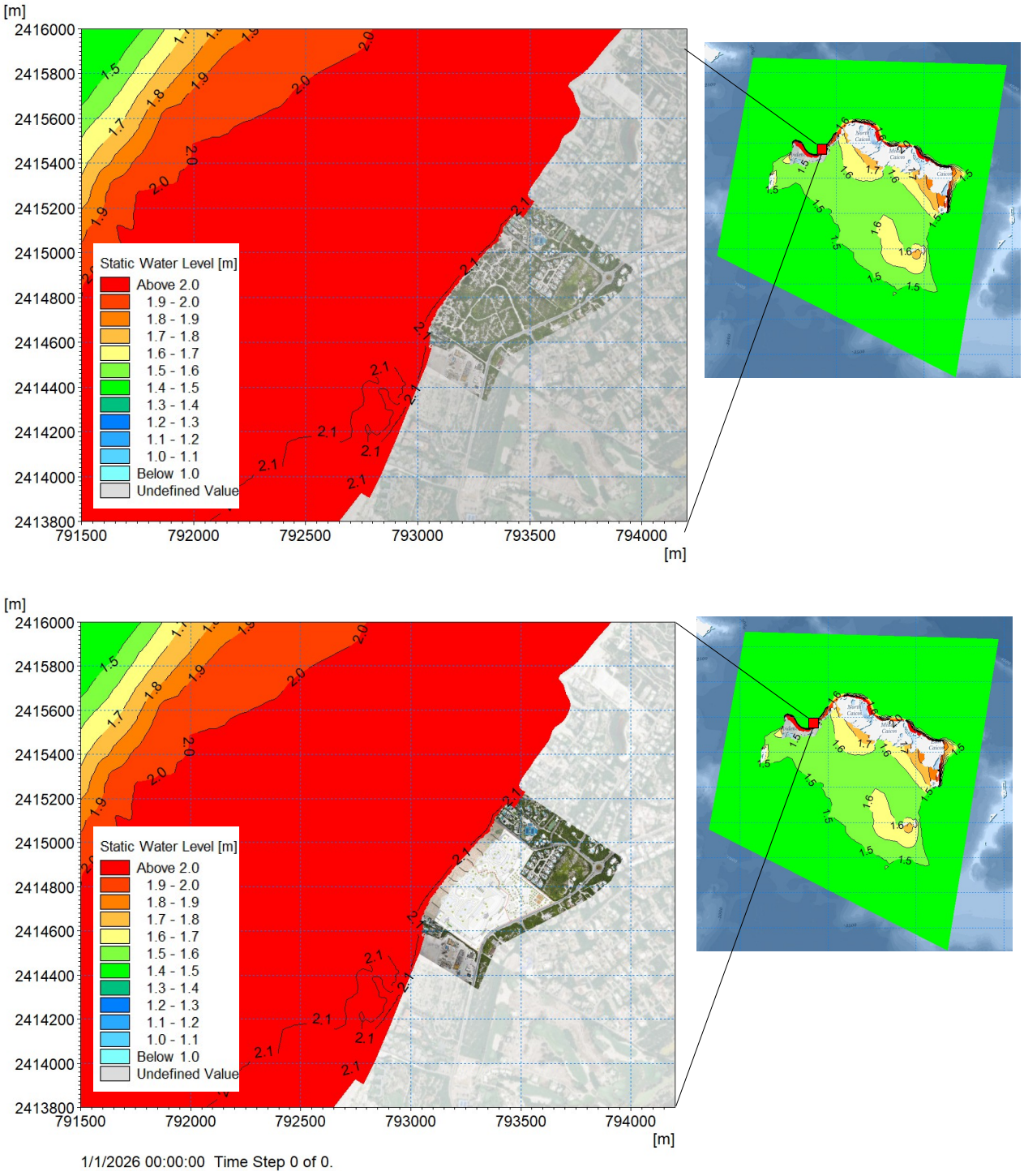


Figure 82 – Storm surge for the 100-year under existing (upper) and proposed (lower) conditions

Wave Run-up Levels

Wave run-up under the 50-year hurricane condition was assessed using the same two-dimensional XBeach model. The 50-year return-period event was selected because it corresponds to the hurricane design condition adopted for the project. A separate 100-year event was therefore not simulated, as the objective of this assessment is to evaluate shoreline response and infrastructure exposure under the established project design condition rather than under a more extreme return period outside the adopted design basis.

For this scenario, the model was forced with an offshore significant wave height of approximately 1.9m, a peak wave period of 12.2s, and a wave direction of ~315°. A constant storm water level of approximately +1.8m MSL was imposed throughout the simulation to represent the elevated water level associated with the 50-year hurricane condition. The simulation was run for three hours, with sediment transport and morphology enabled and morphological updating initiated after the initial model spin-up period.

The hurricane condition produced a substantially more energetic response than the representative swell event. Modeled significant wave heights reached approximately 1.3m under existing shoreline (Figure 82, right).

The maximum modelled wave-runup elevation reached approximately +2.9 m MSL along the existing shoreline (Figure 81, right). Relative to the imposed storm water level of +1.8 m MSL, this represents approximately 1.1 m of additional wave-induced runup. The corresponding runup envelope extended up to approximately 50 m inland in the most exposed sections of the project frontage (Figure 84, left).

The hurricane scenario also produced a stronger morphological response. Maximum modeled erosion was approximately 1m, while localized deposition reached approximately 1.3m (Figure 84, right).

Overall, the 50-year hurricane simulation indicates that the principal increase in coastal exposure results from the combination of the elevated storm water level and hurricane-wave forcing. The elevated baseline water level allows wave action and runup to extend considerably farther landward than under the representative swell condition, while simultaneously generating a stronger sediment redistribution response along the project frontage.

Figure 85 and Figure 86 shows results under proposed conditions. The proposed works are not expected to modify the wave field, maximum runup envelope or the associated erosion and deposition patterns along the Palace Resorts frontage.

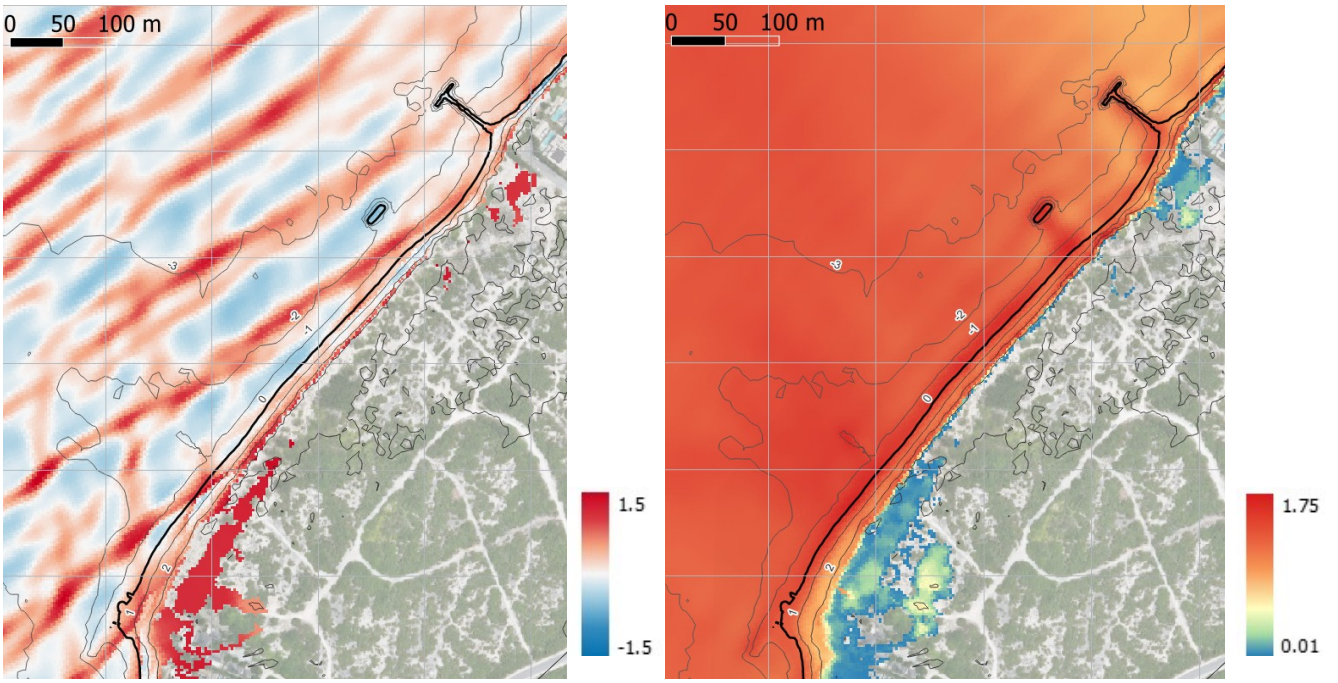


Figure 83 – XBeach 2D results for the selected 50-year storm event showing the modelled water-level field (left) and significant wave height distribution (right) across the Palace Resorts frontage, under existing conditions.

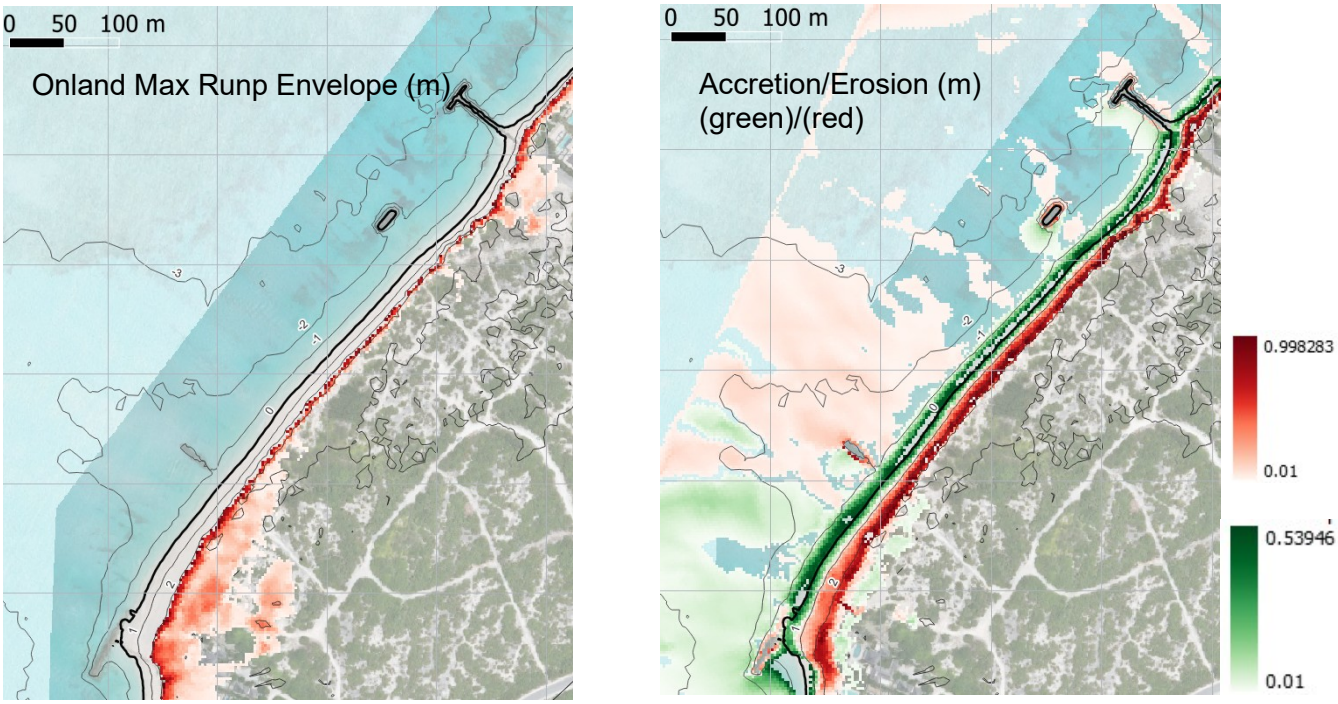


Figure 84 – XBeach 2D results for the selected 50-year storm event showing the maximum wave-runup envelope (left) and modelled bed-level change (right), with green indicating accretion/deposition and red indicating erosion under existing conditions.

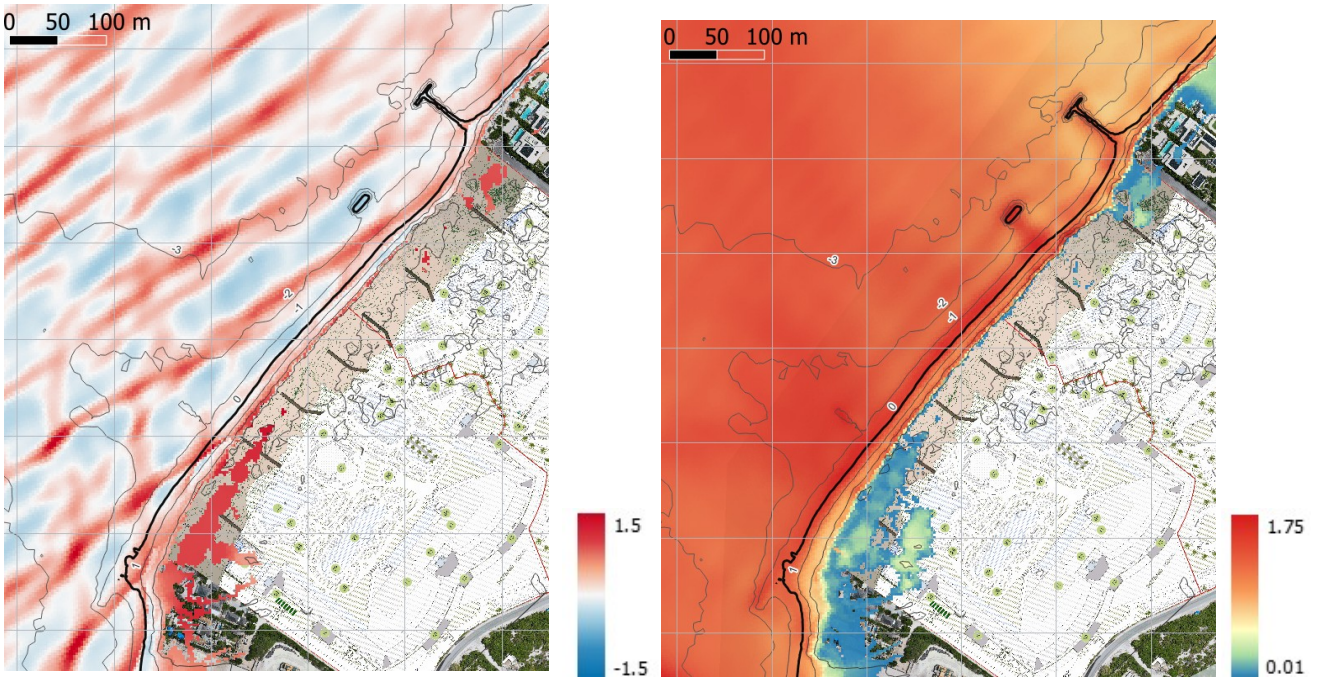


Figure 85 – XBeach 2D results for the selected 50-year storm event showing the modelled water-level field (left) and significant wave height distribution (right) across the Palace Resorts frontage, under proposed conditions.

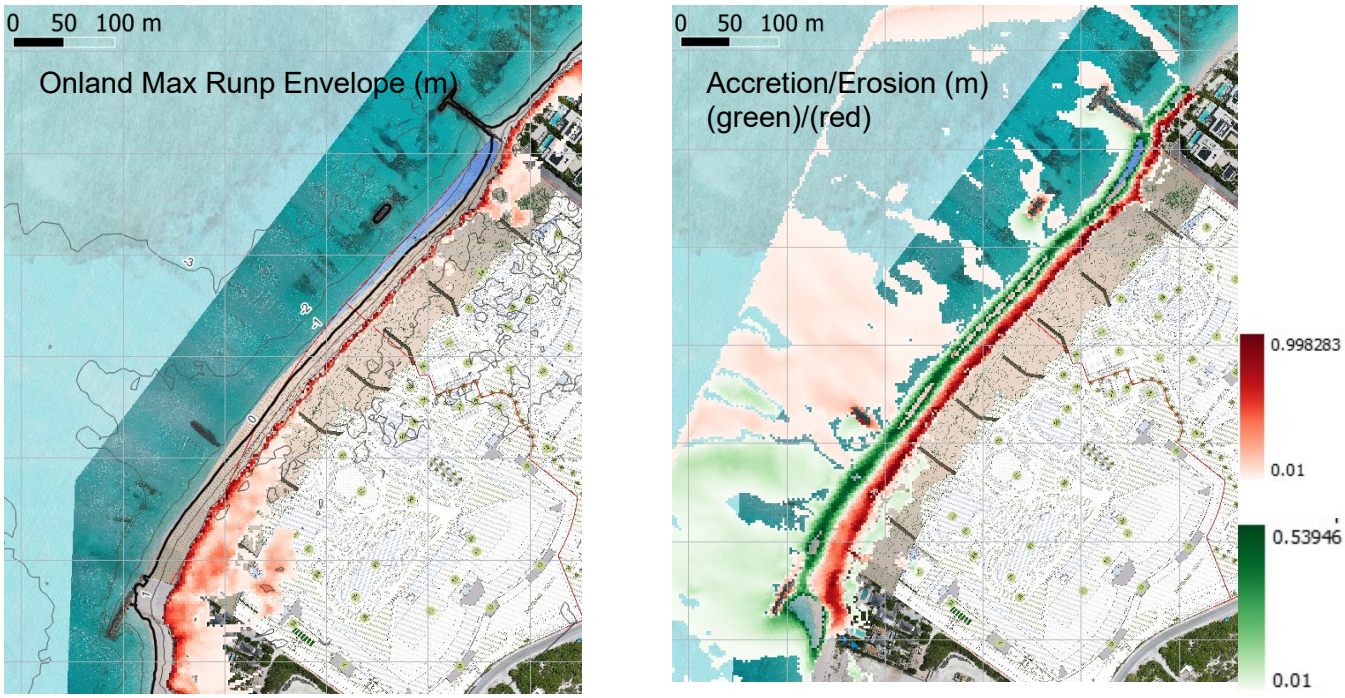


Figure 86 – XBeach 2D results for the selected 50-year storm event showing the maximum wave-runup envelope (left) and modelled bed-level change (right), with green indicating accretion/deposition and red indicating erosion under proposed conditions.

6.6 Building around, or rescue and removal of rare, threatened, and Endangered species of plants

There are no rare, threatened, and endangered species of plants with the Project site.

6.7 Landscaping/replanting plan utilizing native species

It is recommended that the project design and construction teams work with professionals who are knowledgeable about plant species that are native to the Turks and Caicos Islands and that a minimum of 80% of the species and numbers of plants be TCI natives.

A monitoring program should be developed and implemented to maximize the rate of survival for the native plants that are to be salvaged.

Management of the dune system within the required coastal setback limit should entail removal of all; invasive dune-threatening flora (including *Casuarina equisetifolia* and *Scaevola taccada*) and re-vegetation solely with species that are native to the TCI and are on the DECR's list of "Turks and Caicos Islands Dune Vegetation". Due to the existing presence of *Euphorbia inaguaensis,* a species designated by DECR as a Lucayan Archipelago Endemic Plant (See Appendix V – The Schedules) within this zone, it is recommended that it also be allowed to be planted and/or transplanted into the 90m dune setback zone from MHW.

It is recommended that:

- The project design and construction teams work with landscape professionals who are knowledgeable about plant species that are native to the Turks and Caicos dunes and that 100% of the species and numbers of plants be either nursery-grown natives or native dune plants that have been salvaged from the site; and

- A monitoring programmed be developed to ensure that invasive pest plants do not become re-established on the site.

6.8 Proposed techniques and models to mitigate against light pollution, Including impacts on nesting sea turtles and migratory birds

The level of light from construction operation shall be periodically assessed by the Contractor and the Owner in relation to the significance of potential disturbance to reduce the impacts to the surrounding areas/community and wildlife (nocturnal avian

species). Sources of light disturbances should be identified and minimized where possible.

If construction is to occur during hours when enough daylight is not available, and lighting of the work area is required, the Contractor is expected to manage excess lighting and glare by:

- Strategic placement of lights away from residential areas and the beach,
- Tilting lights downwards, and
- Using shielding to restrict the glare of lights.

During operations, the above mitigation measures should also be implemented; they incorporated the above techniques to reduce light on the beach. Additional techniques that can be implemented include:

- Motion sensor light for areas near the beach,
- Tint windows that face the beach.
- Use opaque curtains or blinds after dark to reduce light visible from the beach.

6.9 Proposed Techniques and Models to Mitigate Against Impact of Significant Increase in Human Activity on Beach and Shallow Inshore Areas

Although the nearshore environment is composed of primarily bare sand increased recreational activity can impact the marine environment. While impacts are not expected to be significant the following measures are recommended:

Define Recreational Area

Areas designated for beach access and recreational activities (swimming, wading, sunbathing) should be outlined. These areas should be located away from sensitive environments where practical. Visitors should be encouraged to use designated footpaths as well as stay within recreational areas.

Visitor Education

Guests should be informed about the existing ecosystem and potential impacts that can occur from irresponsible recreational use. Guests and visitors should also be informed on ways they can reduce their ecological footprint and protect the surrounding biological environment. Signage and important information should be erected or distributed outlining ways to mitigate impacts of human activity in the coastal and marine environment. This can include:

- Proper disposal of waste.
- Use of reef safe sunscreen.
- Use of designated footpaths.
- No feeding, harassing, collecting, or killing of wildlife.

6.10 Proposed techniques and models to mitigate against increase traffic demands on adjacent and main tourism transit corridor between Providenciales International Airport and along Leeward Highway.

The Moon Palace recommends Transportation Demand Management (TDM) techniques to reduce the traffic impacts on Leeward Highway. These could include a formal shared van service to and from the airport for Moon Palace patrons.

6.11 Proposed Climate Change mitigation both locally with in the Turks and Caicos Islands and Globally

Climate change was considered by applying a projected sea-level rise of 0.48m in the 50-year storm scenario. The corresponding storm water level from MIKE 21 was approximately +1.77m MSL. A second scenario removed the sea-level-rise allowance, giving a storm water level of approximately +1.29m MSL. Both water levels were applied in XBeach to compare shoreline conditions with and without projected sea-level rise.

The modelled wave height at the shoreline was approximately 1.3m in both scenarios. With sea-level rise, however, the maximum wave-runup elevation increased from +2.6m to +2.9m MSL, maximum erosion depth increased from 1.0m to 1.3m, and the inland extent of inundation increased from approximately 23m to 50m (Figure 85 and Figure 86). Table 46 summarises these differences.

Table 46 – Differences between the model results with and without SLR

Parameter	Hurricane Simulation with SLR	Hurricane Simulation without SLR
Wave Height at Shoreline (m)	1.3	1.3
Maximum Erosion Depth (m)	1.3	1
Maximum Wave Runup (m above MSL)	2.9	2.6
Inundation from Shoreline (m)	50	23

The comparison shows that excluding projected sea-level rise would underestimate the modelled extent of inundation and wave runup at the project shoreline.

Figure 87 and Figure 88 show the corresponding results under proposed project conditions. Comparison with the existing condition indicates no significant change in the overall wave field, maximum runup envelope, or erosion and deposition patterns.

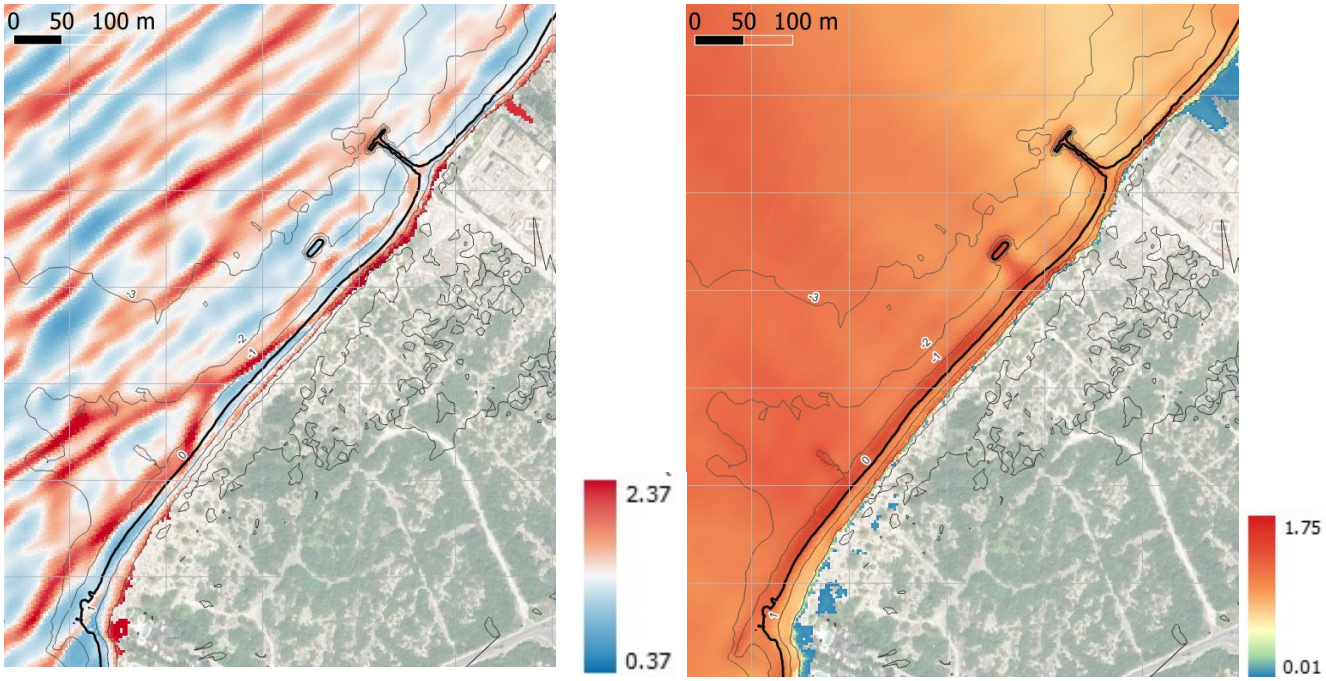


Figure 87 – XBeach 2D results for the selected 50-year storm without considering sea level rise event showing the modelled water-level field (left) and significant wave height distribution (right) across the Palace Resorts frontage, under existing conditions.

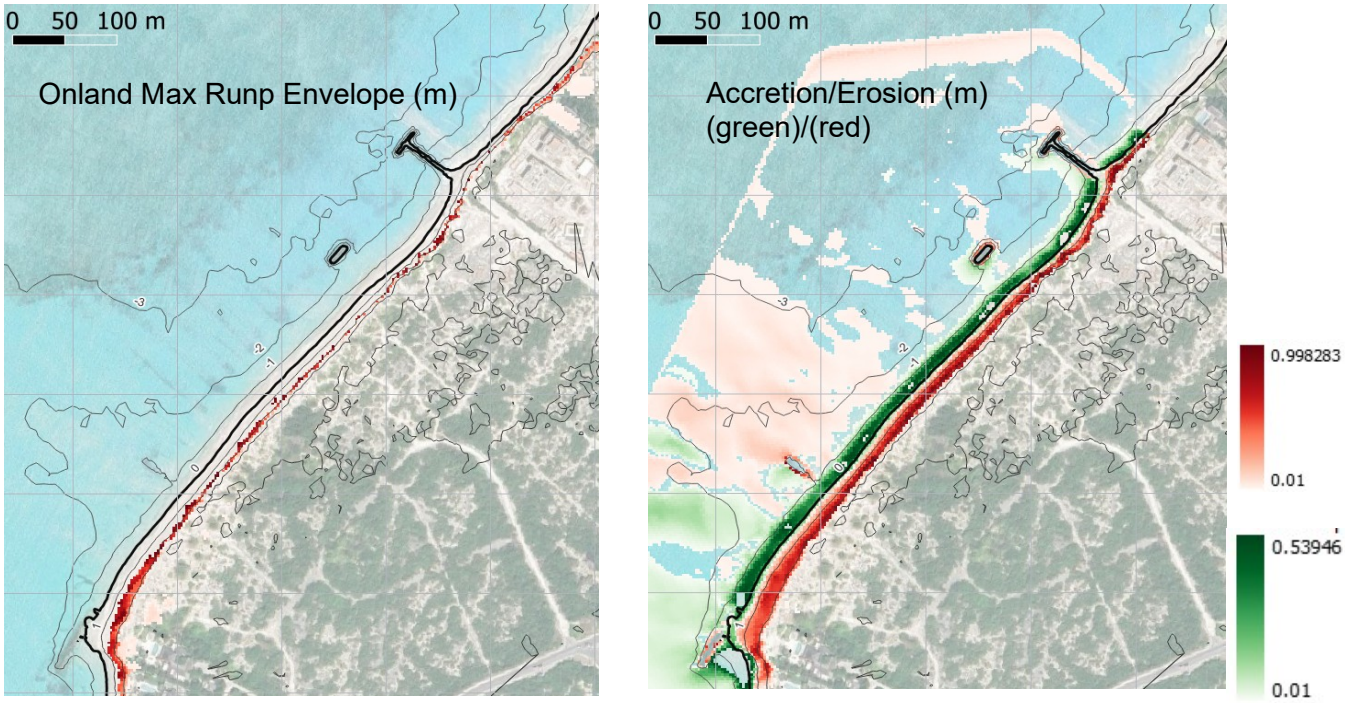


Figure 88 – XBeach 2D results for the selected 50-year storm event without considering sea level rise showing the maximum wave-runup envelope (left) and modelled bed-level change (right), with green indicating accretion/deposition and red indicating erosion under existing conditions.

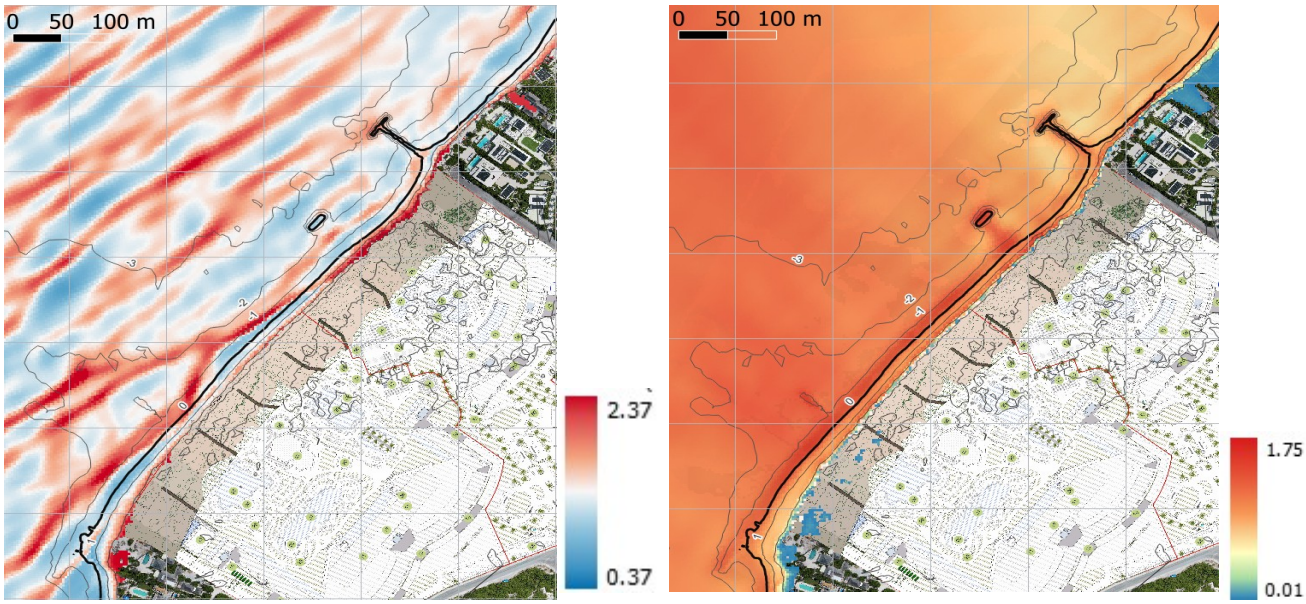


Figure 89 – XBeach 2D results for the selected 50-year storm event without considering sea level rise showing the modelled water-level field (left) and significant wave height distribution (right) across the Palace Resorts frontage, under proposed conditions.



Figure 90 - XBeach 2D results for the selected 50-year storm event without considering sea level rise showing the maximum wave-runup envelope (left) and modelled bed-level change (right), with greenindicating accretion/deposition and red indicating erosion under proposed conditions.

6.12 Financial resources for mitigation

Financial obligation for mitigative measure belongs with the Developer. The developer is responsible for ensuring at all mitigation and monitoring efforts are funded and in place before work begins. This is inclusive of mitigation measure outline in the contingency plan.

Impacts of the proposed development can be divided into project impacts and process impacts. Project impacts are associated with project design and mitigation of project impacts is firmly rooted in the Planning and Environmental Impact Assessment process. Process impacts are associated with the actual construction process, and the mitigation of these impacts is the effective management of the construction process.

The coastal marine environment coral reef ecosystems in the Turks and Caicos Islands are vulnerable environmental resources that provide significant economic goods and services to the economy. The health of these ecosystems is critical to human well-being; they contribute to the livelihoods, food security and health of local people. The proposed Romanza on Grace Bay Residences development (Townhouse and condominium units) and all other associated tourism-related businesses within the Grace Bay tourist district benefit directly from these marine ecosystems. Therefore, it

is imperative that developers take due care of the environment during both the construction and operational phases of development.

Construction management will ensure that Best Practices Construction Methodologies are employed by the contractor carrying out the proposed construction works. The best technical mitigation measures are to include selection of the most suitable construction equipment.

Several mitigation measures aimed at minimizing the impact of the proposed construction works on both the marine and terrestrial environments will have financial cost to the developers and economic value to the process, they are summarized in table 47 below:

Table 47 – Summary of economic cost for recommended mitigation measures

Recommended Mitigation Measures	*Approximate Cost*
Landscaping uses native salt-tolerant and drought-tolerant species.	Included in the landscaping budget.
Properly operated and maintained sewage treatment package plant to avoid effluent spillage.	Included in operation budget.
Annual follow-up testing of water quality in the near-shore area, to ensure that secondary impacts on water quality do not occur.	Estimated at $75,000.00.
Use of organic fertilizers in landscaping.	Included in the landscaping budget.
Reduce, reuse and recycle components of solid waste to reduce the volume of solid waste that goes to the landfill.	Included in operational budget.
Use of grey water for landscaping purposes.	Including in the landscaping budget.
Enclosure and screening of Construction site.	Included in hoarding budget.
Reduction of construction related noises by installing mufflers on engines, substituting quieter equipment of construction methods.	Included in construction budget.

Avoid project delays due to the availability of building inspectors for timely inspections, by the appointment of Special Inspector.	Estimated at $150,000.00 annually.
Dune restoration and filling work	Estimated $ 500,000.00
Surge protection alternatives	Estimated $500,000.00

6.13 Environmental monitoring and financial requirements

From practices at its other resorts, Moon Palace has the experience, know-how and capacity to carry out comprehensive monitoring of all relevant and necessary areas in consultation with the required TCIG Departments and agencies.

The environmental management programme should be established to ensure all development comply with the Approved EIA and applicable legislation of the Turks and Caicos.

Environmental monitoring should commence during preconstruction and should continue throughout the construction and operational phase. Monitoring activities should be carried out in accordance with the monitoring schedules outlined in Section 6.1. A qualified Environmental Monitor should be appointed to oversee the monitoring program. Monitoring results should be documented inclusive of non-compliance, corrective actions and recommendations. These results should be presented monthly to relevant regulatory agencies.

Financial Requirements

The environmental budget should cover the following:

- Pre-construction ecological surveys.
- Environmental monitoring personnel and qualified consultants.
- Terrestrial and Marine Wildlife Monitoring and Relocation (if necessary).
- Water Quality Monitoring.
- Dune and Coastal Vegetation Monitoring.
- Invasive Species Management.
- Relocation of native species.

- Sediment control measures.
- Fuel Spill prevent measures (example spill kits).
- Design changes to minimize glare, bird collisions and shadow cast.
- Provisions for unseen environmental incidents and emergency response.

Pre-Construction Phase Monitoring

Pre-construction surveys should be conducted to establish a baseline for subsequent surveys, both during construction and post-construction events. Both turtle nesting and avian nesting surveys should be conducted on the beach before construction starts to ensure the beach isn't being utilized.

Construction Phase Monitoring

Due to activities occurring adjacent to the PNAP, the EM will be required to conduct construction monitoring during the swim zone's construction. The EM will organize to have the original qualitative assessments repeated. An inspection of the benthic features within one hundred (100) meters of The Project site will be carried out. Any changes to seagrass beds, fish counts, sediment levels, or substrate will be documented.

Both turtle and avian nesting surveys should be conducted during construction activities to ensure the beach isn't being utilized for that purpose. If a turtle or avian nest is observed, the area should be marked off and not disturbed by staff. The Department of Coastal Resources should be contacted for guidance on further steps to be taken.

Post-Construction Phase Monitoring

Due to activities occurring adjacent to the PNAP, the EM will need to conduct post-construction monitoring to assess marine wildlife and water quality. Monitoring during the post-construction phase of The Project will include repeating the coastal assessment from the shoreline to one hundred meters (100 m) seaward to ensure wildlife is not impacted by the development.

Financial Requirements for Environmental Monitoring

The developer has a financial obligation for mitigation measures. The developer is responsible for ensuring that all mitigation and monitoring efforts are funded and in place before work begins. This includes mitigation measures outlined in the contingency plan.

Table 48.0 – Summary table describing impacts

No.	Environmental Parameter	Potential Impacts
1	Terrestrial flora	No floral species that are endemic to the TCI were observed on the site. Several species of Lucayan Archipelago Endemics and Native Plants of Special Conservation Concern were observed to be present on the site
2	Terrestrial fauna	Direct and secondary impacts are likely to involve reductions in prey items, and therefore reduced nesting productivity for birds and temporary reductions in plant abundance.
3	Ground water resources	No changes to regional hydrologic conditions are anticipated, including water quality and the condition of groundwater resources within the region.
4	Beach – sand dune system	Plants within the dune system will be damaged or destroyed when the revetment is installed and the ground surface raised. After replanting impacts on the dune should be minimized by the placement and use of the dune walkovers which should prevent long term trampling of the dune by beach goers.
5	Wetlands	No wetlands were present on the property.
6	Traffic	Increased volume of vehicular traffic in the area.
7	Sewage & solid waste Facilities	The development will result in increased volumes of sewage and solid waste to be disposed of in the landfill.
8	Noise	The most prevalent noise source at the project's site would be from internal combustion engines, earth moving equipment, material handling equipment, and stationary engine-powered equipment.
9	Air quality	The project will produce several sources of air pollution including exhaust from hauling equipment, booster pump engines, concrete

		trucks and other devices used in the construction of the facility.
10	Neighboring developments & businesses	Direct and indirect impacts on the physical and visual qualities of neighboring developments and businesses are expected.
11	Marine-life on intermittent hard substrate	No development is proposed within the marine environment; therefore, no direct impact is expected. However, indirect impacts are expected from guests using the marine environment for swimming, snorkeling and water sports activities.
12	Coastal water quality	The test results indicate no elevated level of constituents and no evidence of enrichment or pollution.
13	Fisheries	No submerged aquatic vegetation or barren bottoms are proposed to be affected, so adverse impacts on fisheries are expected to be non-existent.

6.14 Public Consultation/Social Listening/Monitoring

Public Consultation with relevant stakeholders is important in helping decision makers to understand their views, values, interests, issues, and concerns about the proposed development and to incorporate them into decisions. Moon Palace Resort Developers should hold a public consultation on the draft EIA to present the purpose of The Project, the objective of The Project, the scope of works, findings of the baseline data, monitoring program and outline the possible impacts and mitigation for works. The meeting should be in a public location during a designated time and include stakeholders such as tourist, surrounding businesses, water sport operators, residents, relevant Government Agencies, Non-Governmental Organizations, and any other groups that has a stake in The Project.

Once the logistics of the meeting are determined, the public should be made aware of when and where the meeting is occurring. Adds should be placed in media sources such as the newspaper, on television, on the radio and on social media platforms at least 14 days in advance.

During the meeting minutes should be taken and a form and/or email should be provided where stakeholders can submit their comments, questions, and concerns

about The Project. The Project should incorporate the answers to these comments and concerns in the final draft of the EIA.

6.14.1 During the Construction Phase

During the construction please of the Moon Palace resort development the Environmental Project Manager (EPM) will inform the public of construction operation hours and of any temporary road closures that make become necessary to facilitate the progress of the development.

6.14.2 During Operation Phase

Once the resorts shift from construction to operational phase, the public outreach will transition to The Palace Company's corporate social responsibility arm (CSR). The outreach committee will focus on local health, local environment and community wellness issues. The public will be informed of sustainable employment opportunities through job-fairs, on-stie visits and the media.

6.15 Environmental Monitoring and Management Plan (EMP)

An Environmental Management Plan (EMP) is the operational roadmap that translates the findings of the Environmental Impact Statement (EIS) into daily, actionable rules.

This section of the report outlines the Environmental Management Plan (EMP) for the proposed Moon Palace Resort Development. Its purpose is to ensure that the construction and operation of the hotel and associated facilities are carried out in an environmentally sound manner that meets or exceeds the standard adopted by the Turks and Caicos Islands Government (TCIG) and are in accordance with the anticipated impacts as identified in the Environmental Impact Assessment (EIA) for this development.

6.15.1 Summary of Potential Impacts of the proposed development

Environmental Impacts are classified as avoidable, unavoidable, reversible, irreversible, direct, indirect, requires mitigation, and does not require mitigation. A summary of perceived potential impacts is presented in Table 49/

A summary of the potential coastal impacts is presented in

Table 48 The table identifies whether impacts are expected at the project size, within a 500m area or may extend indirectly within the wider 5km zone of influence.

Table 49 – Potential environmental impacts at the project site

Potential Impact	Project Site	500m Radius	5km Radius	Short	Long	Significance of Effect
Impacts on average waves in the area						No Impact
Impacts on average tidal currents in the area						No Impact
Impacts on erosion or accretion processes			X		X	Negligible (Natural coastal processes)
Impacts from storm waves in the area		X	X	X	X	Negligible (Existing coastal process)
Impacts from storm inundation in the area		X	X		X	Moderate (Climate related vulnerability)
Impacts on terrestrial flora and fauna	X			X		Negligible
Impacts on dune ecosystems and coastal habitats	X	X		X	X	Negligible
Impacts on marine benthos						No Impact
Impacts on nearshore water quality from runoff and sediment transport	X	X		X		Negligible
Potential impacts from accidental spills or contamination	X	X		X		Negligible
Impacts from windblown debris and marine litter	X	X	X	X	X	Negligible
Impacts from dust deposition on coastal and marine assets		X	X		X	Negligible
Impacts from increased human use of coastal resources		X	X		X	Negligible
Impacts associated with climate change and sea level rise		X	X		X	Moderate (Climate related)

6.15.1.1 Impact on dune areas from construction activities

Dune monitoring should be implemented across the pre-construction, construction, and post construction phases of The Project to assess changes in dune vegetation, habitat condition and pedestrian disturbance.

Given the existing recreational use of the beach the Monitoring Program should focus on determining the project related impacts from the existing background and natural seasonal changes of the dune

6.15.1.2 Impact on beach areas and sand from construction

Since no infrastructural work is proposed for the marine environment impact on the beach will come mainly from guests using the beach. Disruption of the property's dune system will be minimized by the construction of 8 boardwalks to facilitate foot-traffic over the dune system. Additionally, the dune system will be stabilized by extensive landscaping of the reserve setback area with native vegetation

6.15.1.3 Impact on groundwater and inshore water from effluent

Saltwater encroachment will be monitored. When salinity measurement exceeds the freshwater threshold of 600 parts per million the groundwater abstraction regime will be modified to reduce the impact on the freshwater lens. Salinity measurements greater than 1200 parts per million will cause the groundwater abstraction regime to be shut down and rest until salinity measurements return to measurements below 600 parts per million.

Additionally, nutrient loading will be closely monitored to ensure that individual parameters are kept within satisfactory limits. Any parameter(s) exceeding satisfactory limits will cause the application of fertilizers to be modified to reduce the negative impact.

6.15.1.4 Impact from invasive species including plants used in landscaping

No invasive plant species should be replanted on the property, and monitoring will be performed to prevent the intrusion of invasive species.

6.15.1.5 Impact on sand flats, seagrass beds, and shallow inshore reefs

The offshore environment has greater ecological values and sensitivity, particularly the seagrass areas and the hardbottom habitats that contain large corals and a high diversity of fish and invertebrate species. These habitats are nursery sites, act as carbon storage, and biodiversity hotspots. This area will remain intact providing full ecosystem services as there are no marine works and the area will not be utilized by recreational beachgoers.

6.15.1.6 Impact to Island-wide Traffic Patterns

TDM strategies such as pedestrian improvements near Moon Palace to encourage foot traffic, and information on bicycle rentals for tourists. Moon Palace will have many employees and therefore, the resort could provide subsidies for employees for the use of bicycle rentals to facilitate travel to and from work via non-automobile mode of transportation.

6.15.1.7 Impact on general population from significant and sudden increase in population

The proposed Moon Palace development brings thousands of direct and indirect jobs and a significant economic boost to the economy of the TCI, but it also brings a sudden influx of workers and visitors necessary to build and operate the twin-resorts at a scale that introduces intense pressures on the local population. The primary impacts on the general population range from strain on the existing infrastructure, housing availability and shifting demographics.

Providenciales already face traffic congestion problems on the island's primary and secondary road system, adding thousands of daily Moon Palace Resort staff commutes, and guest transfers will worsen the situation unless stringent mitigation measures are not taken.

In most cases public utilities, including electricity, water and solid waste management, the proposed development will place extreme pressure on the delivery of these services. It will also place increased pressures on healthcare services.

The country's main gateway to the world, Howard Hamilton International Airport that already cannot adequately handle the high traffic volume, will immediately experience a surge in visitors' arrivals. TCIG expansion plans for the island's main intergenerational airport should be rescoped to accommodate the additional passenger traffic that the Moon Palace twin resorts will bring.

Most of the labour force needed to manage the all-inclusive twin resorts will need to be brought in, which will drastically increase the current population. TCIG's current population policy study that is underway will have to take into consideration the rapid influx of population because of the proposed meg development.

6.15.2 Description of the recommended mitigation measures

Mitigation measures should focus on maintaining existing environmental conditions and reducing potential indirect pressures on coastal and marine assets. These measures include:

Dust nuisances: The storage of materials and equipment will be within the confines of the parcel boundaries and placed to the center of the property to the greatest extent possible. Hoarding will be erected along all the property boundaries. Densely planted tall trees will be planted from inception of the project and along the property boundaries, in the vicinity of the beach access lane and Sunset Beach Villas, to screen

these areas from the development and any dust nuisances. Consideration will be given to the unsightly storage of equipment and/or machinery, which may appear injurious and/or unsightly. An effort will be made to store equipment and/or machinery away from the boundaries of adjoining properties. Stockpiling of any materials including aggregate and sand will require regular wetting to prevent any dust nuisances to the adjoining properties.

Noise Nuisances: Construction hours will be limited to starting not earlier than 7:30am for noise generating equipment and/or machinery and finishing not later than 6:30pm. During Sundays, noise generating equipment will be strictly prohibited. Unabated noise nuisances during operation can be resolved through the Police (911) 24/7 rapid response. Alternatively, a working group should be established as a community liaison and incident response team; it should consist of residents from the neighbouring community and senior level managers from the resort to deal with these kinds of incidents. Additionally, formal complaints can be filed through legal and regulatory channels such as the Departments of the DECR, Planning, and Environmental Health. These responsible government agencies can deploy equipped enforcement officers to the property.

Waste Disposal: All waste generated during construction, whether from daily food and beverage consumption by those working at the site or construction waste, will be containerized and disposed of at the public landfill site daily. A lidded refuse bin will be provided and easily accessible to workers with clear instructions for immediate disposal. Inspections will be made at the end of the day by the Contractor to ensure that no waste is left behind on the jobsite, especially near the coastal environment. Solid waste debris is often problematic on construction sites and of particular concern when working within proximity to the marine environment due to the increased incidence of debris either blowing or floating away. Not only is it not aesthetically pleasing when it washes up on our shores but can injure and kill marine organisms if they ingest it or are inadvertently trapped somehow in the waste. No hazardous materials or substances will be used for the construction. Oil changing and similar servicing of vehicles will only take place off site. If refueling or additional oils are needed for construction equipment or machinery, the containers will be collected, bagged, and disposed of separately at the public landfill facility. There will be zero tolerance for any waste being disposed of in the terrestrial, marine, or coastal environments.

Visual Impacts: The architectural design and finish colour along with the planting of trees, will mitigate these impacts.

Beach access: To encourage residents to continue using the beach, facilities that would enhance the beach user experience must be installed on or near the beach access lane, including but not limited to seating, toilet facilities, and showers, to be maintained by the proposed resort.

Maintenance of unobstructed movement along the beach: The DECR and Planning must approve the number, design, and sitting of any beach furniture and any shade structures or small cabanas to be used for towels and tour operators.

Prevention of a housing crisis on the Island: The developer must acquire land for staff housing for the entirety of foreign labour to be imported for construction and operation of the proposed development.

Limiting stress on local health, welfare, and social services: This resort community could `be served separately from the local population by having a clinic within the resort. During construction, a temporary mobile clinic could be used.

Demographic Change and Culture Dilution: Due to the massive influx of foreign labour, a rigorous framework of labour protections, cultural integration policies, and local economic mandates, like "Belonger First" must be enforced to protect the local identity and balance economic growth. Before the resort can apply for a single foreign Work Permit, it must advertise all positions locally through the TCI Labour Department and private agencies for a stipulated period of at least one (1) month. For any specialized management or executive roles initially filled by foreign expatriates, the resort is legally required to submit a formal Succession Plan. This plan outlines how local employees will be trained over a 3-to-5-year period to permanently take over those leadership roles.

Disaster Preparedness: The Contractor will always be at a high level of emergency preparedness and readiness to deal with accidents, evacuation in the event of a storm, and any other major incidents. The emergency plan will include the establishment of a network of communications with Police, Medical, Ambulatory and Fire Services during construction and operation of the proposed development. A full mobile clinic or nursing station will be opened during the construction phase of the proposed development. A First Aid Kit will be permanently kept on the construction site in a strategic location easily accessible to all workers.

At the end of each day during construction, the gate will be locked in place at the entrance to the site to prevent unauthorized access and for security reasons. The building contractor will be held to best practice performance requirements.

Fire extinguishers will be fixed on all heavy machinery, i.e. tractors, bulldozers and trucks in the unlikely event of a fire. Appropriate instructions about fire risks must be given to all construction staff prior to commencement of construction. There will be no hazardous materials, waste, fuels, lubricants, or substances stored on the construction site or in the vicinity. All vehicles, equipment and machinery will be refueled by a fuel/maintenance truck owned and operated by the Contractor, which will be called to the construction site on an as needed basis. There will be no contamination or pollution of soil or water.

Water Quality – Major ion analysis, tracking salinity levels, tracking nutrient levels

Noise Pollution – Restricting working hours between 7:00am to 4:00pm and no work on Sundays and Holidays.

Table 50 below summaries the potential biological impacts and mitigation.

Table 50 – Summary of biological Environment Impacts and Mitigations

Significant Aspect and Impact	***Impacts***	***Mitigations***
Construction Phase		
Noise	Disturbance to terrestrial biodiversity surrounding the site	• Limited work to daylight hours.
	Disturbance to marine biodiversity surrounding the site	• No mitigations are required.
Lighting	Disrupt natural process and disturb/harm marine life (such as turtle hatchlings) and avian species	• Proper light management plans should be established. • Tilt light away from sensitive areas • Use shades where necessary
Water Quality	Fuel, Oil and Chemical Spills during construction.	• No hazardous substances will be permitted to escape into the exposed groundwater at the work site. • All fuel and oil spills will be cleaned up as per the Fuel Spill Prevention Plan. • Spill Kits will be located on all machinery and at designated

Significant Aspect and Impact	Impacts	Mitigations
		areas on-site. • Equipment on site will be well-maintained. All leaking equipment will be removed from the site and repaired before being brought back on-site.
Solid Waste	Increase in terrestrial and marine debris. This may cause entanglement of fauna (specifically seabirds), introduction in diseases, increase of fauna ingesting debris and a smothering of both terrestrial and marine habitats.	• A proper waste management system should be created. • Any material or equipment that is blown into the water should be retrieved at the earliest convenience, in a safe manner. • Sufficient waste bins should be provided on site. Waste bins should have lids to ensure domestic waste does not enter open water. • Waste should be recycled before entering pre-approved landfill. • Construction waste should be reused on site where feasible.
Vegetation	Disturbance to biodiversity surrounding the site. Habitat degradation	• Native species that can be reused in the landscaping pallet should be removed prior to land clearing. • All invasive species will be removed according to the Invasive species Management Plan
	Fire that can cause habitat degradation	• Fire control protocols outlined in the Fire Control Pan should be followed. • Fire Prevention tools (extinguishers) should be resent onsite.
Wildlife	Disturbance of terrestrial wildlife	• Wildlife not within the direct footprint of work should not

Significant Aspect and Impact	Impacts	Mitigations
		be disturbed. • Wildlife encounters during construction should follow the wildlife management plan.
	Disturbance of marine wildlife	• No marine wildlife should be disturbed during work. • Encourage the use of sunscreen
Dune Ecosystem	Increased Turbidity	•
	Removal of vegetation within the direct footprint of works. Trampling of vegetation	•
Post-Construction		
Water Quality	Decreased in water quality	• The area is currently being used for recreational activity.
Storm water Runoff	Decrease in water quality Impacts to marine ecosystem	• Drainage systems will be designed to minimize discharge, erosion and sedimentation transport
Terrestrial Ecosystem	Landscaping	• Landscaping pallet will include native species. • No invasive species will be used in the landscaping pallet.
Marine Ecosystem	Increase Recreational Use (swimming wading, etc.)	• The area is already being used for recreational activity.
Wildlife	Recreational use	• Encourage the use of sunscreen. • Include signage of the rule of the Princess Alexander National Park. • No hunting or fishing will be allowed. • No wildlife should be

Significant Aspect and Impact	Impacts	Mitigations
		harassed. • An Operational Wildlife Management Plan should be implemented. Staff of the resort should follow this plan is wildlife is encountered.
	Building height	• Species that frequent the area are accustomed to the existing urban environment and high-rise structures.
Sunlight Pattern and Shadow Casting	Resort operations	• The surrounding area consists of existing high-rise structures. • Design should be considered to minimize excessive shading of adjacent properties, vegetation
Aesthetic and other building environment	Operation of the resort	• Incorporating an appropriate architectural design and landscape plan that prioritizes native vegetation is recommended to enhance the visual character of the site while creating a native flora corridor

6.15.2.1 Traffic and Transportation Plan for mitigation

Traffic Generation, Congestion, and Parking: The single largest contributor to resort-related gridlock on the island of Providenciales is the simultaneous arrival and departure of hundreds of hospitality workers during changing shifts. The developer must be mandated to provide high-capacity shuttles during construction and operation of the proposed development to transit workers to and from high density residential areas like Wheeland, Blue Hills, Five Cays, Kewtown, and Downtown, from designated zones. This will reduce the number of private cars and illegal jitneys, easing road congestion. Consultations must be made with the Director, Traffic Department, during the selection of the zones.

To address the island-wide traffic congestion, particularly along Leeward Highway, Grace Bay Road, downtown areas and Blue Hills government should consider taking the following actions:

- The installation of traffic lights along strategic locations along Leeward Highway, Grace Bay Road and major intersections on Airport Road, Blue Hills Road, the Millennium Highway and South Dock Road in accordance with recommendations of the National Physical Development Plan 2020.
- Explore the possibilities of opening-up the parallel service road that runs along Leeward Highway from the CIBC Bank Round-about to Sussie-Turn Round-about. This initiative forms part of the original road network in the Provident Limit Land use Master Plan.

- Developing Leeward Highway into a 6-lane highway, making the two inner lanes express – one eastbound and the other westbound.

- Developing alternative roads, including the "Juba-Salina" by-pass road connecting Grace Bay and the South Bank. The road will offer an alternative for motorists travelling from the Grace Bay/Leeward areas to South Banks or the south coast of Providenciales.

6.15.2.2 Housing, transport, and population Plan for mitigation

The Moon Palace resort development will directly add thousands of residents to Providenciales' growing population. To mitigate the impact of the new Moon Palace resort workers on existing housing market the company proposed constructing quality housing for approximately 2,080 workers. This will minimize rental inflation, displace residents and foster regulated settlement development.

Providenciales lack a network of public transportation, relying completely on private vehicle ownership, rentals and taxis and jitney services. Leeward Highway and other major transportation arteries, like Grace Bay Road, Millenium Highway and South Dock Road cannot adequately support the existing traffic volumes on the Islands. Traffic backup and delays in communication, particularly during rush hours, are common on the island. To mitigate the traffic problem requires the development of resort commuter shuttles for all staff shifts.

Arterial infrastructure upgrades are another measure to improve traffic flow on the crowded Leeward Highway and other major primary roads by expanding the system

of roundabouts and intersections feeding Leeward Highway and Grace Bay. A centralized off-site Park and Ride lot away from the tourism zone for resort staff, vendors and others. Perhaps, the introduction of traffic lights along Leeward Highway and other major interceptions can be considered by government's traffic planners.

The Government is presently formulating a population policy for the Turks and Caicos Islands the impact of the Moon Palace development can be include in that policy.

6.15.3 Statement of Compliance with relevant standard

The proposed development adheres to all the relevant Planning, Environmental, and other necessary building and design standards of the Turks and Caicos Islands. The developers are committed to constructing and operating a socially just, economically viable, and environmentally sustainable development project within the Turks and Caicos Islands.

The recommended mitigation measures are intended to prevent indirect impacts to coastal and marine assets and maintain existing environmental conditions. Although no coastal modification, shoreline works or marine intervention will occur, implementation of appropriate environmental management measures remains consistent with applicable Turks and Caicos Islands environmental requirements and internationally recognised environmental management practices. These measures align with the objectives of the DECR for the protection of coastal and marine resources, as well as regional and international principles relating to pollution prevention, biodiversity conservation and maintenance of ecosystem services (Department of Environment and Coastal Resources, n.d.; United Nations Environment Programme Caribbean Environment Programme [UNEP CEP], 1990; International Finance Corporation [IFC], 2012).

Table 51 – Mitigation Measures and their alignment with compliance guidelines

Mitigation Measure	Description
Water quality protection	These measures are consistent with the environmental protection objectives administered by the DECR, which require consideration of potential impacts to coastal and marine environments through the environmental assessment process (Department of Environment and Coastal Resources, n.d.). They are also consistent with the principles

Mitigation Measure	Description
	of IFC Performance Standard 3: Resource Efficiency and Pollution Prevention, which promotes the avoidance and minimisation of pollution risks and protection of receiving environments (International Finance Corporation, 2012).
Pollution prevention	These measures align with recognised hazardous materials management practices outlined within the World Bank Group General Environmental, Health and Safety Guidelines, which recommend appropriate storage, handling and control measures to reduce risks associated with accidental releases and contamination of environmental receptors (World Bank Group, 2007). These principles are also consistent with IFC Performance Standard 3, which identifies pollution prevention and emergency preparedness as important components of environmental management (International Finance Corporation, 2012).
Debris management	These measures are consistent with the objectives of the DECR and wider environmental management requirements for preventing degradation of coastal and marine resources (Department of Environment and Coastal Resources, n.d.). They also align with the waste management principles outlined within the World Bank Group General Environmental, Health and Safety Guidelines, which promote waste minimisation, appropriate handling and prevention of uncontrolled releases to the environment (World Bank Group, 2007).
Protection of coastal habitats	These measures are consistent with the objectives of the Turks and Caicos Islands protected area framework and regional biodiversity conservation commitments, which seek to maintain important habitats and ecological functions (Government of the Turks and Caicos Islands, 1992; UNEP CEP, 1990). They are also consistent with IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources, which recognises the importance of avoiding unnecessary habitat degradation and maintaining ecosystem services (International Finance Corporation, 2012).
Environmental monitoring	Measures to avoid degradation of marine habitats are consistent with the objectives of the Protocol Concerning Specially Protected Areas and Wildlife (SPAW Protocol) under the Cartagena Convention, which

Mitigation Measure	Description
	promotes protection of important marine habitats and threatened species within the Wider Caribbean Region (UNEP CEP, 1990). These principles are also consistent with IFC Performance Standard 6, which promotes conservation of biodiversity and sustainable management of natural resources (International Finance Corporation, 2012).

6.15.3.1 Turbidity must be measured daily (workdays) before, during and after work

There is no work proposed for the marine environment to generate silt that would necessitate turbidity to be measured.

6.15.4 Allocation of resources and responsibilities for plan implementation.

The overall responsibility of environmental management lies with the Owner. The Contractor shall ensure that all environmental management requirements are brought to the attention of all personnel including subcontractors, as applicable to their work, and ensure that there is compliance with requirements.

Government authorities, including DECR and the Department of Planning, will play an important role in overseeing and ensuring that works carried out by the building contractor comply with all development permission conditions.

Descriptions and titles may vary based on the contractor's designations, but the overall role and responsibilities should be similar. The key individuals with environmental responsibilities are described in the following paragraphs:

The Owner

The Owner, The Moon Palace Company, has overall responsibility for environmental issues and ensuring all measures are implemented by the contractor.

Contractor representative

The contractor representative is the main point of contact for contract negotiations/ discussions and manages the overall Project. They are responsible for overseeing that The Project remains within budget and on schedule and updates schedule as necessary. They

will be responsible for ensuring the right materials and methods are being implemented on site and works are being carried out as laid out in the design plan.

Project Manager

The Project Manager (PM) will ensure that all environmental management requirements are implemented and brought to the attention of all personnel including the subcontractors and ensure that the requirements are complied with. The Project Manager should liaise with The Environmental Monitor (EM) to ensure that ongoing and post-construction activities are following the EMP and EIA and to ensure that mitigation strategies are implemented and are effective.

Environmental Monitor

The Environmental Monitor (EM) has responsibility for all environmental issues and will track all environmental inspections and potential hazards. They will ensure that environmental measures are implemented prior to commencement of work and enforce all hold points and have the authority to stop work because of environmental issues.

The EM will also be responsible for the following:

- The EM will liaise with all other managers on The Project for environmental compliance.
- The EM will identify environmental competence requirements for all staff working on The Project and ensure delivery of environmental training to personnel within The Project team provision.
- The EM will provide advice and liaise with the construction teams to ensure that environmental risks are identified, and appropriate controls are developed and included within method statements.
- The EM will monitor and provide reporting based on the EMP criteria and liaise with all parties on any matters arising from non-compliance.
- The EM will manage the environmental monitoring program, including water quality, light and solid waste, and review of the routine reports etc.
- The EM will conduct site inspections.
- The EM will provide reports, updates, and any infractions.

Resources should be allocated prior to the commence of construction. Allocation of resources for environmental management should be a priority for the owner and contractor. The Project Manager should take into the account mitigation strategies to minimize impacts. To ensure that there is proper allocation of resources for

environmental management, construction method statements should be produced prior to commencement of construction activities. These methods should outline how the activities should be carried out in a step-by-step manner, the schedule of work, personal requirements and the equipment needed to carry out work. The method statement should also contain environmental considerations of the scheduled work and the management tools they will implement to mitigate against impacts. This will allow the contractor to factor in effective environment mitigation plans into activities and allocate proper funds to each activity.

Table 52 - Allocation of Resources and Responsibilities for Plan Implementation

PHASE	IMPACT	MITIGATION MEASURES	RESPONSIBILITY	FUNDS
Construction	Noise	Limitation to Working Hours	Contractor	Contractor
	Dust	Wetting Land and Stockpiles	Contractor	Contractor
	Storage of Machinery	Central within the Property	Contractor	Contractor
	Visual Impact	Planting of Tall Tress	Developer	Developer
	Health and Medical Services	Mobile Clinic on Site	Developer	Developer/Health Provider
	Parking	To be provided on Site	Contractor	Contractor
	Foreign Labour	Tight Work Permit Controls	Work Permit Board / Employment Services / Immigration	TCIG
	Increased Rents/Shortage	Staff Housing Provision	Developer	Developer
	Traffic	Transit Buses	Developer	Developer
	Beach Crowding/Structure	Monitoring/Enforcement	DECR / Planning	TCIG
	Temporary Construction Workers	Enforcement to Return to Country of Origin upon Completion	Immigration Dept. / Work Permit Board / Employment Services	TCIG
Operation	Noise	Neighborhood Team / Reporting	Hotel Management / Police / Licensing	Developer
	Traffic and Congestion	Transit Buses and Bus Stops	Developer	Developer
	Housing Shortage	Staff Housing	Developer	Developer

	Training and Development	Succession Plans / Apprenticeships	Employment Services / Tourism Authority and Regulation / Education Dept. / Immigration / Developer	TCIG / Hotel Operators
	Health and Medical Services	Clinic in the Resort	Developer / Medical Dept.	Developer/Health Provider
	Labour Shortage	Hospitality Centre	Education Dept /Tourism Authority / TCI Cabinet	TCIG/Corporate Sector
	Degradation of Tourism Product	Grace Bay Beach Policy	Dept of Planning / DECR	DECR/Planning/Tourism Authority
	Dilution of Culture	Cross-Cultural Programmes	Dept. Of Culture / Tourism Authority	TCIG
	Crime	Policing and Reporting	Police / Neighborhood Team / The Public	Developer/TCIG
	Visual	Planting of tall tress / Setbacks / Screening	Developer	Developer

6.15.5 Schedule of the actions to be taken and Monitoring Program

Pre- construction – pre-construction meeting to define tasks

Construction – Generate and submit weekly reports
Routine sampling episodes

Post-Construction- Generate and submit routine reports

Pre-Construction Activities

Prior to the commencement of work, pre-construction surveys should be conducted to establish a baseline for subsequent surveys, both during construction and post-construction events.

Construction method statements should also be produced prior to construction activities. These method statements should outline how the activities should be carried out and the environmental considerations that will be used during scheduled activities.

All environmental measures noted in the mitigation section (Section 6) above should be

carried out during this stage of construction. It is important to have all environmental measures in place before the commencement of activities to ensure the greatest environmental protection. Some of the environmental measures to be implemented include:

- Designation of an area for storage of waste containers.
- Ensuring adequate waste containers are present of site
- Appropriate signage and fencing are placed around site to for workers and beach goer safety.

Construction Activities

During active construction, monitoring of environmental measures should be done to ensure that implemented measures are effective. During construction, the EM will conduct weekly monitoring meetings, and a site visit every week and record all observations, including digital photo documentation. The EM will have the authority to halt any activity that is noncompliant with or damaging to the environment. During construction of swim zone, the EM will organize to have the original qualitative assessments repeated to ensure that activities are effective at mitigating impacts. The EM will also conduct turbidity reading twice per day during construction activities.

Post-Construction Activities

Post-construction monitoring will be required to be conducted by the EM to assess surrounding marine life and water quality. Monitoring during the post-construction phase of The Project will include the following methods:

- Benthic assessment should be repeated to note any changes in benthic habitat and marine fauna populations.
- Sea turtle and seabird surveys should be repeated to document if and how they are utilizing the beach (e.g. nesting).

Table 53.0: Monitoring program schedule

Item	Category	Days	Time Interval	Professional Resources
Pre-Construction				
Turtle Nesting Survey	Assessment and Report	7 (no more than 1 week before development start.)	N/A	Environmental Monitor
Avian Survey	Assessment and Report	7 (No more than one (1) week before development starts.)	N/A	Environmental Monitor
During Construction				
Benthic Survey	Assessment	2	Once during development.	Marine Biologist and EM
Benthic Survey	Report Anayis	14	Once during development.	Marine Biologist and EM
Turtle Nesting Survey	Assessment and Report	7	Monthly during non-nesting season and weekly during nesting season.	Environmental Monitor
Avian Survey	Assessment and Report	7	Monthly during non-nesting season and weekly during nesting season.	Environmental Monitor
Turbidity Monitoring	N/A	N/A	Twice per day during buoy anchoring.	Environmental Monitor

Post-construction				
Benthic Survey	Assessment	2	Every 6 months for two years.	Marine Biologist and EM
Benthic Survey	Report Anayis	14	Every six months for two years.	Marine Biologist and EM
Turtle Nesting Survey	Assessment and Report	7	Bi-weekly during Nesting season for two years.	Environmental Monitor
Avian Survey	Assessment and Report	7	Bi-weekly during nesting season for two years.	Environmental Monitor
Turbidity Monitoring	N/A	N/A	One a week for a month.	Environmental Monitor

No actions will be taken within the marine environment. It is anticipated that other activities will be covered by a land-side development schedule.

6.15.6 Program for surveillance, monitoring and auditing, covering all factors

In an Environmental and Social Management Plan (ESMP) or Environmental Impact Assessment (EIA) framework, a programme for surveillance, monitoring, and auditing provides the verifiable structure used to ensure that the project's mitigation measures work. Meetings must be conducted amongst the assigned teams or individuals to establish their mission and goals; the measurable standards or parameters that they want to achieve and/or maintain; the action(s) necessary; and performance indicators and monitoring.

Monitoring should be undertaken to determine whether the proposed mitigation measures are effective and whether environmental conditions remain comparable with the established baseline. As no coastal works or marine intervention will occur, monitoring should focus on confirming that existing coastal and marine assets remain consistent with baseline conditions and identifying any changes associated with natural coastal processes, climate related pressures, or existing land-based activities.

The recommended monitoring regime will focus on shoreline condition, coastal habitat condition, nearshore water quality, benthic resources and evidence of increased environmental pressure such as debris accumulation, erosion or changes following significant storm events. Monitoring frequency should also be adaptive and increased where notable environmental changes are observed. The proposed monitoring schedule is presented in Table 53.

Table 54 – Proposed Monitoring Schedule

No.	Item	Category	Duration (days)	Frequency	Responsible Parties
1	**Beach and Dune Monitoring**				
1.1	Beach profile and dune condition survey	Data Collection	3 per survey	Annually; following significant storm or hurricane events where applicable	Coastal Engineer / Coastal Specialist / Environmental Consultant
1.2	Analysis of beach and dune survey data and preparation of beach and dune condition report	Analysis and Report	3 per survey	Annually	Coastal Engineer / Coastal Specialist / Environmental Consultant
2	**Water Quality Monitoring**				
2.1	Nearshore water quality assessment, including visual assessment of sediment discharge, debris and potential contamination sources	Data Collection	2 per survey	Semi-annually and following any observed pollution event	Environmental Representative / Marine Biologist
2.2	Laboratory analysis and preparation of water quality report	Analysis and Report	5 per survey	Semi-annually	Certified Laboratory / Marine Biologist/ Environmental Specialist
3	**Benthic Resources Monitoring**				

No.	Item	Category	Duration (days)	Frequency	Responsible Parties
3.1	Visual benthic assessment of coral communities, seagrass habitats and other sensitive marine resources	Data Collection	3 per survey	Annually	Marine Biologist / Environmental Consultant
3.2	Analysis of benthic survey data and preparation of benthic condition report	Analysis and Report	5 per survey	Annually	Marine Biologist / Environmental Consultant
4	**Marine Debris and Coastal Habitat Inspection**				
4.1	Inspection of coastal areas for marine debris, litter accumulation and evidence of human disturbance	Data Collection	1 per survey	Quarterly or as required based on site conditions	Environmental Representative / Site Monitor
4.2	Preparation of environmental monitoring summary report	Analysis and Report	2 per survey	Annually	Environmental Consultant
5	**Terrestrial Ecology**				
5.1	Flora Assessment	Data Collection	3 per survey	Year 1 – quarterly (After – semi-annually)	Terrestrial Ecologist
5.2	Dune Vegetation Reports	Analysis	3 per survey	Year 1 – quarterly After – semi-annually	Terrestrial Ecologist

6.15.7 Program for control of invasive species for flora and fauna on the property

Four (4) invasive species was observed on The Project site. The occurrence, abundance, and suggested control measures for these species are listed below (see Table 55).

Table 55: Invasive species observed.

Species	Occurrence and Abundance	Recommendations
Australian Pine (*Casuarina equisetifolia*)	Mature trees were observed along both sandy and Dry Broadleaf Evergreen Formation of The Project site.	Control
Suckering Australian Pine *(Casuarina glauca)*	Mature trees were located along the Sandy shoreline.	Eradicate
Jumbay (*Leucaena leucocephala*)	Mature trees were located within the Coastal Dry Broadleaf Evergreen Formation vegetation class.	Control
Haiiwan Seagrape (*Scaevola taccada)*	Mature trees were observed in clusters along the Sandy shoreline	Eradicate

Species that are recommended for control are species whose richness and distribution are too enormous to eradicate but whose spread can be stifled through various mitigative measures. Whereas species recommended for eradication are species whose richness and distribution are relatively small and hence can be eradicated.

Removal of invasive species from the site is proposed as a mitigation for habitat loss. While this activity will have a positive impact on the terrestrial environment there are also risks associated with executing the task that should be managed.

Potential Impacts associated with invasive species during development & operations include:

- Spread of invasive species from existing individuals on the site.
- Introduction of additional individuals of existing species.
- Introduction of new plant and animal invasive species.

Pathways for introduction and spread of invasive species during construction include:

- Regeneration of plants from improper removal.
- Transfer of seeds and other propagative parts from one location to the next.

- The introduction of invasive plants for landscaping.
- The introduction of invasive animals with the importation of plants for landscaping.

This invasive species removal & control plan is intended to guide the process of invasive species removal from the site and outline measures to prevent reestablishment of new introductions. This document is to be used as a part of the overall landscape management of the site.

6.15.8 Contingency plan when impacts are greater than expected

When impacts are greater than predicted and beyond the existing management capacity, whether it is related to coastal erosion, insufficient housing, massive congestion and gridlock, such situations would be considered grave and warrant a high level of government and private sector action.

From the outset it is important to adapt to a close working relationship with all the relevant TCIG authorities and Departments. Whether it is The Tourism Authority, Disaster Management, Environmental Health, Department of Planning, Fire Services, or the DECR. It is the intention to develop Management Plans involving all the government authorities and specify their roles.

Collaboration with the Turks and Caicos Hotel and Tourism Association (TCHTA) and other NGOs are also essential. These plans will be developed as the project progresses.

SECTION VII

7.0 Recommendations and Conclusions

This environmental assessment indicates that the Palace Resorts development site is located within a dynamic coastal setting influenced by seasonal wave conditions, hurricanes and long-term sea-level rise. The proposed development adopts a coastal "do-nothing" approach, whereby no dredging, reclamation, beach nourishment, marine structures or other works are proposed within the beach or marine environment. The development is primarily located within the upland area and incorporates a 200ft buffer from the High-Water Mark. Consequently, the development is not expected to measurably alter the existing wave climate, tidal circulation, sediment-transport pathways or erosion and accretion processes along the project frontage.

Overall, most of the beach survey respondents (recreational beach users, boat tour operators, beach vendors, local entrepreneurs, tourists, etc.) were enthusiastic about the proposed development. Everyone wants to see regulations in place that would ensure that there are positive economic ripple effects in favour of the local residents, particularly the indigenous people of the country. They felt that environmental concerns could be addressed, but cultural heritage, once it is gone will become irretrievable. Many, especially the clear bottom kayak photography and the beach vendors that seek tourists for boat excursions and parasailing, were excited about the development with anticipation.

Historical shoreline analysis confirms that the beach is generally eroding. Between March 2018 and June 2026, most of the northern and central frontage experienced net landward shoreline movement of approximately 15m to 23m, while the southern frontage showed smaller net changes. The observed shoreline-position envelope was generally approximately 21m to 27m across much of the northern and central frontage.

The marine baseline indicates that the nearshore seabed is predominantly sandy and generally of low structural complexity. The principal ecological sensitivities are associated with the existing groynes and breakwater, which have developed into established artificial hard-substrate habitats; the localised hardbottom and algal areas along the eastern frontage; and the patch-to-sparse seagrass habitat located farther offshore. The existing structures support corals, algae, sponges, fish and mobile invertebrates and should therefore be treated as both coastal infrastructure and marine habitat. As no marine intervention is proposed, direct impacts involving seabed disturbance, habitat removal, burial or alteration of these resources are not anticipated.

The offshore coral reef and shallow platform provide substantial natural attenuation of wave energy under typical conditions. Modelled shoreline wave heights are generally approximately 0.1–0.2m under average conditions and approximately 0.4–0.6m under the 99th-percentile condition. Tide-induced currents immediately offshore are weak, while energetic waves generate stronger southwest-directed alongshore circulation and greater sediment mobility.

Hurricane storm surge, wave runup and coastal inundation represent the most significant residual coastal hazards. XBeach simulations calculated a runup elevation of approximately +2.9m. Modelling of the development indicates that it could prevent inundation from extending beyond the 200ft buffer zone under the assessed 50-year and 100-year scenarios, although erosion and recession of the seaward slope may still occur during extreme events.

The Construction Waste Management Plan provides a comprehensive framework for managing all waste streams generated during the construction of the Moon Palace & Le Grand Hotel. Through segregation, recycling, safe handling of hazardous materials, and strict monitoring, the project will minimize environmental impacts, reduce landfill burden, and comply fully with national regulations and best practices for sustainable construction in the Turks and Caicos Islands.

Overall, the proposed development is not expected to cause significant adverse effects on coastal processes or marine habitats, provided that the 200ft buffer is maintained, no unassessed works are undertaken within the beach or marine environment, and the specified environmental management measures are implemented. Most potential project-related effects are indirect and are expected to be minor. These include runoff, sediment discharge, accidental contamination, dust, windblown debris, disturbance of dunes and increased recreational pressure. Climate-related coastal inundation and sea-level rise remain moderate long-term vulnerabilities, but these arise from the site's existing exposure rather than from alteration of the coastal system by the proposed development.

SECTION VIII

8.0 Statement of Understanding of EIA recommendations and of the Environment Charter (2001) and Climate Change Charter (2022)

8.1 *Statement of Understanding of the Terms of the Environment Charter (2001) from the Proponents*

The development proponents (Moon Palace Company) support the Environmental Charter 2001-TCI and agree to fully comply with protected area management strategies. To this end, an Environmental Management Plan was created, which calls for the routine monitoring and testing of marine water quality, groundwater quality, and ambient air quality.

The data collected and test results will be routinely shared with TCIG.

8.2 Statement of Understanding of the Terms of Climate Change Charter (2022) from the Proponents

While the Turks and Caicos Islands are not among the top ten countries impacted by climate change, development proponents keenly support the initiatives outlined in the TCI National Physical Sustainable Development Plan related to the physical development of the Turks and Caicos Islands.

To this end, the development proponents agree to provide funding for the employment of a Special Inspector (Environmental) to monitor the phases of development and provide TCIG with updated reports on the progress of work.

8.3 Proponents Declaration of intent to guide the development by the recommendations of the EIA consultants, with an updated Declaration following response to public or TCIG requesting or requiring alteration to any part of the EIA.

I/We, the undersigned development proponents, hereby declare our intentions to fully comply with the conditions set out under the grant of Detailed Development Permission and comments made by TCIG government departments.