ENVIRONMENTAL MANAGEMENT PLAN

LEGENDARY MARINA RESORT AT BLUEWATER CAY
NEW PROVIDENCE, BAHAMAS

Submitted to:
Department of Environmental Planning and Protection
Ministry of Environment and Natural Resources
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Submitted by:
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On behalf of:
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Date Submitted:
31 March 2023

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Table 0-1. Permitting table

Name / Type of Document	Date Received/Submitted
Certificate of Environmental Clearance (CEC) submitted to Department of Environmental Planning and Protection (DEPP)	February 15, 2022
Environmental Impact Assessment (EIA) Terms of Reference (TOR) submitted to DEPP	February 21, 2022
Permit to Harvest a Protected Tree application (PHPT) submitted to The Forestry Unit	April 25, 2022
EIA Submitted to DEPP	July 12, 2022
DEPP EIA Review Letter to Bron Ltd. (BRON)	August 18 2022
BRON Response Letter to DEPP	September 15, 2022
EIA Revision 1 submitted to DEPP	September 30, 2022
PHPT renewal submitted to The Forestry Unit	January 31, 2023

Public Consultation Report submitted to DEPP	January 27, 2023
Supplementary Marine Resources Survey submitted to DEPP	January 27, 2023
Environmental Management Plan (EMP) TOR submitted to DEPP	January 27, 2023
EMP Submitted to DEPP	**March 31, 2023**

1 EXECUTIVE SUMMARY

The Legendary Marina Resort at Bluewater Cay Project (the Project) intends to be a full-service marina resort located near Yamacraw Subdivision on New Providence Island, The Bahamas. This 20-acre peninsula property was previously planned as a marina development and was abandoned several years ago. Currently the property is derelict and in disrepair. The Legendary Marine Bluewater Cay Ltd. (the Developer) proposes to transform this site into a world-class marina, thereby enhancing the southeastern portion of Fox Hill Road and adding value to the entire area.

The Project is designed to act as a central hub for boaters transiting to and among the islands of The Bahamas. The main feature of the Project is to build a boat dry storage facility (boat storage barn) that can house up to 750 boats at maximum configuration and is hurricane-rated Category 5 design. This multi-story boat barn, which covers about 200,000 square feet (580ft x344ft x 65ft tall), can house boats that are up to 53 feet long overall. Additionally, the Project will have a full-service marine facility with a marina basin with up to 100 wet slips, among other amenities. The Marina Club and Restaurant, Pools (3), Short/Mid Term Lease (3-storey, 32 keys), Work Force Housing (36 units), Staff Housing (4 units), Marina Floating Docks, Hotel (4-storey; 130 keys), Beachfront Cottages, Condominium (3-storey, 20 units), and a Fuel dock will be some of the Project's standout features (inclusive of underground fuel storage tanks).

The construction of the Legendary Marina Resort at Bluewater Cay has the potential to boost both the local and national economies of The Bahamas. The dredging and land reclamation activities both have the potential to produce significant volumes of turbidity and alter the natural environment. These activities would have the greatest potential for negative effects on flora and fauna. Nevertheless, it is anticipated that the Project's EMP, which has been created for the construction and operating stages, would manage, lessen, and in some cases even mitigate the possibly negative environmental consequences observed.

Through mitigation measures the Developer is committed to minimizing the negative environmental impacts of the Project activities while maximizing the environmental and social benefits. Mitigation measures will include removal of invasive vegetation, incorporating native and avian-friendly plants into the landscaping plan, cleaning the site of hazardous trash, restoring tidal flow to the mangrove wetland west of the Project, and reducing stagnant water areas to help prevent mosquito breeding on the site and reducing flooding. The Project will also include the creation of eco-friendly breakwaters to reduce wave energy at the shoreline. These breakwaters will also encourage marine life habitation. Rainwater will be recycled for irrigation and boat washdowns. Dredging to provide access to Yamacraw Lake is yet another mitigation effort which the Developer is committed to. Mangrove health is anticipated to improve as a result of changes in drainage patterns, and mangroves will also be added to landscaping. The Developer suggests creating a living shoreline to further reduce the impact on mangroves. The Developer also plans

to work with local public schools to create curriculums on mangroves, mangrove restoration methods, and the significance of mangrove regeneration in terms of creating thriving ecologies and protecting shorelines from erosion. Additionally, the Developer plans to build direct access for the general public to a public beach spot at the southwest corner of the project site. The proposed public beach will be created outside the proposed development.

2 INTRODUCTION

2.1 PURPOSE

BRON Ltd. (BRON) was engaged by The Legendary Marine Bluewater Cay Ltd. (the Developer) to produce an EMP for the Legendary Marina at Bluewater Cay (the Project) located in New Providence, The Bahamas. This EMP discusses the Project, which is a total of 20 acres. The Project impacts and proposed mitigation described in this EMP are based on the DEPP approved EIA, Supplementary Marine Resources Survey Report, and Terms of Reference for the EMP.

The EMP is an initial plan based on the Project design, discussions with the Project proprietors and the Department of Environmental Planning and Protection (DEPP), the regulatory body managing EMPs in The Bahamas. Mitigation measures are described in this EMP, and the relevant monitoring plan is included to help guide monitoring of the site construction activities and later project operations. Also included in the EMP are recommendations to limit negative impacts to the surrounding environment.

The purpose of this Project Is to provide a unique opportunity for boaters to keep their vessels in a safe, secure, and dry storage that offers the following benefits:

- **Storm Protection** – This facility is designed to withstand category 5 hurricane winds; providing a viable hurricane plan for boat owners, even non-members. Additionally, the docks will be designed to withstand storm surge caused by severe weather. Breakwaters will be constructed in consideration of severe weather and related storm surge. The Development will have a minor impact on the surrounding upland area in the event of a hurricane. The existing peninsula will be raised, and the construction of the breakwater and groyne system will act as a revetment. The system will help dissipate wave energy, therefore reducing the wave energy at the existing coastline during easterly to southerly hi-wind events. The mitigation that the Developer is committed to during hurricanes is to offer shelter to non-member boats on a first come first serve basis.
- **Lower Maintenance** – Vessels stored in a dry controlled storage will have less maintenance issues.
- **Peace of mind** – The facility will be monitored 24/7 with closed circuit tv (CCTV) and security guards. The facility will have perimeter fencing and an entrance security gate staffed with security personnel.

The Project will bring many direct and indirect benefits to the adjacent neighborhood, to the Island of New Providence, and more broadly the Bahamian economy.

2.2 Scope and Content

The scope of this EMP includes a description of the Project's potential environmental impacts of development, mitigation strategies to lessen environmental impacts, and plans to reduce health and safety risks of staff on-site during construction and operation. The results of this EMP will provide the Client, Contractor(s) and Operations Management with details that help to avoid and/or mitigate detrimental environmental impacts and safety risks due to the proposed development, and therefore, assist with successful project execution.

The EMP is meant to be a living document, adapted as needed throughout the life of the Project. Under the direction DEPP, the Developer, Project Manager and Environmental Manager will oversee the implementation and adaptation of the EMP. Mitigation measures for potentially adverse environmental impacts during the construction phase of the Project were discussed in the EIA. These are further described in this document and the relevant monitoring plan is included to help guide monitoring of project activities. Also included in the EMP are recommendations to limit negative impacts to the surrounding environment including use of turbidity monitoring during the dredging and construction activities, watering the site to limit dust propagation off site, limitations of emissions which affect air quality, the complete removal of invasive plant species of the site to limit further spread, as well as other biological resource management that focuses on marine resources, marine megafauna, avian species, and the use of public communication means to lessen the negative impacts of the project on neighboring residents to the project site.

3 Project Description

3.1 Geographic Location

The Bahamas' capital, Nassau, is situated on the island of New Providence. The Project's location is roughly at 25° 1'1.03"N and 77°17'48.26"W, in the eastern part of New Providence, The Bahamas, on the southeast coast. Fox Hill Road south, which connects to the Blue Water Cay Road, provides access to the location (east of Fox Hill Road south). The Yamacraw subdivision is located to the north of the Project site. Figure 3.1 through 3.3 depicts the Project site's location.

Figure 3.1. Project site related to islands in The Bahamas (Google Earth,2023).

Figure 3.2 Project site location on South-East of New Providence Island (Google Earth, 2023).

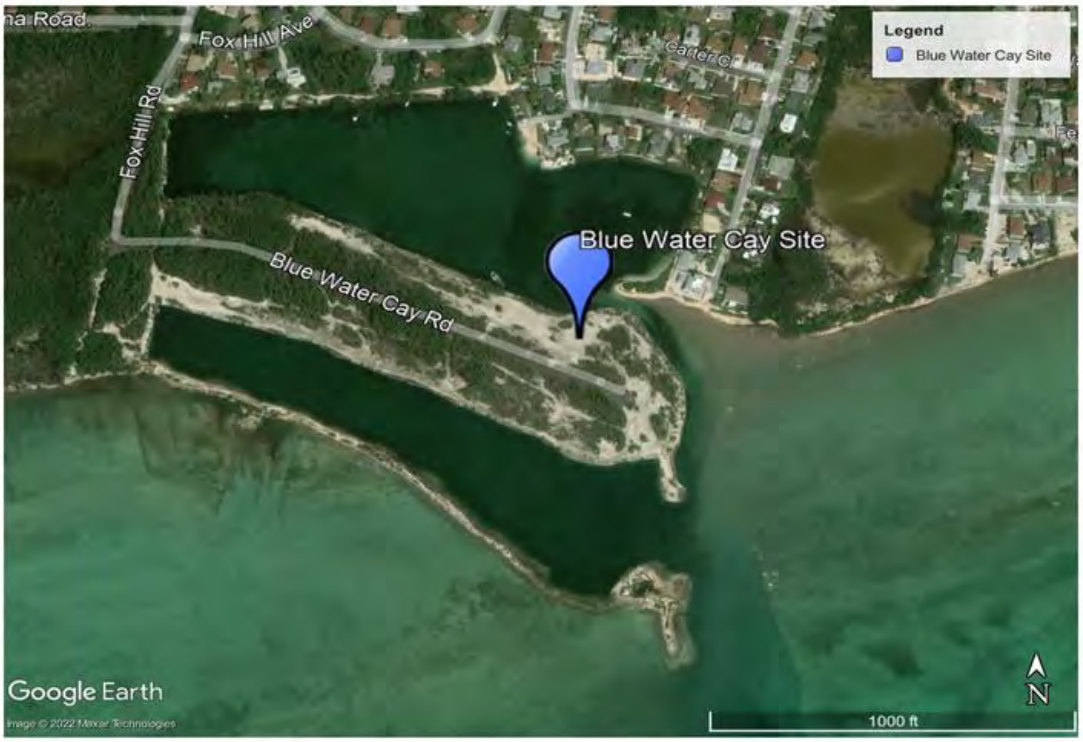


Figure 3.3 Magnified view of the Project site at Blue Water Cay (Google Earth,2023).

3.2 PROPOSED DEVELOPMENT

The Developer has extensive experience and a keen understanding of the construction and operation of this type of marina and storage facilities (e.g., The Legendary Marina facility in Destin, Florida). A full-service marina will be a part of the planned construction and be situated close to the Yamacraw district in New Providence. The Developer intends to build a boat barn or storage facility that can house up to 750 boats at full configuration and is hurricane-rated Category 5. This multi-story boat storage facility, which is estimated to be 200,000 square feet (580ft x 344ft x 65ft tall), can house approximately 750 boats of up to 53 feet LOA (length overall). Additionally, the Project will have a full-service marine facility with a marina basin with up to 100 wet slips, among other amenities, a full marina service and parts center marine store, a hotel, a marina club with a restaurant, bar, pools, a retail area, and a fuel dock, the development's other features include workforce housing, oceanfront villas, condominiums, and residences, as well as a fixed-based Bahamas Customs/Immigration operation.

3.3 SITE MASTER PLAN

The Site Master Plan for the Full Development and Phase 1 are provided on the following pages and in Appendix A

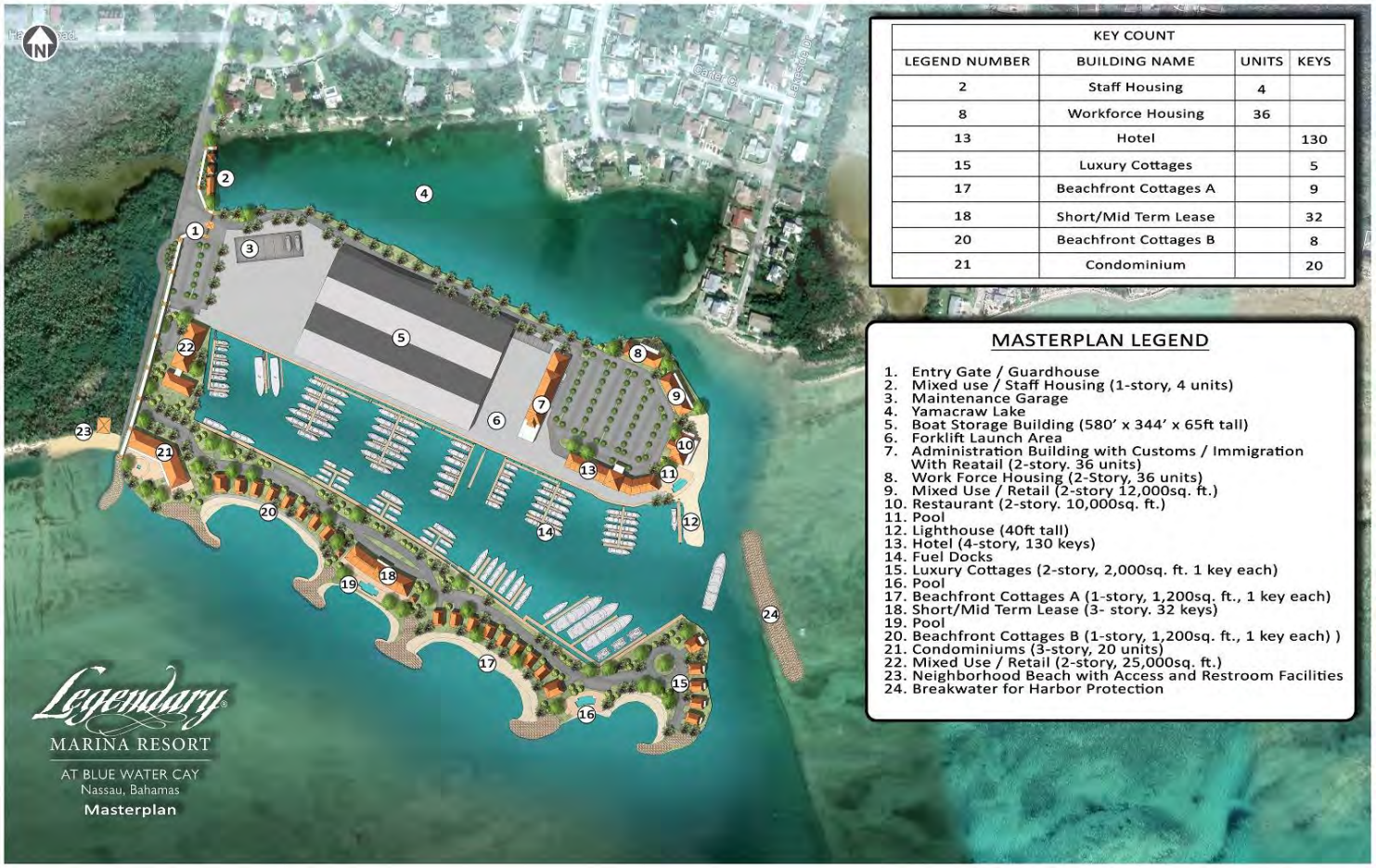


Figure 3.4 Masterplan Full Development

Figure 3.5 Phase 1 Master Plan

3.4 PROJECT SCHEDULE

The Project will be completed in four (4) phases as described below.

- **Phase 1** is the initial phase required to construct assets appropriate to open a functioning marina:
  Commencement: Year 1
  Construction duration : 1.5 yrs
  PH1 Employment Figures:
    - Construction : 75 persons
    - Operations : 40 persons

  Description of Phase 1 Work :
  - All site work, infrastructure, seawall reconstruction on main peninsula
  - 50% of wet marina
  - 100% of boat storage building
  - Administration building
  - Fuel docks and fuel storage
  - Revitalization of mangroves
  - Channel and marina basin dredging
  - Marine service bays
  - Coastal protection
  - 50% Parking
  - Guard house and fencing

- **Phase 2** will expand on Phase 1 by completing the marina assets and reconstructing the breakwater into a larger peninsula:
  Commencement: Year 3
  Construction duration: 2yrs
  PH2 Employment Figures:
    - Construction: 75 persons
    - Operations: 40 persons

  (80 persons total)

  Description of PH2 Work:
  - - Construct enhanced peninsula
  - Remainder of wet marina
  - Remainder of parking
  - Marine service bays
  - Mixed use / Retail building

- **Phase 3** brings the hospitality assets online along with the associated amenities and staff housing as required:
  Commencement: Year 5
  Construction duration: 2.5yrs
  PH3 Employment Figures
    - Construction: 100 persons
    - Operations: 90 persons

  (170 persons total)

  Description of PH3 Work:
  - Hotel
  - Restaurant / Bar
  - Pool
  - Staff housing

- Lighthouse

- **Phase 4** brings development to the reconstructed and fortified peninsula that was constructed in Phase 2:
  Commencement: Year 7
  Construction duration : 2.5 yrs
  PH4 Employment Figures:
    - Operations: 50 persons
    - Construction : 80 persons

  (220 persons total)

  Description of PH4 Work:
  - Oceanfront villas
  - Cottages
  - Additional coastal protection areas as needed
  - Short/Mid-term lease
  - Condominiums
  - Beach areas

BRON POSSIBILITIES UNLIMITED

Legendary Marina Center at Bluewater Cay
Project Development Schedule - DRAFT 12 September 2022

ID	Task Name	Duration	Start	Finish	% Complete
1	1 Authorization to Proceed	0 days	Wed 5/19/21	Wed 5/19/21	100%
2	2 BIA Approval Received	0 days	Fri 7/9/21	Fri 7/9/21	100%
3	**3 Preliminary Technical Studies**	**287 days**	**Tue 5/25/21**	**Wed 6/29/22**	**100%**
9	**4 Permitting and Approvals**	**217 days**	**Tue 2/15/22**	**Wed 12/14/22**	**23%**
31	**5 A&E: Design Development**	**131 days**	**Mon 5/2/22**	**Mon 10/31/22**	**50%**
38	**6 Construction**	**310 days**	**Mon 1/16/23**	**Fri 3/22/24**	**0%**
39	6.1 Site Clearing	20 days	Mon 1/16/23	Fri 2/10/23	0%
40	6.2 Marina Excavation/Dredging	60 days	Mon 2/13/23	Fri 5/5/23	0%
41	6.3 Marina Construction	60 days	Mon 3/13/23	Fri 6/2/23	0%
42	6.4 Breakwater/ Penninsula Repairs	30 days	Mon 3/27/23	Fri 5/5/23	0%
43	6.5 Civil Site Grading	10 days	Mon 2/13/23	Fri 2/24/23	0%
44	6.6 Civil Infrastructure	60 days	Mon 2/27/23	Fri 5/19/23	0%
45	6.7 Bulding Foundations	20 days	Mon 2/27/23	Fri 3/24/23	0%
46	6.8 Building Construction	240 days	Mon 3/27/23	Fri 2/23/24	0%
47	6.9 Building Closeout/OC	20 days	Mon 2/26/24	Fri 3/22/24	0%
48	**7 Project Complete**	0 days	Fri 3/22/24	Fri 3/22/24	0%

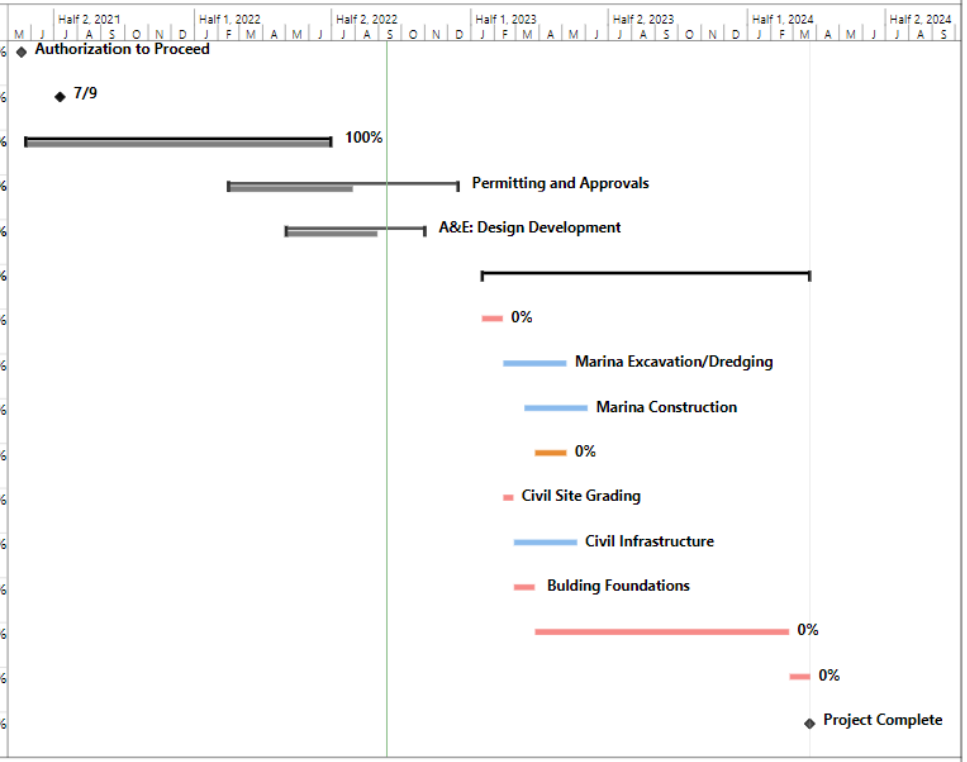


Figure 3.6 Project Schedule (The above preliminary schedule will be updated upon receiving the CEC approval.)

4 Environmental Regulatory Bodies, Standards & International Conventions

4.1 Relevant Regulatory Bodies

Office of the Prime Minister - Office of the Prime Minister coordinates ministries, government, and parliamentary business. Specific related departments and agencies are listed below.

Department of Lands and Surveys - This department is responsible for planning, mapping, and monitoring of crown land (i.e., where beaches begin and end, high water marks, etc.).

National Emergency Management Agency (NEMA) - NEMA aims to reduce life and property loss in the event of a natural disaster.

Antiquities Monuments and Museum Corporation (AMMC) - The mission of AMMC is "to protect, preserve, and promote the Historic Cultural Resources of The Bahamas, and to be the number one conservation Agency in the world. We will do this while protecting our environment, encouraging research and archaeology, and by protecting, preserving, and promoting our Historical Sites."

Ministry of Agriculture, Marine Resources and Family Island Affairs - The Ministry of Agriculture Marine Resources and Local Government is responsible for the implementation, monitoring and evaluation of policies related to agricultural lands and marine resources. The Ministry serves as the Management and Scientific Authority for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in The Bahamas.

Department of Marine Resources (DMR) - DMR is primarily responsible for the administration, management, and development of fisheries in The Bahamas. The department was created to administer, manage, and develop the fisheries sector as stipulated by the Fisheries Resources (Jurisdiction and Conservation) Act. The Department is also tasked with enforcement of Fisheries Regulations, Marine Mammal Regulations and the Seafood Processing and Inspection Regulations.

Ministry of Works & Utilities - The Ministry of Public Works maintains the physical infrastructure and natural environment of The Bahamas by providing quality services to its client agencies.

Department of Public Works - The Department of Public Works maintains public infrastructure inclusive of government buildings, roads, docks, bridges, and cemeteries.

Department of Physical Planning - The Department of Physical Planning manages town, physical, country and land use planning, zoning, private roads and subdivisions for New Providence and the Family Islands.

Water and Sewerage Corporation - The Water and Sewerage Corporation is entrusted with managing, maintaining, distributing, and developing the water resources of The Bahamas.

Ministry of Environment & Natural Resources - The Ministry of Environment and Housing serves to protect, conserve, and manage the environment of The Bahamas. This ministry focuses on environmental control, solid waste management, public sanitation, and the beautification of public areas such as parks and beaches.
Department of Environmental Planning & Protection (DEPP) - The functions of the Department are to provide for and ensure the integrated protection of the environment of The Bahamas and ensure the sustainable management of its natural resources." DEPP is responsible for the evaluation of EIAs and EMPs and managing international environmental conventions.

Department of Environmental Health Services (DEHS) - DEHS manages the disposal of all wastes and management of environmental pollution (on land or in water). This department also promotes planning and approves various measures designed to ensure wise use of the environment.

Forestry Unit - The Forestry Unit's mandate is "to develop the forest resources of The Bahamas to their maximum potential by applying sound, scientific and sustained yield forest management principles and concepts."

Bahamas National Trust (BNT) - The mission of the BNT is "Conserving and protecting the natural resources of The Bahamas, through stewardship and education, for present and future generations."

Ministry of Labour & Immigration- The Ministry of Labour oversees and regulates labour relations within The Bahamas.
Department of Labour - The Mission of the Department of Labour promotes good industrial relations between employer and employee, while promoting a high level of employment.

4.2 National Laws and Regulations

Disaster Preparedness and Response Act, 2006 (Ch. 34A) - "An Act to provide for a more effective organization of the mitigation of, preparedness for, response to and recovery from emergencies and disasters." This Act contains parts regarding Director of NEMA, Advisory Committee, policy review and plan; emergency operation centers and shelters; obligations of other public officers; specifically, vulnerable areas; disaster alerts and emergencies; and miscellaneous entries.

Antiquities, Monuments and Museum Act, 1998 (Ch. 51) - "An Act to provide for the preservation, conservation, restoration, documentation, study and presentation of sites and objects of historical, anthropological, archaeological and paleontological interest, to establish a National Museum, and for matters ancillary thereto or connected therewith", where, section 3 speaks to the declaration of a monument by reason of its historical, anthropological, archaeological or paleontological significance.

Agriculture and Fisheries Act, 1964 - "An Act to provide for the supervision and development of agriculture and fisheries in The Bahamas," where Section 4 explains that "The Minister may make rules for all or any of the following purposes, (a) to define area hereinafter called 'protected

areas' within which it shall be unlawful for any person except a licensee especially licensed in that behalf to plant, propagate, take, uproot or destroy any species of plant…".

Fisheries Resources Jurisdiction and Conservation Act Regulations, which prohibits the removal of Sea Oats, *Uniola paniculata*. "13. No person shall cut, harvest, or remove from any beach or shore or from any area immediately adjacent thereto any Sea Oats except with the written permission of the Minister.[1]"

Town Planning Act, 1961 (Ch. 255) - "An Act relating to town planning", where section 7 speaks to committee sanctioned development activities.

Buildings Regulation, 1971 (Ch. 200) - "An Act to regulate the construction, alteration and repair of buildings, to provide for the re- instatement or removal of dangerous or dilapidated buildings, to authorize the publication of a building code and for purposes connected therewith." Where, Section 2. (c) speaks to the interpretation of 'building' including "any dock, bulkhead, pier and any works for the protection of land against encroachment by, or for the recovery of land from, fresh or salt water;" and Section 17 speaks to the Building Code.

Water and Sewerage Corporation Act, 1976 - "An Act to establish a Water and Sewerage Corporation for the grant and control of water rights, the protection of water resources, regulating the extraction, use and supply of water, the disposal of sewage and for connected purposes." where, section 3 speaks to government control of the production, extraction, and use of water in the public interest.

Buildings Regulation (General) Rules, 1971 - (further to Section 19 of Ch. 200) and Section 9 speaks to the execution of permitted works.

Environmental Planning and Protection, 2019 – An Act to establish the department of environmental planning and protection; to provide for the prevention or control of pollution, the regulation of activities, and the administration, conservation, and sustainable use of the environment; and for connected purposes.

Environmental Impact Assessment Regulations, 2020 – An extension of the Environmental Planning and Protection Act that outlines the Environmental Impact Assessment Regulations which apply throughout the territory of The Bahamas including every island and cay; "The Minister, in exercise of the powers conferred by section 12 of the Environmental Planning and Protection Act, 2019 (No. 40 of 2019)".

Bahamas Public Parks and Public Beaches Authority Act, 2014 – An Act to establish the public parks and public beaches authority, to provide for the property rights and liabilities of the public parks and public beaches authority and to identify, regulate, maintain, develop, and conserve public parks and public beaches and for connected purposes." Where section 5 speaks to functions of the Authority.

[1] laws.bahamas.gov.bs/cms/images/LEGISLATION/SUBORDINATE/1986/1986-0010/FisheriesResourcesJurisdictionandConservationRegulations_1.pdf

Environmental Health Service Act, 1987 (Ch. 232)- "An Act to promote the conservation and maintenance of the environment in the interest of health, for proper sanitation in matters of food and drinks and generally, for the provision and control of services, activities and other matters connected therewith or incidental thereto", where, section 5 speaks to functions of the Department of Environmental Health.

Environmental Health Services (Collection and Disposal of Waste) Regulations, 2004 (Ch. 232) - "These Regulations may be cited as the Environmental Health Services (Collection and Disposal of Waste) Regulations, 2004", where, section 18 speaks to removal of construction waste and section 19 speaks to industrial waste disposal.

Coast Protection Act, 1968 (Ch. 204) - "An Act to make provision for the protection of the coast against erosion and encroachment by the sea and for purposes connected therewith", where, section 8 speaks to approval for coastal protection work and section 9 speaks to the excavation of materials that compose of the seashore.

Conservation and Protection of the Physical Landscape of The Bahamas Act, 1997 (Ch. 260) - "An Act to make provision for the conservation and protection of the physical landscape of The Bahamas. The Act contains parts regarding administration, regulation of excavation and landfill operations, provisions governing dangerous excavations, landfill operations, quarries or mines, zoning of The Bahamas for the purposes of quarrying and mining operations, protected trees, and general entries.

Conservation and Protection of the Physical Landscape of The Bahamas Regulations, 1997 - (further to Section 27 of Ch. 260). The Act contains parts regarding applications, permits and licenses, appeals, fees, offences, and penalties.

Bahamas National Wetlands Policy[2] – see Ramsar Convention.

Forestry Act, 2010 – An Act to provide the conservation and control of forests and for matter related thereto.

Forestry Regulations, 2014 – "5. Application for Permit to harvest protected tree. An application for the grant of a permit under section 12 of the Act to harvest a protected tree, shall be made to the Director and shall contain all the relevant particulars set out in Form No. 3 (A) in the First Schedule including the payment of the prescribed fee as set out in the Second Schedule." and

"6. Permit to harvest protected tree. A permit granted under section 11 of the Act to harvest a protected tree shall be made in the manner set out in Form No. 3 (B) in the First Schedule, shall be accompanied by the payment of the prescribed fee as specified in the Second Schedule and shall be valid for six months from the date of the grant unless otherwise prescribed in the permit."

and

"Construction or modification of road in a forest estate. A person shall not construct or modify a road or trail in a forest estate unless the construction or modification has been authorized by the

[2] http://www.best.gov.bs/Documents/Bahamas_national_wetlands_policy.pdf

Director of Forestry in writing, and the road, - a) or trail has been identified in an approved forest management plan; and b) layout has been approved by the Director of Forestry."

Forestry (Declaration of Protected Trees) Order, 2021 – The declaration of protected trees for the purpose of this Act are specified in Part I (Endemic or Endangered or Threatened Protected Trees) and II (Cultural or Historical and Economic Protected Trees).

Forestry (Amendment) Regulations, 2021 – "The Minister, in excise of the powers conferred by section 34 of the Forestry Act, 2010, makes the following Regulations." Where the amendment speaks to Regulation 36 subsection 3A "The Minister, acting on the advice of the Director of Forestry, may where a hurricane, tornado, or any other natural disaster has occurred in any island, islet or cay throughout The Bahamas which causes grave damage to any forest, forest estate, forest reserve, conservation forest or protected forest to be payable as specified in the Second Schedule, for royalties, permits and licenses for the purpose of these regulations."

Health and Safety Work Act, 2002 (Ch. 321C) - *"*An Act to make provisions relating to health and safety at work and for connected purposes." where, Section 4 speaks to general duties of employers to their employees and where, Section 7 speaks to general duties of employees at work.

Health and Safety at Work (Amendment) Act, 2015 - (repeal and replacement of Section 17 of Ch. 321C) Contains parts regarding applications, permits and licenses, appeals, fees, offences, and penalties.

4.3 INTERNATIONAL CONVENTIONS

Stockholm Convention on Persistent Organic Pollutants – "As set out in Article 1, the objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants[3]."

Commission on Sustainable Development – "The United Nations Commission on Sustainable Development (CSD) was established by the UN General Assembly in December 1992 to ensure effective follow-up of United Nations Conference on Environment and Development (UNCED), also known as the Earth Summit[4]."

Kyoto Protocol – The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets. The Kyoto Protocol was adopted in Kyoto, Japan, on 11 December 1997 and entered into force on 16 February 2005[5].

Basel Convention on the Control of Transboundary Movement of Hazardous Wastes – "The Basel Convention is a global agreement between countries to protect human health and the environment against the adverse effects of hazardous wastes." [6]

[3] http://www.pops.int/TheConvention/Overview/tabid/3351/Default.aspx
[4] https://sustainabledevelopment.un.org/intergovernmental/csd
[5] http://unfccc.int/kyoto_protocol/items/2830.php
[6] http://www.basel.int/ +

5 ENVIRONMENTAL MANAGEMENT ORGANIZATION

5.1 ORGANIZATION CHART

The organization chart below clearly defines the roles and responsibilities of the Developer/Project Owner, management, and construction staff of the Project with regards to EMP compliance and environmental monitoring. Successful management of personnel ensures an efficient and safe work environment. Adequate staff experience, training, and technical knowledge pertinent to assigned tasks aids in the rapid and accurate completion of the Project. These roles and responsibilities are listed below the organization chart.

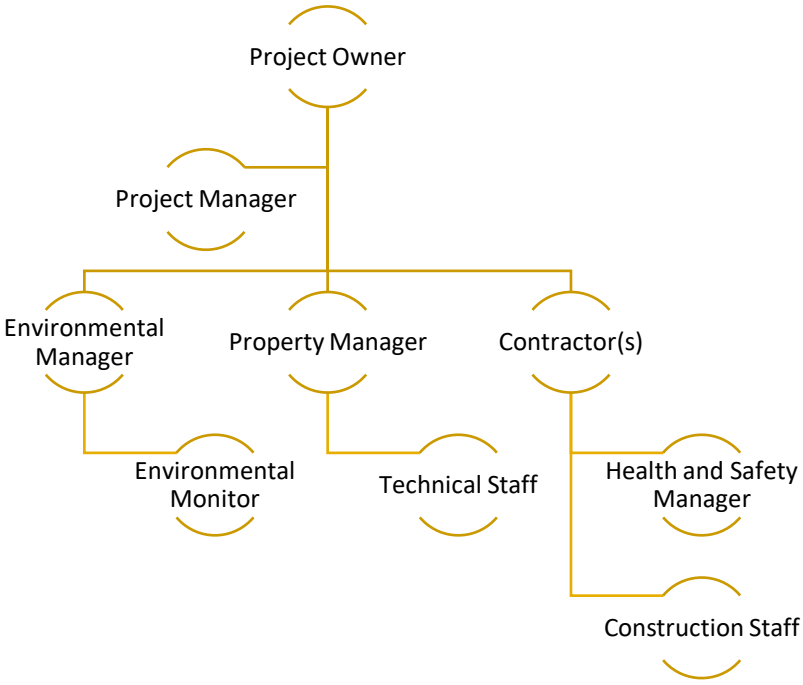


Figure 5.1. Organization Chart

5.2 RESPONSIBILITIES

Developer/Project Owner- The Project Owner is responsible ultimately for the environmental compliance of the Project. The Project Owner will liaise directly with DEPP, the Environmental Manger and/or Environmental Monitor as needed to ensure the Project remains in compliance with the EMP.

Project Manager - The Project Manager reports to the Project Owner and liaises regularly with the Contractor and the Environmental Manager to ensure all site activities are coordinated to follow the EMP. The Project Manager is also responsible for the Grievance Response Mechanism (GRM) for the site. If a grievance should be escalated to the developer, the Project Manager will

inform the developer as soon as possible. See Section 9 for a more detailed description of the GRM. Other responsibilities include:

- To ensure adequate resources are available to implement and maintain the EMP.
- Responsible for construction and operations phases of the project while applying necessities required to comply with the best management practices produced in the EMP document.

Contractors - The Contractors report to the Project Manager and will observe construction activities to ensure activities follow the various permit conditions, maintain site records pertaining to construction equipment and supply inventory and personnel on site. Additional contractor responsibilities include:

- Contractors will adhere to existing plans and procedures or prepare their own to meet the environmental requirements of the EMP.

Environmental Manager - The Environmental Manager reports to the Project Manager and oversees the Environmental Monitor. The Environmental Manager will liaise with the Project Manager and submit Environmental Reports to DEPP. Additional responsibilities include the following:

- To ensure full compliance and reporting relative to the approved EMP and the conditions associated with the Certificate of Environmental Clearance.
- To provide daily oversight of all environmental matters associated with construction activities.
- The engagement of the Environmental Monitor, which is subject to review by DEPP. Schedule training sessions with the Environmental Monitor and staff on the Project site about the conditions and strategies described in the EMP and policies.
- Respond to concerns and queries raised by DEPP, the Construction Manager, and the Environmental Monitor as soon as possible.
    - Investigate environmental incidents and develop action plans in collaboration with Environmental Monitor and Construction Manager.
- Oversee and enforce the implementation of the EMP including the monitoring, inspection, documentation, submission of turbidity logs, and all associated forms as needed.
- Adjust the EMP as required under the direction of DEPP.
- Implement the EMP in collaboration with the Environmental Monitor.
- Integrate environmental requirements and mitigation efforts into project planning, execution, and operation.
- Ensure project personnel are aware of environmental requirements.
- Provide monitoring form with provided guidelines outlined in the EMP.
- Submit reports and associated documentation to the DEPP based on reporting schedule.

Environmental Monitor - The Environmental Monitor reports to the Environmental Manager and liaises with the Construction Manager to ensure day to day activities follow mitigation strategies

described in the EMP. The appointed Environmental Monitor's CV will be submitted to DEPP once approved. Additional responsibilities include:

- The implementation of the EMP in collaboration with the Environmental Manager.
- Accompany the Project Owner, site safety officer and government agency inspectors (e.g. DEPP) during site visits.
- Full-time presence on-site to observe and/or inspect all environmental risks and/or conditions and to ensure that during daily operations all environmental requirements are achieved.
- Submit daily reports to the Environmental Manager no later than 24 hours after the end of the workday.
- Stay updated with environmental legislations and trends in the industry.
- Provide job training and assistance (as directed by the Environmental Manager) to team members when needed.
- Assist team in ensuring the site is safe, and correct protocols are followed in the EMP within 48 hours of an approaching hurricane or severe weather event.
- Assist the Health and Safety Manager in Hazard and Risk Identification.
- Monitor and provide reporting based on the EMP criteria and liaise with all parties on any matters arising from non-compliance.

Health and Safety Manager - The Safety Manager will report to the Project Manager and liaise with all other managers on the project for environmental compliance. Additional responsibilities include:

- Ensure that the safety measures explained in the EMP and by company standards are applied and followed by construction staff.
- Providing review and reporting of construction activities on site for safe operations based on environmental compliance.
- Monitor and liaise with all parties on any matters of non-compliance based on the site safety policy and procedures.

Property Manager - The Property Manager will report to the Project Manager and ensure that the technical staff follows best management practices outlined in the EMP as it relates to the operations phase of the Project.

Construction Staff - The Construction Staff will adhere to the requirements of the EMP as it relates to the construction phases of the Project, as instructed by the Contractors.

Technical Staff - The Technical Staff will adhere to the requirements of the best management practices outlined in the EMP as instructed by the General Manager.

5.3 Environmental, Health & Safety Training For Construction and Operational Staff

Environmental training for the construction staff will target species identification training for protected and invasive species that were observed on site, spill response training, and solid waste management for the site. Photos of protected species identified on site will be provided to the employees during the site orientation. Employees will be encouraged to avoid impacting these species as much as possible during their day-to-day activities. The Environmental Monitor and Site Manager should be notified immediately if one of the species have been impacted. Employees will be trained to use the spill kits on site, to complete the spill report form, and the incident report form.

The Developer's Health and Safety Program is shown in Appendix B. Workers and employees during operation will be trained on the implementation of the Health and Safety Program.

6 Environmental Impacts Summary

6.1 Methodology

The environmental impact analysis evaluates the potential impacts resulting from the interaction between project related activities and the surrounding environment during construction and operations phases of the Project. Impacts are described as changes brought about to the surrounding environment because of project related activities. Impacts were determined during biological resource surveys and site visits by BRON, and a review of the previously prepared Environmental Impact Assessment[10].

Project related activities have the potential to impact the surrounding environment negatively or positively and directly or indirectly. Negative impacts are activities which result in an adverse change or degradation from the environmental baseline, while positive impacts result in a beneficial change or improvement to the environmental aspect under consideration. Direct impacts result from the direct interaction between a project's related activities and the surrounding environment, while indirect impacts consequences of a project's implementation on the surrounding environment on a larger time and distance scale. Additionally, other parameters such as Significance, Duration and Intensity are used in determining the scale of environmental impact. The summary of positive and negative impacts and their description is discussed in the following table. A more detailed description of each category is provided in the Environmental Impact Assessment (EIA).

6.2 Environmental Impact & Mitigation Summary Table

Table 6-1. Impact Significance Key

Not Applicable / Negligible (White)	Minor (Yellow)	Moderate (Orange)	Severe (Red)	Beneficial (Green)

Table 6-2. Summary of Environmental Impacts.

Impact Category	Description of Impact	Mitigation Summary
Land Use • **Beneficial (Green)** • **Permanent**	Land Use will improve from a derelict abandoned polluted site to an income generating site with native landscaping. The property value of the existing middle-class community due to added amenities, such as proximity to employers, restaurants, mass transit, shopping, and recreation, and the presence of a marina.	N/A
Geology • **Moderate** (Orange) • **Permanent**	Excavation for building foundations and the pool will negatively impact the geology of the area by permanently altering the substrate.	Excavation should follow standard guidelines and requirements outlined in the Following the Bahamas Building Code 3rd Edition.
Water and Wastewater • **Moderate** (Orange) • **Permanent**	The water table may be impacted as designs call for 6 feet below ground grade excavation. Wastewater generated on site will be added to the WSC infrastructure. A beneficial long-term impact on the surface water stored in the adjacent wetlands can be expected resulting from the culvert installation.	The site will be elevated prior to excavation. Spill management will be implemented to ensure the quality of the water table. A culvert will be installed to improve water circulation to wetlands.
Terrestrial Resources • **Moderate** (Orange) • **Permanent**	Land clearing and excavation will remove habitat for wildlife species. However, the site is currently dominated by invasive species which will also be removed from the site.	Incorporate native plants in the landscaping of the site to increase biodiversity post construction. The removal of invasive species positively affects the current environment.
Marine Resources • **Severe (Red)**	Reducing habitat, generating noise, increasing light pollution, and generating temporary water quality	The Developer will support coral restoration efforts around New

• **Permanent**	impacts in the event of a spill during boat fueling, washing, repair and maintenance are negative impacts.	Providence under the direction of DEPP and DMR. Preclearing surveys cleaning debris, establishing a no wake zone in the marina, and maintain spill kits on site are a part of the mitigation strategy.
Air Quality • **Minor** (Yellow) • **Temporary**	Air quality will be temporarily impacted by particulate matter generated during construction. Materials and machinery moving around the Project site will cause dust and dirt to be dispersed.	Dust suppression via site watering Vehicle speed ≤15 mph on site Machinery that is not properly maintained may also negatively affect air quality and should be fixed immediately.
Noise Quality • **Minor** (Yellow) • **Temporary**	There will be temporary noise quality impact during construction.	Construction workers will wear suitable PPE.
Cultural Resources • **No Impact** (White)	No known archaeological, historical, or religious resources are expected to be disturbed.	Antiquities, Monuments and Museums Corporation (AMMC) of The Bahamas will be notified immediately if cultural resources are discovered during or post construction.
Socioeconomics • **Beneficial** (Green) • **Temporary**	The Project is expected to increase job opportunities due to temporary construction activities and permanent during operation. Thus, aiding in economic growth.	Not applicable
Energy • **Not Applicable** (White) • **Permanent**	The energy demand of the Project will increase the demand on the Bahamas Power and Light (BPL) infrastructure.	Energy efficient appliances will be incorporated in the design where possible.
Waste • **Moderate** (Orange) • **Permanent**	Increased waste will be generated on site during and post construction with the increased anthropogenic activities on site.	Construction debris will be sorted and collected on site in covered containers. Debris will be removed from the site regularly and will not accumulate on site.

7 MANAGEMENT PLANS AND MITIGATION STRATEGIES

7.1 BIOLOGICAL RESOURCE MANAGEMENT

Biological Resource Management (BRM) will involve capitalizing on environmental windows (opportune times outside of mating/spawning or migrating seasons) for valued ecosystem components (Nassau Grouper, Mangrove Cuckoo, White-crowned Pigeon, etc.), as much as reasonably practicable, to limit disturbances to the natural environment during construction and operational activities.

BRM for both the terrestrial and marine environment is directly related to the spill management and the management of the ambient environmental conditions. These are discussed in detail in sections 7.2 and 7.5.

7.1.1 Terrestrial Resource Management

Mitigation strategies for the removal of protected trees and terrestrial habitat will include the establishment of a native plant nursery, transplanting and relocating protected flora, collecting propagative material for ex-situ conservation, maintaining conservation corridors on site, and conducting preclearance surveys. Invasive species will also be replaced on site with native species as a part of the Terrestrial Resource Management. This is discussed in section 7.1.4.

Plant Nursery - To achieve the environmental goal of preserving genetic resources of the local plant population, it is crucial to source viable native plant material for development projects. The use of native plant material offers numerous benefits to both the project and the environment. The nursery will be used to transplant and relocate viable plants until replanting exercises commence. Native species of Palms, Bromeliads, Orchids, and other epiphytes have high transplant survival rates when best management practices are followed. Wild-sourced seed, seedlings, and saplings from the Project site should be utilized as propagative material for the establishment of native plant stocks. The native plant nursery will be staffed with personnel who are trained to identify protected species, properly collect propagative material, and cultivate each species in the nursery.

To maximize effectiveness of this mitigation strategy, the native plant nursery is to be established prior to major land clearing activity on the Legendary Marina at Bluewater Cay property. Plants harvested prior to the land clearing exercise on the site will be potted and cultivated until they can be transplanted to the site. In the event that more plants are cultivated in the botanical nursery than can be incorporated in the landscaping design of the site, the Developer proposes two options. The first is the native plants will be distributed to local establishments, and the second is the native plants will be made available for sale and the funds received from the purchase of nursery plants will be donated to local non-government organizations.

Conservation Corridors – Land clearing will involve the removal of important terrestrial habitat which will be mitigated by the maintenance of conservation corridors on site. Conservation Corridors are strips or patches of vegetation that connect isolated habitat fragments, enabling animals to move between habitats. Land clearing will result in habitat fragmentation, which will restrict the movement of animals. This can lead to population declines and loss of genetic diversity, which can ultimately result in the extinction of species. Conservation corridors can help to mitigate these negative impacts by providing a safe pathway for animals to move between habitats, thereby increasing connectivity between populations. This can help to maintain healthy populations and genetic diversity and reduce the risk of extinction. Conservation Corridors can also provide other benefits, such as promoting the dispersal of plant seeds and reducing the impact of edge effects (i.e., the negative impacts that occur where different habitats meet).
The removal of the broadleaf forest during the marina creation will introduce a marine habitat in an area previously utilized by terrestrial fauna and flora. Landscaping around the marina should include a buffer of native vegetation which will be maintained throughout the duration of the Project. Native plants that may be used during landscaping include the following species.

Table 7-1 Initial list of plants that will be incorporated in the Landscaping Plan.

Common Name	Scientific Name
Bay Cedar	*Suriana maritima*
Sea Rocket	*Cakile lanceolata*
Button wood	*Conocarpus erectus*
Sea Ox Eye Daisy	*Borrichia arborescens*
Red Mangrove	*Rhizophora mangle*
Sea grape	*Coccoloba uvifera*
White Sage	*Lantana involucrata*
West Indian Mahogany	*Swietenia mahagoni*
Narrow Leaf Blolly	*Guapira discolor*
Sea Purslane	*Sesuvium portulacasturm*
Black Mangrove	*Avicennia germinans*
White Mangrove	*Laguncularia racemosa*
Dogwood	*Piscidia piscipula*

Preclearance Survey Methodology - Preclearance surveys will be used to identify species and numbers of individuals on the site. Habitat loss will expose native animals resulting in increased human wildlife conflict as the wildlife may continue to visit the site during construction. Mitigation practices would involve training workers to identify, capture, and relocate wildlife, such as snakes, to comparable habitat well outside the construction zone. Native and endemic snakes should be placed in a breathable bag, such as a pillowcase or a container with holes so that the animals can breathe and be relocated. The work site will be surveyed for the following key species prior to commencement of clearing:

- Bahamian Racer (*Cubophis vudii*)

- White-crowned Pigeon (*Patagioenas leucocephala*)
- Bahamian boa (*Chilabothrus strigilatus*)
- Reddish Egret (*Egretta rufescens*)

7.1.2 Marine Resource Management

Marine Resource Management (MRM) will focus on preventing negative impacts, where possible, and mitigating unavoidable impacts. In addition to the use of environmental windows, turbidity curtains, preclearance surveys, habitat creation, and improving the connectivity between both mangrove habitats adjacent to the Project site, and the creation of living shoreline for mangroves are proposed mitigation measures for the Development. Environmental windows are periods of time known to be less active in a certain area for a species. Additionally, an Environmental Monitor should be present on site to prevent impacting turtles during construction.

7.1.2.1 Preventing Vessel Strikes

A vessel strike is a collision between a boat or vessel operating in the marine environment and a marine animal. Because Megafauna such as sharks and turtles were observed on the site, the Developer will post speed limits within the marina and discourage feeding and interactions with marine animals. Example signs are provided in the following images.

Figure 7.1. Example of signs to be used during operation.[7,8,9]

7.1.2.2 Preclearance Survey Methodology

Marine snorkel surveys will be conducted to avoid trapping megafauna between the coast, turbidity curtain, and dredge equipment. During preclearance surveys slow moving organisms will be relocated prior to dredging and land reclamation activities.

[7] Signs World Wide.com. 2023. https://www.signsworldwide.com/traffic-safety-signs/safety-slow-no-wake-zone-24h-x-36w.html Accessed March 4, 2023
[8] Dont-Grab-the-Baby-Turtles.jpg (6000×4000) (themaritimeexplorer.ca)
[9] 7fc4372f70d1796894925f0336d56021.jpg (764×1024) (pinimg.com)

Figure 7.2 Proposed relocation areas are shown in orange (Google Earth, 2022)

7.1.2.3 Turbidity Curtains

To prevent reduced water quality along the coast during the construction phase, a turbidity curtain will be installed prior to the start of the dredging activity. A Type 3 Turbidity Curtain for tidal waters will be installed parallel to the coast around the construction zone. Turbidity monitoring will be conducted throughout the dredging period to ensure the turbidity curtain is installed correctly. Proper dredging methods and equipment will be employed to reduce the potential for high turbidity in the water column (e.g., the cutter-suction dredger will not generate any suspended solids in the water column). The Turbidity Monitoring Report provided in the Appendices will be used to report to DEPP. The curtain will be inspected daily to ensure it remains functional. If there is a breach observed, the Environmental Monitor will work with the Project/Site Manager to repair the curtain as soon as possible. The incident will be reported to DEPP in the Environmental Monitoring Checklist (EMC), which is also provided in Appendix C.

7.1.2.4 Habitat Creation

To reduce marine habitat fragmentation, a sandy beach and a living shoreline will be created as a part of the Development. A sediment transport study was conducted to plan the beach creation exercise. The studies show the sand once deposited in conjunction with the groyne and breakwater system proposed should be retained on the site. Creating a sandy beach may lead to turtle nesting near the site in the future. In the event the Developer is made aware of this, the Developer will inform DEPP, the Department of Marine Resources (DMR), and the Department of Public Parks and Beaches as the beach will be a public beach. Each of these agencies are responsible for the management of the beach and or marine resources. Management of nesting that may occur on the beaches within the property will be guided by DEPP and DMR.

7.1.3 Protected Species Management

Terrestrial and marine protected species were identified during the environmental resource surveys. A total of thirty-two (32) species of birds were identified on site, all of which are protected in The Bahamas. To reduce the impact on the avian species pre-clearance surveys will be conducted and construction workers will be trained as described in section 7.1.1. Protected plants identified on site include Black Mangroves *(Avicennia germinans),* Buttonwood *(Conacarpus erectus),* Gum Elemi *(Bursera simaruba),* Silver Thatch Palm *(Coccothrinax argentata),* Narrow Leaf Blolly *(Guapira discolor),* Thatch Palm *(Leucothrinax morrisii),* and Sea Oats *(Uniola paniculata).* Protected plant mitigation will follow the guidelines of the Permit to Harvest a Protected Tree issued by the Forestry Unit. Additional efforts to reduce the impact to protected species, include the establishment of a "living shoreline" along the northern and/or southern coastlines of the marina entrance. Nassau Grouper (*Epinephelus striatus),* Green Turtle *(Chelonia mydas),* Manatee grass (*Syringodium filiforme*), Turtle grass (*Thalassia testudinum*) were identified during marine surveys.

7.1.3.1 Mangrove Mitigation Plan

The Developer will follow the guidelines described by the National Wetlands Committee in the National Wetlands Policy[21], which outlines the objectives of the Government of The Bahamas for wetland protection. The purpose of the policy is "to provide those responsible for administering the existing laws and regulations related to wetlands with guidelines and a course of procedure to ensure wetlands are managed in a sustainable manner." There are three (3) classification of wetlands in The Bahamas according to the National Wetlands Policy. The Developer aims to maintain the health of the mangrove habitat near its property by using the guiding principles of a Partially Protected wetland. A Partially Protected wetland is defined as, "a wetland capable of conservation by the local community and be in areas where persons who have property rights inland may carryout out traditional activities subject to such restriction as may be imposed by the permitting agency and other relevant government agencies. These wetlands shall be areas where regulated activities may be permitted."

The mangrove habitat immediately to the west of the site was historically connected to the coastline, as shown through a Google Earth historical image search. Water quality tests in the area indicate there is low circulation in the area. By installing a culvert, the Developer can improve circulation in the mangrove habitat. Mangroves seedlings and propagules will be collected for replanting to create new mangrove habitats in the living shoreline area. Restoring the historical flushing characteristic of the larger mangrove system as a whole will have a large positive impact on existing mangrove habitat to the west to the west of the project site, reducing mosquito breeding areas and improving water quality of the wetland, and will create fish nurseries that do not exist today. This is an important part of the Project mitigation measures to offset the environmental impact on removal of mangroves south-west of the proposed beach island. This process will be guided by The Forestry Unit and The Department of Environmental Planning and

Protection. The biodiversity and health of the mangrove wetland habitat and water quality will be monitored during the construction and operation of the proposed culvert.

7.1.3.2 Coral Mitigation Plan

Due to the prevalence of the Stony Coral Tissue Loss Disease (SCTLD) in The Bahamas and the suspected presence of SCTLD on site, the Developer will focus coral mitigation on supporting the ongoing coral restoration efforts around New Providence. The Developer is willing to collaborate with the Bahamas National Trust (BNT), the Bahamas Reef Environmental Educational Foundation (BREEF), and the Reef Rescue Network in one or more of the following activities throughout the operation of the Development.

- Financing establishing new coral nurseries.
- Monitoring established coral nurseries.
- Financing the coral transplanting from established coral nurseries to restoration sites.
- Monitoring coral restoration site.

7.1.4 Invasive Alien Species Management

Throughout construction and operation of the Development, the invasive alien species (IAS) management will incorporate recommendations from the 2013 Bahamas National Invasive Species Strategy (NISS)[10], which focuses on eradication of invasive species where possible, and preventing re-establishment and introduction of invasive species. The following section describe the removal, prevention, and management of the invasive species discussed in the Environmental Impact Assessment (EIA). Botanical invasive species identified on the Project site were the Hawaiian Lettuce *(Scaevola taccada)*, Australian pine, (*Casuarina equisetifolia),* Brazilian Pepper *(Schinus terebinthifolia), Jasmine Vine (Jasminum Fluminense),* and Jumbey *(Leuceana leucocephala), Snake Plant (Sansevieria trifasciata),* and *Elephant Grass (Pennisetum purpureum).* During operation, native vegetation will be maintained on site by the landscaping team to prevent the return of invasive species. The landscaping team will be trained to identify invasive species to facilitate prompt removal of new plants to the site, thus preventing the invasive species from becoming reestablished on the property. Once an invasive species is identified, it will be manually removed by the landscaping team and transported to landfill by a local contractor.

All invasive species will be pushed down by heavy equipment during land clearing. Once the plants are felled, they will be temporarily stockpiled on site removed from the coastline. The stockpile will be transported to the New Providence Ecological Park.

In order to replace the invasive species eliminated from the site, native plants will be planted. Because of the native plants, there will be less room for invasive species to repopulate the area. The landscaping crew will receive training in identifying invasive species and instructions on how

[10] Moultrie, S. (2013). The Bahamas National Invasive Species Strategy 2013. Nassau: Department of Marine Resources. http://extwprlegs1.fao.org/docs/pdf/bha175843.pdf

to get rid of seedlings if they appear on the job site while it is being worked on. Along with other site-related detritus and solid garbage, the seedlings will be brought to the dump.

The proposed list of native plants considered is below. The final decision on which plant will be selected from the list below will be determine in collaboration with DEPP and the Environmental Monitor and will also be based on availability. In some of the areas and in other areas the frequent pedestrian and vehicular traffic will prevent the re-establishment of the species on site.

Table 7-2. List of Native Plants

Scientific Name	Common Name
Scaevola plumieri	Inkberry (the native Scaevola)
Uniola paniculata	Sea Oats
Ambrosia hispida	Bay Gerina
Strumpfia maritima	Strumpfia
Lantana involucrata	White Sage
Baccharis dioica	Broombush
Salmea petrobioides	Bush Salmea
Sporobolus virginicus	Seashore Rush Grass
Heliotropium curassavicum	Seaside Heliotrope
Ipomoea macrantha	Moon Vine
Ipomoea pes-caprae	Railroad Vine
Jacquinia keyense	Joewood
Opuntia spp.	Prickly Pear
Turnera ulmifolia	Bahamian Buttercup
Crossopetalum rhacoma	Poison Cherry
Suriana maritima	Bay Cedar
Canavalia rosea	Bay Bean
Chrysobalanus icaco	Cocoplum
Cakile spp.	Sea Rocket
Coccoloba uvifera	Sea Grape
Yucca aloifolia	Spanish Bayonet
Cocos nucifera	Coconut Palm

Spartina patens	Saltmarsh Cordgrass
Hymenocallis caribaea	Spider-lily

7.2 Management of Ambient Environmental Conditions

7.2.1 Air Quality Management

During the construction period, the site will be temporarily impacted by air pollutants such as particulate matter from dust, sand, and fossil fuel emissions. Construction should cease if wind speeds increase to 20 mph and remain at this speed for over an hour (U.S. Department of Transportation & Caltrans, 1993, p. 90)[11]. On-site vehicles should follow the speed limit of 15 mph to prevent unnecessary particle movement. Regular maintenance of on-site construction vehicles and equipment is required to prevent the frequency of fuel exhaust, which may contribute to reduced air quality.

An air quality monitor will be used during site visits to record the baseline air quality and monitor air quality during construction to ensure air quality is not severely impacted. Monitoring the air quality will help the Environmental Management team address changes in the air quality as soon as possible. Measurements will be recorded in the EMC. The following table outlines the prevention methods to help maintain good air quality on the site during construction.

Table 7-3. Air Quality Management.

Prevention	Description of Prevention Method
Dust Suppression	Material will be transferred slowly from transportation vehicles to stockpile locations. Material will not be transferred during windy periods. This will be determined by the Environmental Monitor and the Site Manager collaboratively. The maximum speed permitted on site is 10 mph. Landscaping at the site will be completed prior to the close of the construction site and opening of the Development. As a result, dust generated during this activity should not impact the site post construction. Air quality readings will be recorded at least once a week for a month after construction has ended to ensure residual construction dust does not impact the site during operation. The measurements will be compared to the baseline measurements taken prior to the start of construction.
Fumes / Exhaust Prevention	Equipment will be maintained regularly by local contractors to reduce emissions. Fuel will only be kept in sealed fuel storage containers.

[11] U.S. Department of Transportation & Caltrans. (1993). Environmental impact statement/environmental impact report: Volume II: Route 168 between route 180 and temperance avenue.

Odor Control	Solid waste will be removed from the site on a timely basis. Portable toilet units will be emptied and cleaned on a regular basis during construction. See section 7.6 Waste Management for more detailed information.

7.2.2 Noise Quality Management

Noise can be defined as "any unwanted sound." Operating heavy equipment will temporarily increase the noise on site during construction. Noise will cease once construction is complete. Noise during construction can impact construction workers. Medical authorities state that continuous exposure to noise levels above 90 DBA for eight-hour days, five days a week may endanger a person's hearing. The safe period of exposure to a noise level is directly related to the level of noise. Protection against the effects of noise exposure shall be provided when the sound levels exceed those shown in the following table when measured on the A-scale of a standard sound level meter at slow response.

Table 7-4. Permissible Noise Exposure

Exposure Per Day (Hours)	Sound Level DBA in Hours
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

When employees are subjected to sound levels exceeding those listed in the table above, the following steps should be taken.

- Feasible engineering controls shall be utilized to reduce or attenuate the noise levels enough that hearing protection is not necessary or is minimally required. For short term projects, engineering controls are not cost effective and proper ear protection is required. Engineering controls refers to equipment repair, and or replacement of equipment to reduce noise caused by poorly maintained equipment.
- Personal protective equipment (PPE), such as earmuff or ear plugs, shall be provided and used to reduce sound levels within the levels of the table above. The proper individual fitting of both types of ear protectors is critical as any leakage can seriously impair efficiency.

7.2.3 Water Quality Management

Construction operations shall be conducted in a manner to minimize turbidity and shall conform to all water quality standards as may be prescribed in the Government permits. It is required that background turbidity levels be established twice per week, for two weeks (minimum of 4 separate readings) prior to the commencement of any coastal construction. These results must be sent to the Department of Environmental Planning and Protection one week prior to the start of construction.

Once Construction has started there should be Type III turbidity curtain required in the areas of active construction along the coastline to minimize adverse impacts to the marine ecosystems adjacent to the site. The turbidity curtains will remain in place after construction until which point it is observed that the turbidity within the curtained area has returned to levels similar to ambient conditions observed outside the construction area.

7.3 GEOLOGICAL MANAGEMENT

Geological management involves the responsible use of geological resources and measures to mitigate the environmental impact of resource extraction and to protect the health and safety of workers and local communities. By incorporating geological management into the construction process, potential risks and hazards can be identified and addressed ensuring the safety of workers and the surrounding community.

Site investigation and analysis – A Geotechincal Investigation Report (GIR) was conducted prior to construction to identify unstable soil or rock formations, and underground water. This information was used to design appropriate foundations and ensure the safety of the building. The recommended design soil parameters are provided in the following table. Based on the GIR, impermeable walls should be constructed to retain the earth at the perimeter of the proposed marina. An excerpt from the GIR follows the table.

Table 7-5 Recommended Design Soil Parameters

Angle of Internal Friction (ϕ,°)	Unit Weight (lb/ft^3)
30	95

> “The weakly cemented nature of the substrate makes it susceptible to erosion over the years, which could cause failure of the wall. Due to the commercial/industrial nature of the project, erosion could be accelerated as a result of propeller wash from maneuvering vessels.

> The density of the substrate suggests that a cantilever wall system could be used for most of the wall length. Such systems include steel sheet piles (SSP) or a king post wall system, which is comprised of steel or concrete cantilevered piles at a specific spacing, with concrete panels
> between.
>
> The walls may need to be anchored in areas where high surcharge loads are expected, i.e., the location of the travel lift piers. This will depend on the design of the travel lift system, and the anticipated loads induced on the soil within its proximity. The system can be designed to reduce or eliminate active forces on the retaining wall. The proposed design is not known at the time of writing this report.
>
> Due to the commercial/industrial nature of the proposed development, it is recommended that the walls be designed with a minimum surcharge of 200 psf."

Engineering design – The design of the building or structure should take into account the geological characteristics of the site. For example, the foundation design should consider the soil properties, the potential for settlement, and any other site-specific conditions. A combination of shallow (spread footings) and deep foundations will be incorporated in the construction. In the event soil is deemed unstable, soil stabilization should be completed. Soil stabilization will help prevent foundation settlement. The relevant excerpt from the GIR is provided below.

> "Based on the existing ground elevations, fill material will likely be required to backfill the foundation within the footprint of the proposed buildings.
>
> Fill material should consist of inorganic granular soils free from deleterious materials and should be approved by our firm. Backfill should have a maximum particle size of 3 inches. Limestone fill material should be placed in lifts not thicker than 12 inches. Lifts should be moisture conditioned as required. Each lift should be compacted to field dry densities of not less than 95 percent of the material's maximum dry density as determined by the Modified Proctor Compaction Test (ASTM D-1557).
>
> The fill and backfill material must be placed under qualified engineering inspection and each lift must be tested to ensure conformance with the project specifications. In restricted areas where a small compactor must be used, the lift thickness should be reduced to 6 inches."

Slope stability - Slopes can be a significant geological hazard during construction. Utility trenches should be located such that the bottom of the trench does not intersect a 1:1 slope projected

downward from nearby footing bearing surfaces. Trench backfills should be compacted. As it relates to water and sewerage, trenches shall be excavated to a minimum width of 12" plus the nominal pipe diameter (6” each side), and to a depth 4" deeper than the pipe invert for 4” diameter pipe or less, and 6” for all others. The bottom of the trenches shall be properly cleaned and leveled and selected granular material (to the Corporation's approval), ¾” pea rock or sand provided under the pipes. The Corporation's Engineer may approve the use of alternative fine material for bedding in certain circumstances.

Sedimentation Pond / Detention Basin - Sedimentation ponds are designed to allow water to flow into the pond and remain there for a period of time. During this time, the sediment settles to the bottom of the pond, and the clear water on top will then be discharged.

Erosion Control - The topsoil will be exposed after land clearing and eliminating the IAS, which may cause erosion. The location shown in the following figures shows signs of deterioration evident on site and demonstrate the need for active erosion control.

Figure 7.3. (Left) Casuarina with notable erosion. (Right) Existing habitat on the peninsula displaying erosion.

Erosion control during construction is the implementation of measures to prevent or reduce the amount of soil erosion that occurs at a construction site. Soil erosion occurs when soil is washed away by water or wind, which can damage to nearby marine and wetland environment. To lessen the total surface area exposed at once during construction, the land clearing will be completed in stages and native plants will be incorporated in the landscaping to minimize severe erosion. Stabilization of exposed soil may also involve covering the exposed topsoil with mulch. Silt fences will temporarily be installed along the perimeter of a construction site to prevent sediment from leaving the site. Silt fences are typically made of permeable fabric that allows water to pass through, but traps sediment. Proper drainage control, such as drainage ditches, swales, or temporary berms, can reduce the amount of water that flows over the surface of the construction site.

7.4 Energy Management

The site contains previously installed utility infrastructure. The Developer intends to purchase energy from Bahamas Power and Light Co. Ltd. (BPL). Solar panels and accompanying battery cells, or other renewable energy sources, will be appropriately sized to provide a minimum of 30% of the power demand of the marina. The following measures will be used to reduce the energy demand on site.

- Optimize start-up time, and equipment sequencing
- Visually inspect insulation on all piping, ducting, and equipment for damage (tears, compression, stains, etc.)
- Repair leaking faucets and equipment
- Turn off lights when not in use or when natural daylight is sufficient.
- Conduct a nighttime audit to ensure lights and or other equipment that should be powered off is not powered on.
- Automatic switch to a low powered sleep mode will be activated for devices.
- Energy efficient devices will be purchased where possible.
- Water saving devices will be incorporated throughout the design.

7.5 Spill Management Plan

The Spill Management Plan includes spill prevention measures, clean up, and mitigation. The Spill Prevention, Control and Countermeasures (SPCC) Guide for Marinas and Boat Owners and the Marina Spill Prevention by the Florida Department of Environmental Protection was used to develop the following sections.

7.5.1 Spill Prevention Measures

To prevent spills during construction the guidelines described in the table below will be followed on site. The Environmental Monitor will ensure the guidelines are followed. The Spill Management Plan is already part of the Legendary Operation and Maintenance Plan (OPM), which will be incorporated in the EMP (see Appendix B for details). Construction Contractors and Subcontractors will typically develop additional spill prevention measures during construction based on the project activities as construction progresses.

Table 7-6 Spill management.

Spill Prevention	Required Equipment
Place drip trays beneath taps and valves and use overflow and drop containment measures at connection points or at other possible overflow points.	Drip trays
Secure the fuel and chemical storage area to prevent vandalism and damage of storage containers. An impermeable liner will be placed under storage containers in the back of house area and a secondary spill containment will be used.	Impermeable liner Spill berm

Use caution during hand transfer of fuel from storage containers to refuel equipment. Use a funnel to reduce the chances of leaks or spills.	Fuel storage containers Funnels
Fuel will be stored and transported in designated fuel storage containers. The containers will be covered until the fuel is needed for refueling.	Fuel storage containers Funnels
Do not store fuel or oil in damaged, unsealed containers. If a container is damaged, place the damaged container in an overdrum to prevent spills or leaks.	Overdrum
Use spill pallets and safety storage platforms when fuel / chemicals are transported around the site.	Spill pallets Safety Storage platform
Equipment will be maintained and serviced regularly by a local contractor to prevent leaks.	N/A
Equipment and vehicles will be repaired at a designated location on the construction site. The site will be lined with an impermeable liner to prevent oil, gas, diesel, etc. from percolating through the surface. If equipment repairs must be made on-the-spot, mechanics will use an impermeable liner during repairs to prevent contamination of the ground.	Impermeable liner Spill berm
Material Safety Data Sheets (MSDS) will be available on site. SDS will be available in the site office and near the respective storage areas for the fuel and chemicals.	MSDS will be available on-site during construction.

- Emergency shut off valves will be installed and made accessible in the event fuel supplies need to be shutdown. Marina managers will be trained to use the emergency mechanism.
- The fuel dock and storage sites will be inspected regularly to identify areas in need of repair to prevent the development of leaks.
- Fuel will be stored in double-walled underground storage tanks, and quantities will be monitored using a meter, to minimize leaks and contamination to the environment.
- After storms, the fuel dock, storage tank, and sewerage pump out station will be inspected before the marina reopens to repair damaged areas to prevent leaks in the marina.
- A site diagram identifying the location of the fuel storage tanks will be available on site. The diagram will identify locations of valves, vents, and lines. During spill reporting, the site diagram will be used to identify the origin of the spill.
- Secondary containment will be provided around fuel, oil, or chemical storage containers.
    - Secondary containment will consider the total possible size of the spill. If a container stores 55 gallons of fuel, the secondary containment used will be capable of storing 55 gallons of fuel.
    - Secondary containment areas for outdoor locations should be covered and dry. For example, a roof or waterproof tarpaulin could be used.

- The Marina manager will notify the local Department of Environmental Health Services office of the spill at 1 (242) 323-2295. If the spill is located in the marine environment, the manager will also notify the Department of Marine Resources at 1 (242) 393-1777
- Once the spill is cleaned, the impact of the spill will be assessed by taking photos and listing the species and habitat impacted by the spill. Once the impact is measured, the mitigation plan will be developed with the Department of Environmental Planning and Protection. The Environmental Monitor and Site Manager will oversee the cleanup and implementation of the mitigation strategy on site.

7.5.2 Spill Cleanup Plan

In the event of a spill, the spill will be monitored and reported using a form similar to the one shown in the following figure. The spill should be reported to the Site Manager / Environmental Manager and contained immediately. Boaters will be encouraged to report spills to the marina office or other marina staff as soon as possible. All marina staff will be trained to clean up spills. If the spill cannot be contained, this information should be communicated to the Site Manager who will contact the relevant Emergency Personnel.

Form 7.1 Example Spill Report Form.

Date: _____ Weather Conditions: _____
Staff on Duty: _____
Contact Information: _____

Spill Details
Type of Spill/Product: _____
Description of Spill Location of Spill: _____
_____
Spill Estimated Quantity: _____
Remediation Method: _____
Disposal Method: _____
Cause of Spill:
_____
_____
_____
Prevention Method Employed: _____
_____
Please identify spill location on the map provided below:

Notes: _____

_____

_____

Please attach photos of spill activity.
Signed by:

_____
Site Safety Manager

Mobile Universal, Hazardous Material (Hazmat) and Oil spill kits will remain on-site during construction and operation in the back of house area and near the fueling stations in the marina to clean up accidental oil or fuel spills. Employees will be trained in the proper use of spill kits and reporting requirements. During site induction training, employees will be made aware of the location and type of the spill kits. Appropriate signage, similar to the poster shown in the following figure, with instructions will be installed near the spill kits to identify the various types of kits.

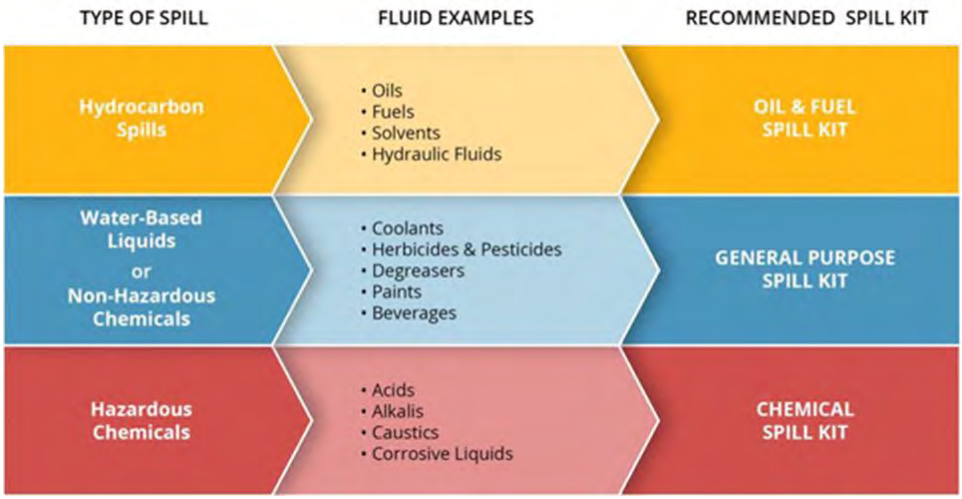


Figure 7.4. Example of the type of sign that will be installed near the spill kits.

Universal Spill Kit Supplies – This kit will be used for non-hazardous types of liquids (e.g., coolants, solvents, and antifreeze). The kit will include:

- 30-gallon overpack salvage drum
- Universal sorbent socks
- Universal sorbent pillows
- Gloves
- Safety goggles
- Disposal bags Oil Spill Kit – Used for grease and oil-based liquids (e.g. hydrocarbons and grease)
- Sorbent booms for oil/fuel containment and recovery in the marine environment.
- Oil-only sorbent socks
- Goggles
- Disposable bags
- Oil-only defender pads
- 5–30-gallon container with screw-top lid. Hazmat Spill Kit – Used to absorb aggressive, corrosive liquid chemicals. This can also be used to absorb water and oiled based liquids.
- Absorbent pads & socks
- Caution tape

Once a spill is identified the following steps will be taken.

1. The source of the spill will be identified and stopped immediately. All personnel shall wear suitable safety gear before approaching fuel or other hazardous waste material.
2. On site spills will be classified as either marine or terrestrial based on the location of the spill. Staff will be trained on the identification and removal of spills on site (both marine and terrestrial).

3. The type of fluid will also be identified to determine which spill kit should be used to clean up the spill. Construction staff training will include identification of the various spill kits on site, and which is appropriate for each type of spill. This training will also include the donning of proper Personal Protective Gear (PPE) prior to clean-up activities to avoid health and safety issues associated with fuel, oil, or hazardous waste substances. A spill management form will be used to record the incident and identify staff on duty.
4. Once identified, proper containment practices and materials will be used to remove the spill within the affected area as quickly as possible. All personnel will be trained to use the different types of spill kits on site.
5. The spill extent and type will be photo documented.
6. Photos will be taken after the spill is cleaned.
7. A report will be submitted to DEPP and the Department of Environmental Health Services (DEHS). The report will estimate the volume of oil, fuel etc. spilled.
8. The used spill kit will be disposed of according to the directive of the local DEHS office.
9. Mitigation and remediation efforts should be made within the impacted environment.
10. Regular inspections within the impacted area should be made and documented to give an account of the existing environment after the clean-up.

Figure 7.5. Example of spill kit[12]

7.6 WASTE MANAGEMENT

7.6.1 Solid Waste Management

Solid waste collected during construction and operation will be collected in covered trash receptacles on site, then emptied in a skip on site which will be transported to the New Providence

[12] https://www.spillcontrolcentre.co.uk/news/2015/02/spill-kits-effective-spillage-clean-options/

Ecology Park by a local contractor. During construction waste will be collected in one designated, clearly labelled space on the construction site. Other debris will be collected in smaller covered containers located on site, then emptied into larger solid waste containers or skips on site. A Waste Report Form similar to the form shown below will be completed as the skips are removed from the site during construction and operation. Waste will be categorized based on the type of material described below.

- Construction – plastic, paper, concrete, rebar, metal, wood, rubber, hazardous waste, paint, and vehicle fluid.
- Land Clearing – debris generated from vegetation clearing and invasive species removal.
- Domestic waste – includes plastic, glass, cardboard, paper, rubber, and other household waste.

Form 7.2. Example Solid Waste Reporting Form. The "Land Clearing" option will be replaced with the "Landscaping" during operation.

Solid Waste Reporting Form

Date: _____

Vehicle License Plate Number: _____

Name of Company: _____ Name of Driver: _____
Waste truck covered: Yes ☐ No ☐

Waste Type: _____
Origin: Construction ☐ Land Clearing ☐ (During Construction)

Domestic ☐ Landscaping ☐ (During Operation)

Estimated Volume of waste (Cubic Yards):
_____

Notes:
_____
_____
_____

Signed by: _____ _____ _____
Print Name Signature Position

7.6.2 Wastewater Management

Procedures for collecting, treating, and disposing of wastewater will be determined prior to the start of construction to avoid wastewater from entering the marine environment and the adjacent wetlands. Every effort will be made to reduce wastewater generated during construction and operation. During construction, portable toilet units will be made available for construction personnel. These will be cleaned and emptied by a third-party contractor at regular intervals. The portable units will be removed from the site once construction is complete. Wastewater generated during operation will be managed via Water & Sewerage Corporation. The Domestic Water & Sanitary Sewer Designs are included in Appendix D.

7.6.3 Hazardous Waste Management

According to the United States Environmental Protection Agency (EPA), hazardous waste is defined as waste that meets the characteristics of a hazardous waste. A characteristic of hazardous waste is a property when present in waste, indicates that this particular waste product poses a sufficient threat to merit regulation as hazardous[13]. EPA established four hazardous waste characteristics: ignitability, corrosivity, reactivity and toxicity.

- Ignitability – Wastes that are hazardous due to the ignitability characteristic include liquids with flash points below 60 °C, non-liquids that cause fire through specific conditions, ignitable compressed gases, and oxidizers.
- Corrosivity – Wastes that are hazardous due to the corrosivity characteristic include aqueous wastes with a pH of less than or equal to 2, a pH greater than or equal to 12.5 or based on the liquids ability to corrode steel.
- Reactivity – Wastes that are hazardous due to the reactivity characteristic may be unstable under normal conditions, may react with water, may give off toxic gases and may be capable of detonation or explosion under normal conditions or when heated.
- Toxicity – Wastes that are hazardous due to the toxicity characteristic are harmful when ingested or absorbed. Toxic wastes present a concern as they may be able to leach from waste and pollute groundwater.

Proper handling and disposal of hazardous waste on site consists of the presence of properly trained staff that is equipped with adequate personal protective equipment (PPE). This includes protective eyewear, gloves, masks, mask filters and full body disposable suit as illustrated in the following figure. Any hazardous waste generated on property will require notification to DEPP and the Department's approval regarding disposal. Adequate disposal will consist of properly sealing the hazardous waste and transported in a secured vehicle to the local landfill.

[13] *https://www.epa.gov/hw/defining-hazardous-waste-listed-characteristic-and-mixed-radiological-wastes#characteristic*

Figure 7.6. Example of Hazardous Waste PPE[14]

7.7 Climate Change Adaptation Strategy

The site elevation is designed to withstand the impacts of severe weather events (e.g., storm surge and high waves and winds). The Boat Dry Storage Building is a category 5 hurricane design. Coastal protection structures (seawalls, breakwaters, groins, and revetments) will be installed to protect coastal & marina structures.

7.8 Transportation Management

A Traffic Impact Assessment (TIA) was conducted and indicated insignificant impacts to the study areas. It is expected that the Development may result in delayed southbound right-turn movements on Fox Hill Road South and Seabreeze Lane. Similar delays are expected to occur on Fox Hill Road South and the Marina Resort Access. The TIA recommends on Fox Hill Road, where the right-of-way permits, a separated right turn lane with a storage length of 100 feet be installed. Further at the southwest and southeast quadrants of the Seabreeze Lane and Fox Hill Road south intersections, it is proposed that perimeter walls be pushed back to improve sight distance at those intersections.

It is also noted that the amenities provided will reduce the trips into and out of the development; many customers are expected to retrieve their boats from the boat storage and travel to another island to vacation.

[14] https://ppesuppliesdirect.com/collections/ppe-kits/products/hazardous-environment-kit

Figure 7.7. Traffic Impact Assessment Recommendation.

Local communities will be made aware of any unavoidable temporary restriction to traffic access via appropriate signage. The Contractors will ensure that site traffic management includes:

- Designated haul routes,
- Maintenance of low speeds on site,
- Traffic control on site at all times,
- Securing the sites to prevent pedestrians from traversing the sites,
- Ensuring that all workers wear high visibility vests,
- Training all workers in traffic hazards on sites in an effort to avoid injury or loss of life.

Marina construction and operation activities may affect marine traffic. Therefore, suggested passage routes should be outlined and communicated to boaters within the community prior to the start of construction. Furthermore, appropriate signage should be placed in visible areas for boaters to be made aware of construction activities and diverted routes. Communication can be made via VHF radio frequency to alert boaters of construction activities. During operation, the area is expected to increase visitation and marine traffic volume.

Where possible, construction materials deliveries will be made by water, thus reducing the construction-related road traffic impact considerably.

8 EMERGENCY, HEALTH AND SAFETY

8.1 TRAINING

During construction, workers would be trained in proper tool operation and safety, handling of materials, driver safety and knowledge of first aid and safety response. New hires will complete appropriate segments of training required for their specific duty assignments within 30 days of starting work. The training course will include the following elements.

- Identification of the Spill Response Team members and their respective responsibilities
- Project spill prevention, response and reporting procedures; and
- Discussion of good housekeeping practices

According to the Occupational Safety and Health Administration (OSHA)[15], general employee training should address "individual roles and responsibilities, threats, hazards, and protective actions, notification, warning, and communications procedures; means for locating family members in an emergency; emergency response procedures; evacuation, shelter, and accountability procedures; location and use of common emergency equipment; and emergency shutdown procedures."

Additionally, a minimum of two employees will be trained in first-aid procedures and at least one employee will be trained in methods for preventing unauthorized access to the site. These aforementioned training areas are described below. The Emergency Action Plan was adapted from OSHA's "How to Plan for Emergencies and Evacuations" and the Incident and Emergency Action Plan template[16] prepared by the Centers for Disease Control and Prevention (CDC).

Site Orientation - During site orientation, personnel will be made aware of operating hours and site rules which include but is not limited to wearing Personal Protective Equipment (PPE) at all times. An example of PPE required on site is shown below.

[15] *Occupational Safety and Health Administration (OSHA, 2001) How to Plan for Emergencies and Evacuations"* https://www.osha.gov/sites/default/files/publications/osha3088.pdf
[16] *Centers for Disease Control and Prevention. Emergency Action Plan Template.* https://www.cdc.gov/niosh/docs/2004-101/emrgact/emrgact.pdf

Figure 8.1 Example of PPE[17]

Training will also include ensuring employees know the location of the sanitization stations, emergency equipment including spill kits, establishing muster locations, evacuation routes, and the EMP document. Muster locations and evacuation routes are being established.

8.2 HURRICANE AND STORM MANAGEMENT

In The Bahamas, tropical storms and hurricanes are the predominant type of storms experienced. Tropical storm systems progress to hurricanes as they intensify in wind speed. As a result, construction sites require hurricane preparedness and action plans in the event of extreme weather events. An employee will be assigned the role of storm tracker who will be responsible for notifying the Site Manager of the storms progress. Once a Hurricane Warning is released by the Bahamas Department of Meteorology (http://www.bahamasweather.org.bs/), the hurricane prepared plan will be initiated. The Site Manager will assign a person in charge who will be responsible for implementation of the Hurricane Plan. The Hurricane Plan is a series of checklists to make preparing for and recovering from the storm as straightforward as possible. There will be weekly check in meetings place during the Hurricane season (June 1 to November 20), to discuss the Hurricane Plan and the team members' roles and responsibilities.

[17] *http://www.mnltap.umn.edu/topics/workplace/personal_protection_equipment/*

Before the storm checklist:

- Make a list of names, addresses and phone numbers for vendors and contractors who can provide recovery services or supplies.
- Keep evacuation routes open for all vehicles.
- Fully charge all devices and batteries.
- Remove loose jobsite materials and debris that could become projectiles and clean the jobsite daily.
- Have garbage in dumpsters and other containers consolidated and properly disposed and remove dumpsters from the site.
- Move materials that cannot be relocated or secured otherwise to shipping containers/storage boxes. Cover all materials that cannot be relocated and elevate them to at least 4 inches above the floor to reduce water damage exposure.
- Ensure that construction trailers and shipping containers/storage boxes are properly anchored and tied down. If anchors are not available, use concrete filled drums with embedded reinforcing steel loops and tether at least at three locations for each trailer or storage container.
- Stop all material deliveries.
- All construction equipment mats should be tied together and anchored.
- Make a video/photographic record of the jobsite and surrounding properties to document the project condition and status prior to the storm.
- Fuel all vehicles and emergency equipment (such as generators)
- Once the site is secure, instruct subcontractors and employees to vacate the jobsite and not to return until the danger has passed.
- Establish a meeting place, if possible, for key recovery members.

8.3 Safety Hazards

Managers are responsible for:

- Ensuring employees under their supervision receive the required training.
- Providing training for the jobsite to ensure that all employees understand the protocols, timeline and responsibilities.
- Ensuring that all equipment is inspected and tested at least monthly, or sooner if required, by a responsible individual.
- Ensure that all subcontractors have safety plans and have identified a responsible individual for the management and implementation of their plans.
- Conducting a hazard assessment using the Hazard Assessment Form in Appendix E.

Staff are responsible for:

- Listening to the daily instructions and asking questions if they do not understand.
- Inspecting any equipment assigned to them to make sure it is working properly and is not damaged.

- Watching for and reporting any unsafe conditions.
- Not doing any job asked by someone other than their supervisor(s)

8.4 Fire/ Explosion Risk

Project personnel will be trained in fire/explosion prevention and response.

- No burning or smoking will be allowed on the Legendary Marina at Bluewater Cay construction site.
- Fire extinguishers will be accessible at all times at designated muster stations on site.
- No burning, welding, or other source of ignition shall be applied to any enclosed tank or vessel, even if there are some openings, until it has first been determined that no possibility of explosion exists and authority for the work is obtained from the foreman or Supervisor.
- Employees should be aware of the locations of fire extinguishers that have been provided throughout the project and know how to use them. A five-pound ABC rated fire extinguisher must be readily available while welding, burning, cutting, or using flammable gases or liquids. Smoking is not permitted around gasoline or other flammable liquids or gases.
- Equipment must be turned off before refueling.
- Gasoline must be stored and transported only in approved safety containers and gasoline must not be used for cleaning purposes. Compressed gas cylinders must be kept secured, upright, capped and separated when not in use. Empty gas cylinders should be marked and returned to the storage area for pickup.

8.5 Accidents and Emergencies

An emergency is an unforeseen combination of circumstances that calls for immediate action. An emergency generally creates a sense of panic and confusion at a time when prompt action and clear thinking is essential. In an emergency, seconds can be the difference between life and death. That is why it is important to be prepared for emergencies that can occur. Potential emergencies that are possible at the workplace include:

- Trench collapse or cave-in.
- Fire
- Hurricane
- Chemical spill, leak, or threatened release explosion.
- Power outage
- Others (e.g., flood, earthquake, bomb threat, domestic terrorism, etc.)

This Emergency Action Plan was developed for the safe and efficient egress of employees & visitors during an emergency. This Emergency Action Plan is designed with three fundamental objectives.

1. To facilitate the safe evacuation of company employees to a pre-designated safe meeting point in the event of an emergency to ensure that all our employees are accounted for.
2. To minimize the potential for personal injury during an evacuation.
3. To establish methods or procedures to minimize loss of property including buildings and equipment.

8.5.1 Site Supervisor Responsibility

It is the responsibility of the site supervisor to ensure the overall implementation of the Emergency Action Plan and to direct the following tasks for the project site:

- Identify and evaluate potential emergencies at the project site that may require personnel evacuations.
- Establish and/or review procedures for emergencies.
- Ensure that employees receive training on this program and that the training is up to date;
- Ensure that records of training, inspection, and corrective measures are properly maintained.

8.5.2 All Employees Responsibility

It is company policy for all employees to follow the requirements set forth in this Emergency Action Plan, which will be kept in the office, job truck or other vehicle and available for employee review. It is the responsibility of every employee at the jobsite to know:

- Your site supervisor will train you how to protect yourself in each type of emergency. This training occurs at toolbox safety meetings. In addition, you may be required to attend additional training regarding emergency procedures.
- Your site supervisor will train you how to report an emergency. You must follow the procedures given to you for your safety as well as the safety of others.
- Your site supervisor will train you on the proper sequence of actions to take if an emergency occurs. You must follow the sequence of actions for your safety as well as the safety of others.
- The location of emergency equipment (e.g., fire extinguisher, first aid kit, emergency telephone number, etc.) in or near your work area or crane.
- If an emergency occurs, you must be sure that the area is safe before you enter the area where the injured employee is. Get proper authorities involved immediately. Property is always of secondary importance.

8.5.3 Reporting Emergencies

Emergencies must be reported promptly. Regardless of the type of emergency, use one of the methods of reporting listed below that will produce the quickest and most effective response.

1. Call 911 or 919 and give the following information:
    a. Your name, telephone number, your exact location, and any special directions of how to find the victim or incident;
    b. Description of the emergency, need for paramedic, ambulance, fire department, police department, etc.;

c. Wait for questions. **DO NOT HANG UP**!

2. Call the office on the phone or radio;
3. Notify the local Legendary Marina at Bluewater Cay main office immediately.
4. The site supervisor needs notification so a company representative can be sent immediately if needed;
5. Notify the general contractor assigned to the job.

8.5.4 Accidents

Accident scenes must be safe to enter. Once safe and secured, preserve, and investigate the scene as soon as possible to ensure accuracy. The supervisor should take photos of the scene to aid in the investigation.

- Call project site emergency numbers. The emergency numbers are provided in the following table.
- Notify appropriate owner/client representatives.
- Notify appropriate subcontractor representatives.
- Elements of the Project Site Evacuation Program
- Supervisors must direct others to leave when an evacuation has been sounded.
- Know all means or methods by which to sound an alarm or otherwise alert workers of an emergency.
- Provide instructions as to the various evacuation routes and assembly locations.
- Provide specific instructions as to employee and supervisor actions and responsibilities if an emergency occurs. Examples are listed below.
    - Stay calm, do not panic.
    - Exit as quickly as possible without stopping to gather personal belongings.
    - Proceed to assembly point.
    - Designated employees will check to see that no one has been left behind, particularly where the alarm may not be audible.
    - Once in the designated assembly area, supervisors will take a head count to verify that everyone has evacuated the emergency area.
    - Keep access clear for emergency equipment. Do not congregate in roadways or near building access points.
- Do not re-enter the emergency area until the "All Clear" has been given.
- At no time should information concerning the emergency be given to members of the news media until a company representative has approved it for release. Contact with the media is limited to designated personnel.

Rescue and Medical Duties

Only trained employees are to perform emergency first aid. Those employees who are trained in first aid and CPR are authorized to perform those duties. Outside emergency response services (911 or 919) is the primary source of critical medical treatment.

Emergency Phone Numbers

The "Emergency Contact List" shall be provided to field supervisors. Emergency phone numbers are used for emergencies only and shall not be distributed to any individuals outside of approved company business.

Main Office Notification
In the event of a serious injury or incident, the Incident Report Form (Appendix F) should be completed, and the following notifications shall be made:

- Immediately notify the office of Legendary Marina at Bluewater Cay. It will be the responsibility of the site supervisor to distribute the report to the appropriate people.
- If a subcontractor is involved in an accident, have the subcontractor's foreman fill out a report and give a copy to the Legendary Marina at Bluewater Cay site supervisor. If serious in nature, a separate Legendary Marina at Bluewater Cay investigation is needed.
- Forward the subcontractor's accident investigation report to Legendary Marina at Bluewater Cay main office.

Table 8-1 Emergency Contacts

Department / Agency	Contact
Department of Marine Resources (DMR)	(242) 393-1777
Department of Environmental Planning and Protection (DEPP)	(242) 322-4546
The Forestry Unit	(242) 322-4546
Department of Environmental Health Services (DEHS)	(242) 322-8037
Royal Bahamas Police Force Elizabeth Estates	(242) 364-8996
Princess Margaret Hospital	(242) 322-2861
Elizabeth Estates Clinic	(242) 324-2923
The Medi Center Clinic	(242) 364-9925

8.6 MALFUNCTIONS

Equipment operators will be familiar with the standard and emergency operating procedures of the tools they utilize and inspect them before each use to ensure they are in good working order. Equipment not used daily will be inspected in accordance with manufacturer's recommendations and local regulations.

9 PUBLIC CONSULTATION

9.1 STAKEHOLDER ENGAGEMENT

Public consultation meetings were conducted on November 23 and December 14, 2022, related to the Environmental Impact Assessment (EIA) Revision 1 for Legendary Marina Resort at

Bluewater Cay in New Providence, The Bahamas. The Developer's representative, Mr. Rodney Chamberlain, Vice-President, Legendary Marine, introduced the Development during both meetings. The Public Consultation Report (PCR) recaps the virtual public meeting on November 23, 2022, the physical in-person meeting on December 14, 2022, and a follow-up site visit by the Director of DEPP on December 15, 2022, and responses to questions received. The complete PCR is provided in Appendix G.

9.2 Grievance Response Mechanism

Any grievances stakeholders may have can be sent to the Legendary Marina Resorts at Bluewater Cay. Grievances will be addressed within a 2-week time. All grievances expressed and the resolutions will be shared with DEPP in the monthly environmental reports. There will be signage posted near the site informing the public of the GRM. The following form is an example of the type of form that will be used to record Public Grievances.

Form 9.1 Example Grievance Response Mechanism Form

Date submitted: _____ Full Name: _____

Contact Information: _____

Would you like to be contacted to discuss the resolution to your grievance? _Yes _No

Description of Grievance _____
_____
_____

The Project Manager will implement the following steps.

- File and sort the grievance based on the type of grievance received. The following table provides an example of different options available to classify grievances. The method used to sort grievances is at the discretion of the Project Manager and a combination of classifications may be used.

Table 9-1. Types of Grievances

Types of Grievance Classifications	Description
Who	Individual, Group, or Union
What	Site non-compliant with EMP
When	Construction, Post construction
How	Physical Form, Online Form, Email, or Phone Call

- Inform the contact person listed on the submitted form that the grievance was received.
- Contact the person responsible for the issue raised in the form to determine a resolution to the grievance.
- All grievances will be addressed within 21 business days.
- All communication between the Project Manager and the grievant should be filed with the grievance report form.
- All reports and communication pertaining to the grievance should be submitted to DEPP with the monthly EMC.
- The Environmental Manager and Monitor will not be responsible for addressing grievances,but will be available to the Project Manager to help inform responses to relevant grievances.
- The Project Manager is responsible for recording and responding to all grievances filed.

10 Monitoring and Reporting

10.1 Planned Environmental Monitoring

The Environmental Monitor will be on site daily and will report to the Environmental Manager daily. Daily EMCs will be collated and submitted to DEPP weekly. The EMC is provided in Appendix H.

Table 10-1. EMC Compliance Code

Site Code	Compliance Code Description	Action
Fully Compliant	The site is fully compliant with the EMP and reporting requirements.	No Action Required.
Partially Compliant	The site is partially compliant with the EMP and reporting requirements. The Project/Site Manager will be made aware of the areas of noncompliance and will have the opportunity to address the area of noncompliance before the directive is given to stop work.	The required corrective action will be provided to the Project/Site Manager to address. DEPP is informed of the area of noncompliance and the appropriate corrective action described.
Non-Compliant	The site is not compliant with the EMP and reporting requirements.	Environmental Manager notifies the Project/Site Manager to cease work until the appropriate action is taken to change the site code to green. DEPP is informed of the area of noncompliance.

10.2 Responsibilities and Accountability

A full-time Environmental Monitor will document relevant activities in the project area by taking notes and photographs of possible environmental issues and mitigation on the construction site. These activities include:

- health and safety
- excavation management
- groundwater management
- air quality management
- waste management
- landscape management
- other note-worthy activities the environmental monitor will conduct regular site visits to record accurate on-site data during the construction process.

The Environmental Monitor will complete the Environmental Monitor Checklist (EMC) daily. Supplemental forms will be completed and submitted to the Environmental Manager on an as needed basis. An electronic file sharing system with DEPP will be established prior to commencing project activities on the ground. All EMCs will be shared using the established system.

11 Conclusion

The construction of the Legendary Marina Resort in Bluewater Cay has the potential to boost both the local and national economies of The Bahamas. The current location has been vacant for several years and has turned into a risky area for the community. The Development intends to provide marinas and boat storage, together with other boating amenities, to store and restock beverages and food for larger boats, offer entertainment, and create a safe environment. The Developer also seeks to offer high-quality general boat maintenance and service. Therefore, Yamacraw region residents as well as those living in other villages are considered while considering the socioeconomic environment. On-site garbage dumps and stolen boats have both been discovered in Yamacraw Lake. By adding protection to the region and restoring a derelict site, the project will improve the neighborhood.

At the southwest corner of the site, the Developer plans to build a public beach spot with unrestricted access for the public. This access will lead to Fox Hill Road and be located beyond the development's perimeter of security. The Developer is aware of the negative impact of the projected development and its sandy beach development on the black mangrove ecosystem south-west of the development. Mitigation measures described herein, including the revitalization of mangroves swamp northwest of the development, planting black mangroves from seedlings, as well as the creation of live shorelines will lessen this impact. The living shorelines may be created at areas such as the new breakwater east of the marina basin entrance or possibly along

the groynes on the south side of the reclaimed peninsula and the jetty separating the beach from the development.

The dredging and land reclamation projects, which both produce significant volumes of turbidity and alter the natural environment, are the most likely to have negative effects on the flora and fauna. The Developer also plans to dredge Yamacraw Lake's extremely shallow entrance, allowing locals to use boats to access the lake and improving water circulation and exchange flow with the sea, both of which will improve the lake's water quality. The proposed Development will also involve building a culvert beneath the entrance road, linking Yamacraw Lake's north-western corner mangrove habitat (near the gatehouse). The mangrove swamp to the west of the project will be able to flush naturally with tidal activity thanks to the restoration of historical drainage systems.

Mangroves shall be safeguarded, and every attempt will be made to replant those that are unintentionally taken out. The present mangrove environment to the west will be greatly benefited, and there will be new fish nurseries created if the historical flushing characteristic of the broader mangrove system is restored. This is a crucial component of the mitigation strategy. The advantages of restoring the previous flushing qualities with the nearby mangrove swamp will balance the negative effects of the unintentional removal of existing mangroves, in addition to the creation of a "living shoreline" around the marina entrance and other areas described above, which would replenish the mangrove ecosystem removed during construction while also protecting against coastal erosion and providing natural flushing or filtering of pollutants from the marina basin.

The eradication of invasive species and the planting of native plants in the project's landscaping footprint will create environmental corridors that will foster an ecological succession across the Development, preventing future harm to the surrounding environment. When feasible, care will be taken to include the existing mangroves in the development's landscape design. The primary goal of spill management is to prevent spills, with cleanup and mitigation coming in second. The Project's construction and operation workers will benefit from training in environmental sensitivity and awareness, which will increase public knowledge of indigenous Bahamian species and important ecosystems.

12 APPENDICES

12.1 Appendix A1a – Master Plan Full Development

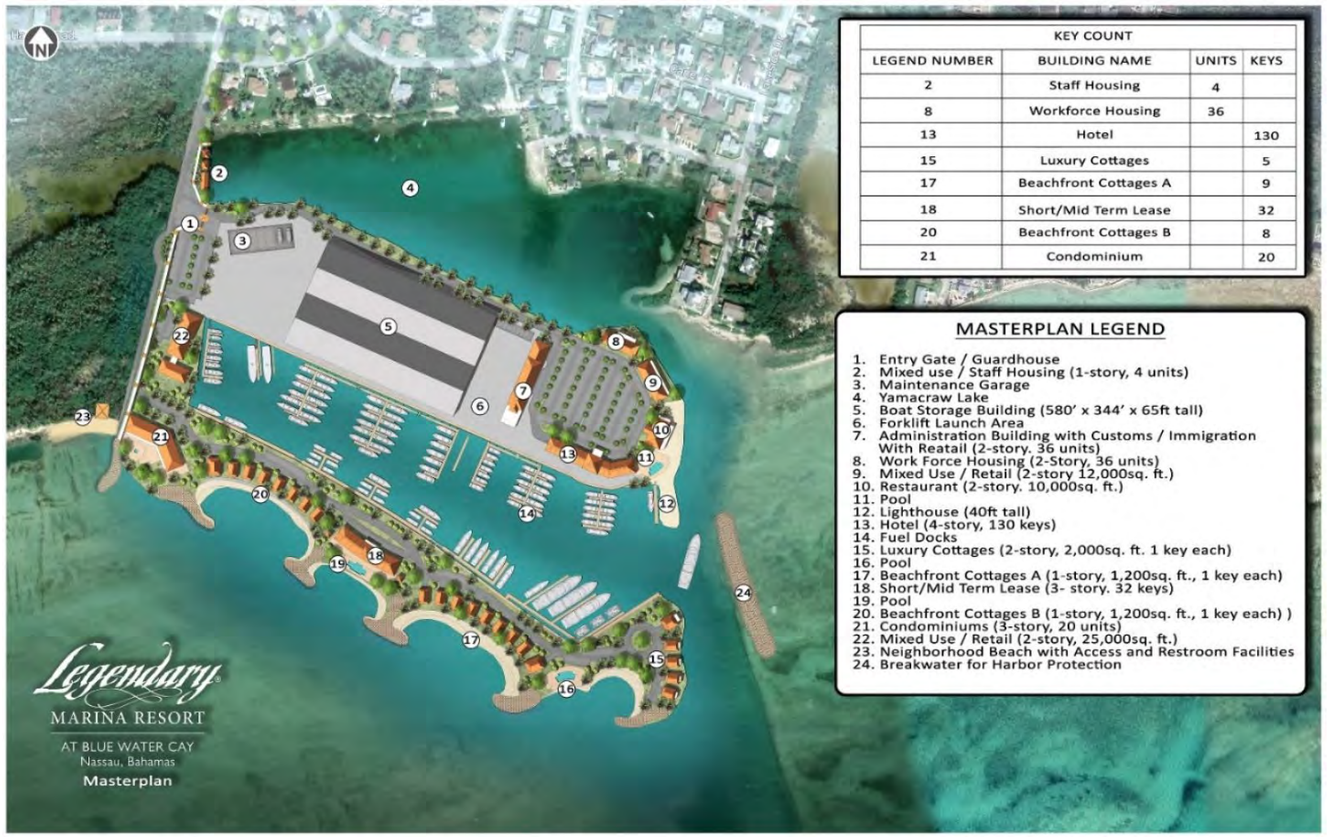


Figure 12.1 Full Master Plan

12.2 APPENDIX A1B – MASTER PLAN PHASE 1

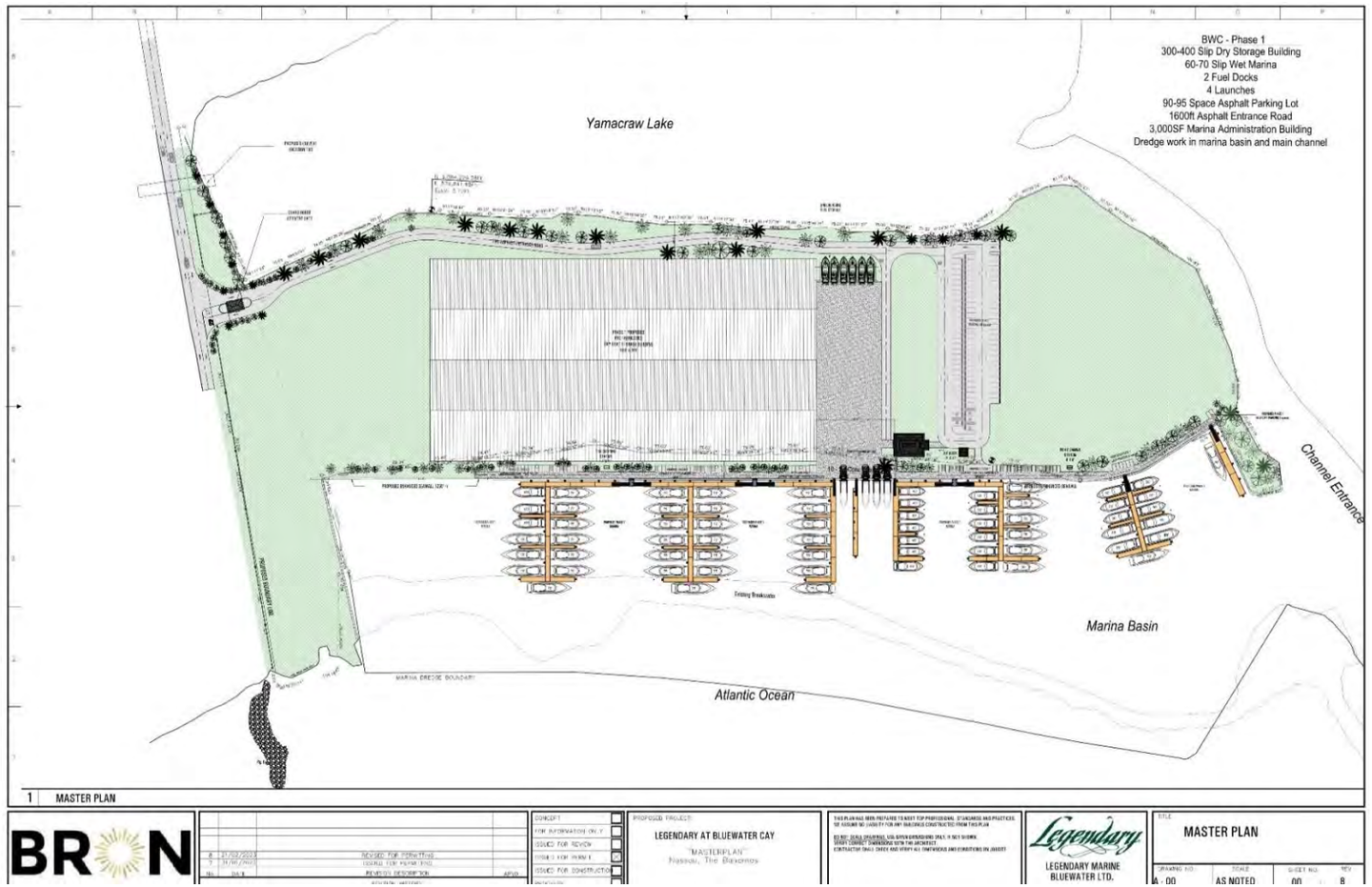
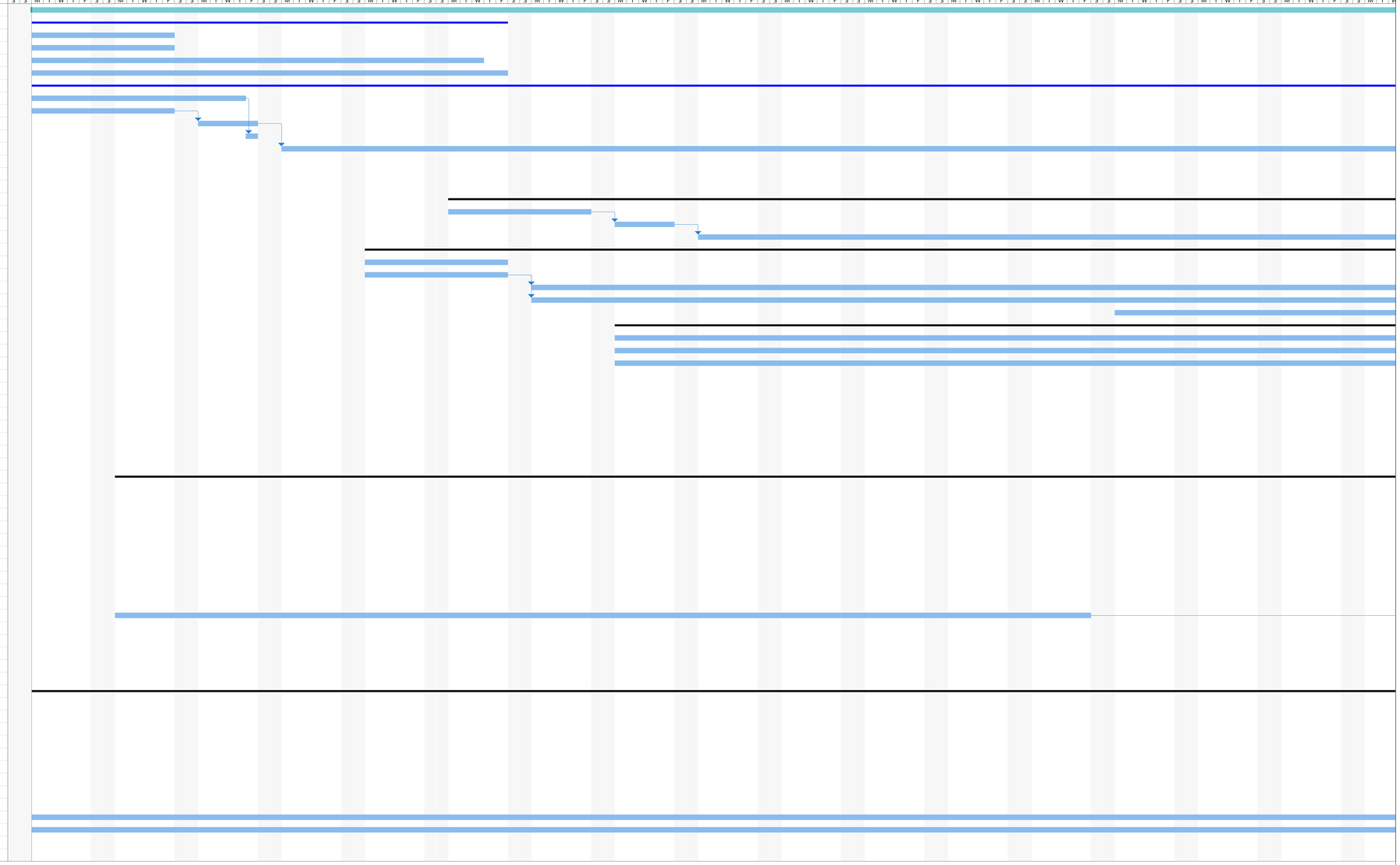


Figure 12.2 Phase 1 Master Plan

12.3 APPENDIX A2 –PROJECT SCHEDULE

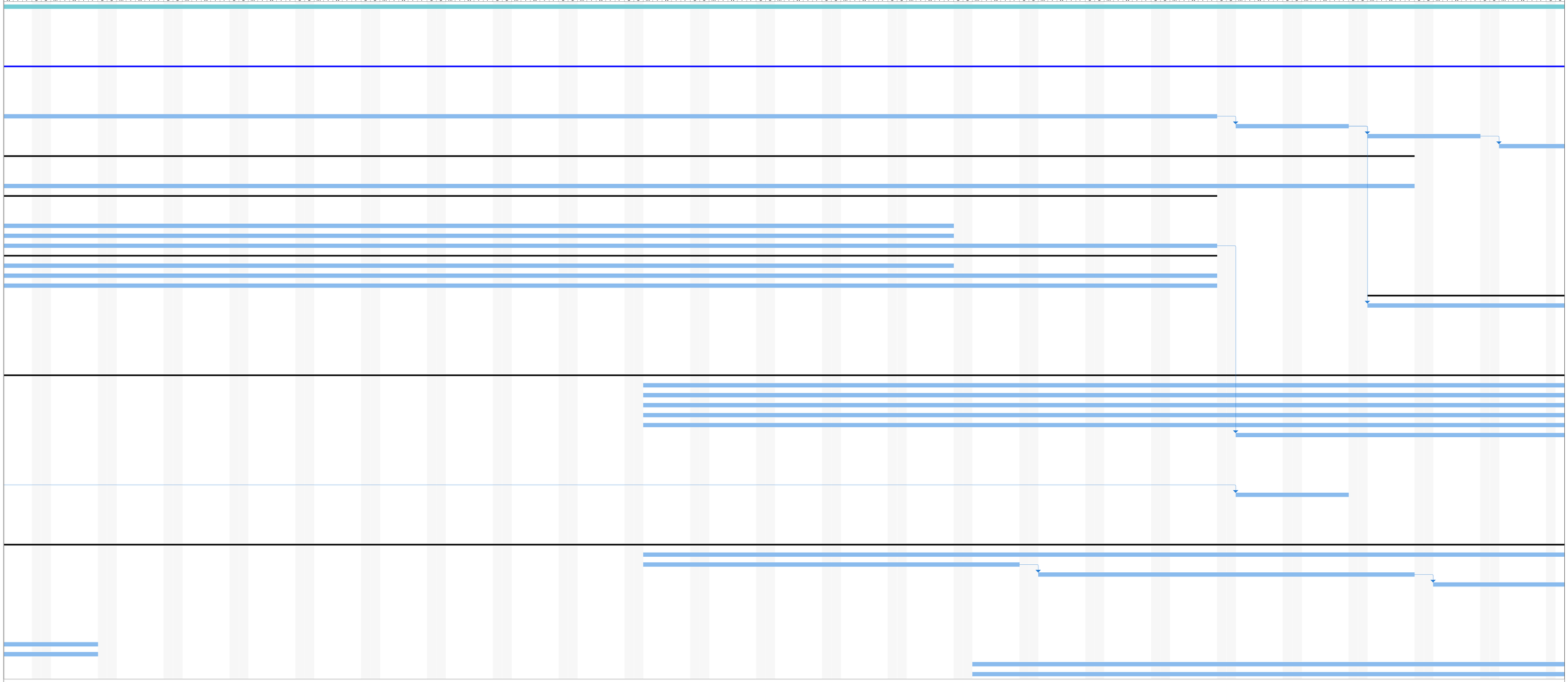
ID	Task Mode	Task Name	Duration	Start	Finish
1		**Blue Water Cay - Base Construction Programme**	435 days	Mon 03/04/23	Fri 29/11/24
2		**Site Clearing**	30 days	Mon 03/04/23	Fri 12/05/23
3		Installation of Master Site Survey Markers	10 days	Mon 03/04/23	Fri 14/04/23
4		Tag and Marking Protected Trees & Plants	10 days	Mon 03/04/23	Fri 14/04/23
5		Site Clearing & Grubbing	28 days	Mon 03/04/23	Wed 10/05/23
6		Vegetation stripping and crushing	30 days	Mon 03/04/23	Fri 12/05/23
7		**Dredging**	225 days	Mon 03/04/23	Fri 09/02/24
8		Mobilization - Dredging	14 days	Mon 03/04/23	Thu 20/04/23
9		Initial Bathymetric Survery	10 days	Mon 03/04/23	Fri 14/04/23
10		Establishing grid excavation plan	5 days	Mon 17/04/23	Fri 21/04/23
11		Installation of Marina Protection Curtain	1 day	Fri 21/04/23	Fri 21/04/23
12		Basin & Channel Excavation	160 days	Mon 24/04/23	Fri 01/12/23
13		Final Bathymetric Survery	10 days	Mon 04/12/23	Fri 15/12/23
14		Punchlist items	10 days	Mon 18/12/23	Fri 29/12/23
15		De-mobilization - Dredging	10 days	Mon 01/01/24	Fri 12/01/24
16		**Civil - Earthmoving & Compaction**	165 days	Mon 08/05/23	Fri 22/12/23
17		Removing 1st one foot of surface substructure - Stock pilling material	10 days	Mon 08/05/23	Fri 19/05/23
18		Establishing grid laydown plan	5 days	Mon 22/05/23	Fri 26/05/23
19		Transportation of dredge fill material & Layer Compaction & Testing	150 days	Mon 29/05/23	Fri 22/12/23
20		**Civil - Sea Wall**	155 days	Mon 01/05/23	Fri 01/12/23
21		Preparation of laydown areas for Steel and Rebar Fabrication	10 days	Mon 01/05/23	Fri 12/05/23
22		Preparation for Concrete Washout point including water supply	10 days	Mon 01/05/23	Fri 12/05/23
23		Installation of SSSP	125 days	Mon 15/05/23	Fri 03/11/23
24		Installation of Tie Brace	125 days	Mon 15/05/23	Fri 03/11/23
25		Construction of Head Cap Bean	110 days	Mon 03/07/23	Fri 01/12/23
26		**Civil - Island Construction**	140 days	Mon 22/05/23	Fri 01/12/23
27		Installation of Riprap - Basin	120 days	Mon 22/05/23	Fri 03/11/23
28		Fill Import	140 days	Mon 22/05/23	Fri 01/12/23
29		Installation of Riprap - Sea/Islands	140 days	Mon 22/05/23	Fri 01/12/23
30		**Floating Docks**	190 days	Mon 18/12/23	Fri 06/09/24
31		Shipping of Floating Docks from Florida to Site	30 days	Mon 18/12/23	Fri 26/01/24
32		Installation of Floating Docks	70 days	Mon 29/01/24	Fri 03/05/24
33		Installation of Pile's, Sleeves & Caps	30 days	Mon 06/05/24	Fri 14/06/24
34		Installation of Various Gangways	30 days	Mon 17/06/24	Fri 26/07/24
35		Installation of Electrical Systems including Hardware	60 days	Mon 17/06/24	Fri 06/09/24
36		Connection of Sewer System	60 days	Mon 17/06/24	Fri 06/09/24
37		Connection of Portable Water System	60 days	Mon 17/06/24	Fri 06/09/24
38		**Civil - Infrastructure**	325 days	Mon 10/04/23	Fri 05/07/24
39		Construction of Portable Water & Sewer System	120 days	Mon 02/10/23	Fri 15/03/24
40		Construction of HV & MV Electrical & Telecommunications Systems	120 days	Mon 02/10/23	Fri 15/03/24
41		Installation of Paving, Grading & Drainage Systems	120 days	Mon 02/10/23	Fri 15/03/24
42		Construction of Fire System	100 days	Mon 02/10/23	Fri 16/02/24
43		Construction of Fuel System	100 days	Mon 02/10/23	Fri 16/02/24
44		Construction of Promenade	100 days	Mon 04/12/23	Fri 19/04/24
45		Installation of Street Lighting	80 days	Mon 18/03/24	Fri 05/07/24
46		Installation of Low Level Street Lighting	80 days	Mon 18/03/24	Fri 05/07/24
47		Installation of Wi-fi Systems	80 days	Mon 18/03/24	Fri 05/07/24
48		Installation of Security Cameras	80 days	Mon 18/03/24	Fri 05/07/24
49		Construction of Property Boundary Wall	60 days	Mon 10/04/23	Fri 30/06/23
50		Installation of Property Signage	10 days	Mon 04/12/23	Fri 15/12/23
51		**Landscaping**	110 days	Mon 01/07/24	Fri 29/11/24
52		Installation of Irrigation System	40 days	Mon 01/07/24	Fri 23/08/24
53		Installation of Hard Landscape	70 days	Mon 26/08/24	Fri 29/11/24
54		Installation of Soft Landscape	70 days	Mon 26/08/24	Fri 29/11/24
55		**Buildings**	430 days	Mon 03/04/23	Fri 22/11/24
56		**Dry Storage Building**	300 days	Mon 02/10/23	Fri 22/11/24
57		Installation of Structural Piles	30 days	Mon 02/10/23	Fri 10/11/23
58		Construction of Underground Water Storage Chambers	30 days	Mon 13/11/23	Fri 22/12/23
59		Construction of Slab	30 days	Mon 25/12/23	Fri 02/02/24
60		Erection of Building	90 days	Mon 05/02/24	Fri 07/06/24
61		Installation of Services	90 days	Mon 10/06/24	Fri 11/10/24
62		Installation Boat Storage Racking System	90 days	Mon 10/06/24	Fri 11/10/24
63		Construction of Internal 3 Story Building	120 days	Mon 10/06/24	Fri 22/11/24
64		Connection of all utilities to Building	30 days	Mon 14/10/24	Fri 22/11/24
65		**Guard House**	90 days	Mon 03/04/23	Fri 04/08/23
66		Construction of Building	90 days	Mon 03/04/23	Fri 04/08/23
67		**Administration Building**	250 days	Mon 06/11/23	Fri 18/10/24
68		Construction of Building	250 days	Mon 06/11/23	Fri 18/10/24



Project: Construction Base Ove
Date: Fri 03/03/23

Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Deadline | Manual Progress
Split | Summary | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | External Milestone | Progress

W T F S | 30 Jul '23 S M T W T F S | 06 Aug '23 S M T W T F S | 13 Aug '23 S M T W T F S | 20 Aug '23 S M T W T F S | 27 Aug '23 S M T W T F S | 03 Sep '23 S M T W T F S | 10 Sep '23 S M T W T F S | 17 Sep '23 S M T W T F S | 24 Sep '23 S M T W T F S | 01 Oct '23 S M T W T F S | 08 Oct '23 S M T W T F S | 15 Oct '23 S M T W T F S | 22 Oct '23 S M T W T F S | 29 Oct '23 S M T W T F S | 05 Nov '23 S M T W T F S | 12 Nov '23 S M T W T F S | 19 Nov '23 S M T W T F S | 26 Nov '23 S M T W T F S | 03 Dec '23 S M T W T F S | 10 Dec '23 S M T W T F S | 17 Dec '23 S M T W T F S | 24 Dec '23 S M T W T F S | 31 Dec '23 S M T W T F S | 07 S



Project: Construction Base Ove
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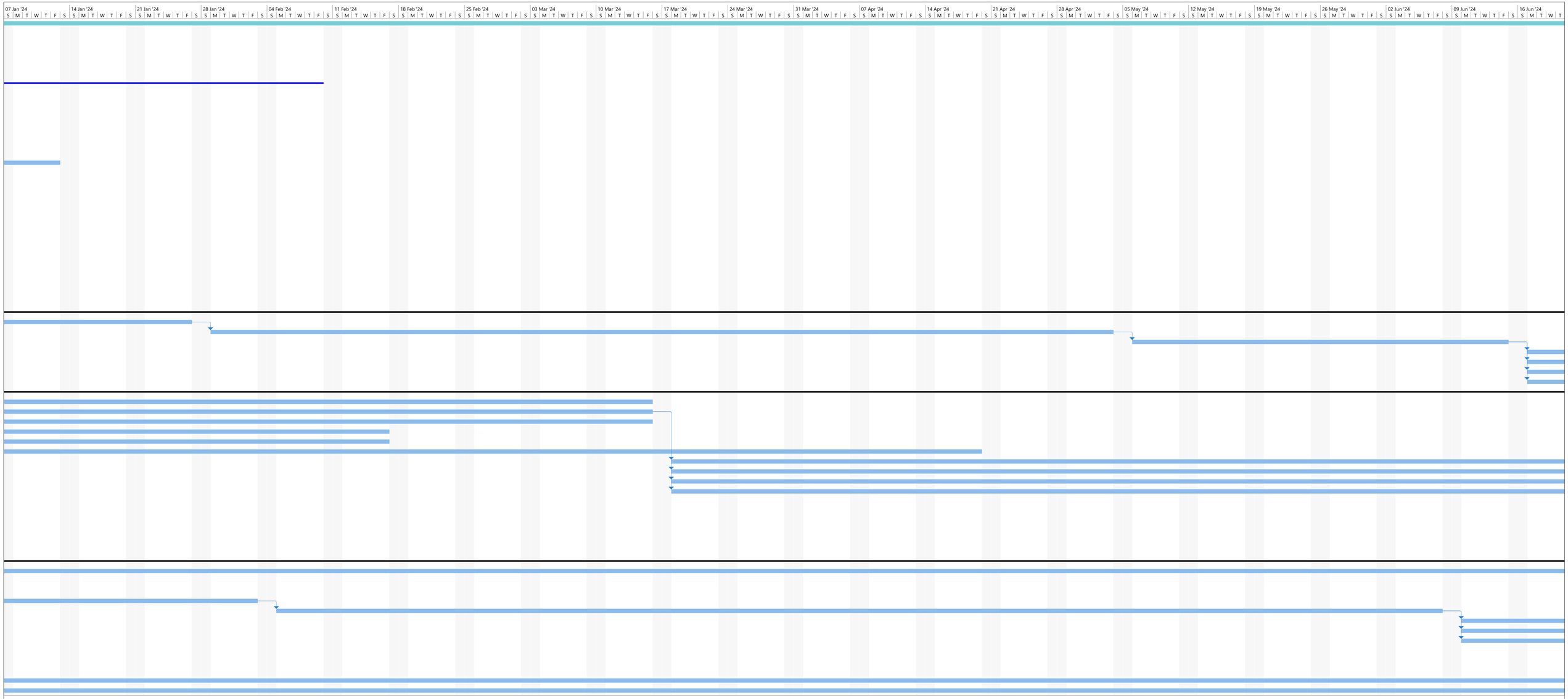
Task | Milestone | Project Summary | Inactive Milestone | Manual Task | Manual Summary Rollup | Start-only | External Tasks | Deadline | Manual Progress
Split | Summary | Inactive Task | Inactive Summary | Duration-only | Manual Summary | Finish-only | External Milestone | Progress


07 Jan '24
14 Jan '24
21 Jan '24
28 Jan '24
04 Feb '24
11 Feb '24
18 Feb '24
25 Feb '24
03 Mar '24
10 Mar '24
17 Mar '24
24 Mar '24
31 Mar '24
07 Apr '24
14 Apr '24
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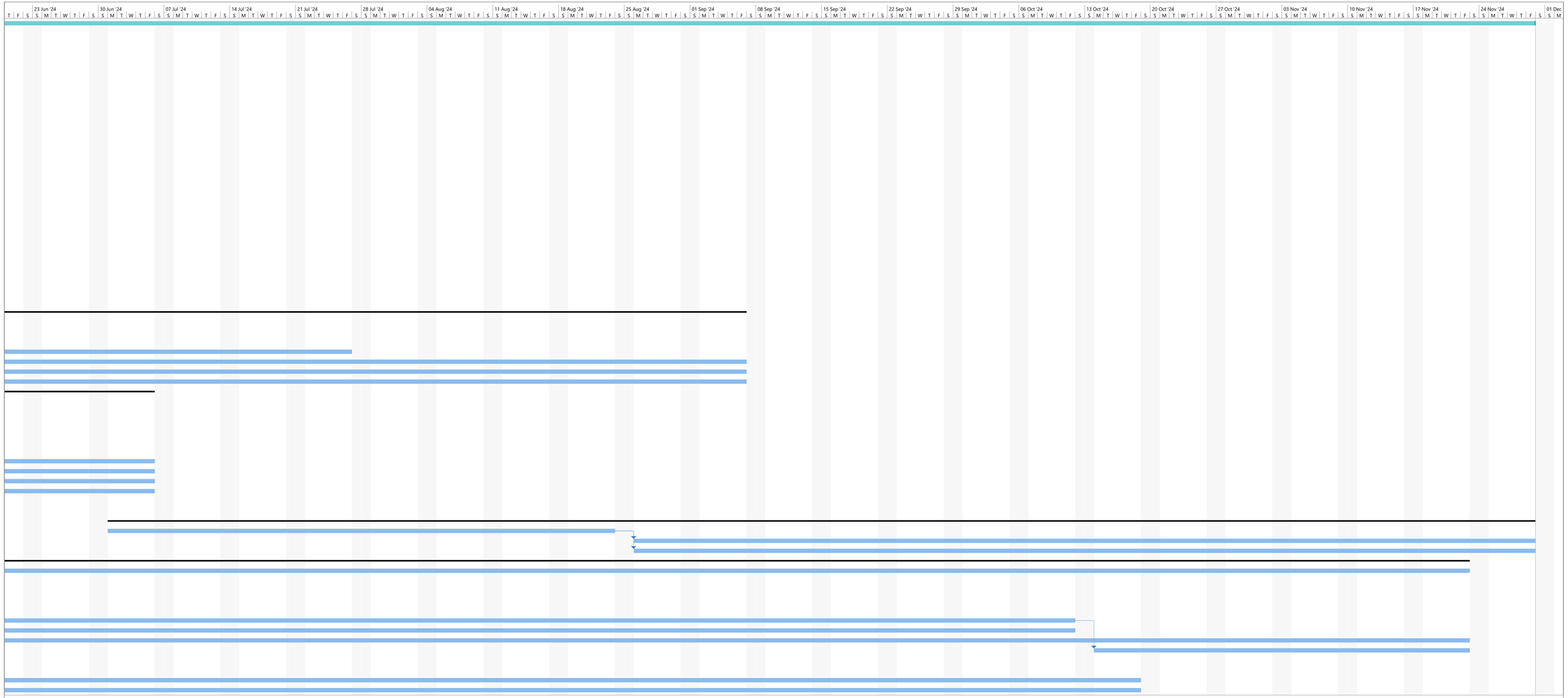
05 May '24
12 May '24
19 May '24
26 May '24
02 Jun '24
09 Jun '24
16 Jun '24



Project: Construction Base Ove
Date: Fri 03/03/23

Task
Split
Milestone
Summary
Project Summary
Inactive Task
Inactive Milestone
Inactive Summary
Manual Task
Duration-only
Manual Summary Rollup
Manual Summary
Start-only
Finish-only
External Tasks
External Milestone
Deadline
Progress
Manual Progress

12.4 APPENDIX B – HEALTH AND SAFETY PLAN

SAFETY PROGRAM

MG/ 2022

Table of Contents

Management Commitment & Involvement

SECTION 1

Management Commitment & Involvement Policy Statement

The management of this organization is committed to providing employees with a safe and healthy workplace. It is the policy of this organization that employees report unsafe conditions and do not perform work tasks if the work is considered unsafe. Employees must report all accidents, injuries and unsafe conditions to their supervisors. No such report will result in retaliation, penalty or other disincentive.
Employee recommendations to improve safety and health conditions will be given thorough consideration by our management team. Management will give top priority to and provide the financial resources for the correction of unsafe conditions. Similarly, management will take disciplinary action against an employee who, willfully or repeatedly violates workplace safety rules. This action may include verbal or written reprimands and may ultimately result in termination of employment.

The primary responsibility for the coordination, implementation and maintenance of our workplace safety program has been assigned to:

Name: TBD

Title: TBD

Phone Number: TBD

Senior management will be actively involved with employees in establishing and maintaining an effective safety program. Our safety program coordinator, myself or other members of our management team will participate with you or your department's employee representative in ongoing safety and health program activities, which include:
• Promoting safety committee participation
• Providing safety and health education and training
• Reviewing and updating workplace safety rules
This policy statement serves to express management's commitment to and involvement in providing our employees a safe and healthy workplace. This workplace safety program will be incorporated as the standard of practice for this organization. Compliance with the safety rules will be required of all employees as a condition of employment.

_____ _____

Vice-President/Marine Operations Date

On the Job Safety Fact Sheet

The following safety information can help employers and employees while on-the-job or in the workplace.

1. The right way is the safe way of doing your job. Follow instructions. If you don't know, ask.
2. Know potential hazards in your work and ways of working safely to prevent such hazards.
3. Know safety rules for specific jobs and be able to explain these rules to your coworkers.
4. Follow emergency procedures in the event of a fire or medical emergency.
5. Report all injuries including minor scratches, cuts, burns, slips and falls to your employer. Your employer needs to know in order to take corrective action to prevent future injuries. You should always follow your company's procedures for reporting injuries.
6. Know the location of emergency equipment such as fire extinguishers, eyewash and safety showers, and understand how to use this equipment.
7. Use personal protective equipment required by your employers. Such equipment includes, but not limited to: safety glasses, hearing protectors, respirators, safety boots, hard hats, gloves and face shields.
8. Learn special safety procedures for particularly hazardous work such as vessel entry, confined space entry, electrical work and welding.
9. Follow electrical safety rules when using electrical equipment, grounding portable electrical tools and working near overhead power lines.
10. Know how to protect yourself from the elements when working outdoors in very cold weather or direct sunshine (UV rays).
11. Perform a walk around check using any company equipment.
12. Lock out and tag energy sources (electrical, mechanical, hydraulic, pneumatic, chemical, etc.) of all machinery and equipment under repair.
13. Wear clothing that's appropriate to the tasks you perform. Do not wear loose sleeves, cuffs, rings, bracelets or anything else that may get caught in moving machinery and cause injury.
14. Report unsafe practices and unsafe conditions to your employer or the Director of Safety.

Remember to practice safety.

TBD WORK COMP PROVIDER

Safety Program Information

A safety program protects your employees, lowers your costs and increases your profitability. At TBD, our goal is to make it easy for you to develop and launch a customized safety program that will improve workplace safety, boost employee morale and raise the efficient output of goods and services to your customers.
Workplace incidents may result in lost productivity, equipment damage, spoiled product and unproductive management time. They also drive up your workers' compensation premium. That's why it pays to implement a safety program.
An effective safety program is in writing and includes these elements:
1. A written statement of safety policy to demonstrate management commitment to the safety program.
2. Assignment of responsibilities for planning, directing, monitoring and implementation of the safety program.
3. A system for ensuring safety program recognition and enforcement.
4. A system for employees to communicate safety concerns to employers without fear of reprisal.
5. A system to identify workplace hazards and methods to ensure elimination of hazards once they are identified.
6. Procedures for investigating the cause of incidents, illnesses or injuries and preventing their recurrence.
7. An ongoing safety and health training and retraining program specific to each job for new employees as well as whenever new substances, processes, procedures or equipment are introduced to the workplace.
8. Maintenance of appropriate records and steps taken to implement and maintain the safety program.

Safety & Health Training

Safety & Health Training

Safety & Health Orientation

Workplace safety and health orientation begins on the first day of initial employment or job transfer. Each employee has access to a copy of this safety manual, through his or her supervisor, for review and future reference, and will be given a personal copy of the safety rules, policies, and procedures pertaining to his or her job. Supervisors will ask questions of employees and answer employees' questions to ensure knowledge and understanding of safety rules, policies, and job- specific procedures described in our workplace safety program manual.
All employees will be instructed by their supervisors that compliance with the safety rules described in the workplace safety manual is required.
Job-Specific Training
• Supervisors will initially train employees on how to perform assigned job tasks safely.
• Supervisors will carefully review with each employee the specific safety rules, policies, and procedures that are applicable and that are described in the workplace safety manual.
• Supervisors will give employees verbal instructions and specific directions on how to do the work safely.
• Supervisors will observe employees performing the work. If necessary, the supervisor will provide a demonstration using safe work practices, or remedial instruction to correct training deficiencies before an employee is permitted to do the work without supervision.
• All employees will receive safe operating instructions on seldom-used or new equipment before using the equipment.
• Supervisors will review safe work practices with employees before permitting the performance of new, non-routine or specialized-Procedures.
Job-Specific Training
All employees will be retrained periodically on safety rules, policies and procedures, and when changes are made to the workplace safety manual. Individual employees will be retrained after the occurrence of a work-related injury caused by an unsafe act or work practice, and when a supervisor observes employees displaying unsafe acts, practices, or behaviors.

First Aid CPR & AED Procedures

First Aid Procedures

Emergency Phone Numbers

Safety Coordinator: TBD
Poison Control: TBD
Hospital: TBD
Ambulance: TBD
Fire Department: TBD
Police: TBD
Fire Address: TBD
Police Address: TBD

Minor First Aid Treatment

First aid kits are kept in the dispatch office and on the right to know board.
If you sustain an injury or are involved in an accident requiring minor first aid treatment.

- Inform your supervisor.
- Administer first aid treatment to the injury or wound.
- If a first aid kit is used, indicate usage on the accident investigation report.
- Access to a first aid kit is not intended to be a substitute for medical attention.
- Provide details for the completion of the accident investigation report.

Non-Emergency Medical Treatment

For non-emergency work-related injuries requiring professional medical assistance, management must first authorize treatment. If you sustain an injury requiring
treatment other than first aid:

- Inform your supervisor.
- Proceed to the posted medical facility. Your supervisor will assist with transportation, if necessary.
- Provide details for the completion of the accident investigation report.

Emergency Medical Treatment

If you sustain a severe injury requiring emergency treatment:
• Call for help and seek assistance from a co-worker.
• Use the emergency telephone numbers and instructions posted next to the telephone in your work area to request assistance and transportation to the local hospital emergency room. Provide details for the completion of the accident investigation report.

First Aide Treatment
Each employee will receive training and instructions from his or her supervisor on our first aid procedures, CPR, and AED usage.

FIRST AID INSTRUCTIONS

Wounds
Minor: Cuts, lacerations, abrasions or punctures
• Wash the wound using soap and water; rinse it well
• Cover the wound using clean dressing

Major: Large, deep and bleeding
• Stop the bleeding by pressing directly on the wound, using a bandage or cloth
• Keep pressure on the wound until medical help arrives

Broken Bones
• Do not move the victim unless it is necessary
• If the victim must be moved, 'splint' the injured area. Use a board, cardboard or rolled newspaper as a splint.

Burns
Thermal Heat
• Rinse the burned area, without scrubbing it and immerse it in cold water do not use ice water.
• Blot dry the area and cover it using sterile gauze or a clean cloth

Chemical
• Flush the exposed area with cool water immediately for 15 to 20 minutes

Eye Injury

Small Particles
• Do not rub your eyes
• Use the corner of a soft, clean cloth to draw particles out or hold the eyelids open and flush the eyes continuously with water

Large or Stuck Particles
• If a particle is stuck in the eye, do not attempt to remove it
• Cover both eyes with a bandage

Chemical
• Immediately irrigate the eyes and under the eyelids

Neck and Spine Injury
• If the victim appears to have injured his or her neck or spine, or is unable to move his or her arm or leg, do not attempt to move the victim unless it is necessary

Heat Exhaustion
PLEASE REFERENCE THE HEAT ILLNESS PREVENTION PROGRAM

FIRST AID KITS

Class A kits provide basic range of products to deal with most common types of injuries.
Class B kits provide for broader range of supplies and deal with injuries encountered in more populated, complex and high-risk workplaces.
Type Ill and Type IV kits and for portable use in mobile industries must be able to be mounted.

Class A ANSI Minimum Requirements		
Quantity	Item	Size
16	Adhesive Bandages	1"x3"
1	Adhesive Tape	2.5 yds
10	Antibiotic Treatment Application	1/57 oz
10	Antiseptic Applications	1/57 oz
1	Breathing Barrier	
1	Burn Dressing, gel soaked	4"x4"
10	Burn Treatment	1/32 oz
1	Cold Pack	
2	Eye Covering	
1	Eye Wash	1 oz
1	First Aid Guide	
6	Hand Sanitizer	.9g
2	Pair Exam Gloves	
1	Roller Bandage	2"x4yds
1	Scissors	
2	Sterile Pad	3"x3"
2	Trauma Pad	5"x9"
1	Triangular Bandage	40"x40"x56"

For workplace with no more than 40 employees

Class B ANSI Minimum Requirements		
Quantity	Item	Size
50	Adhesive Bandages	1"x3"
2	Adhesive Tape	2.5yd
25	Antibiotic Treatment Application	1/57oz
50	Antiseptic Applications	1/57oz
1	Breathing Barrier	
2	Burn Dressing, gel soaked	4"x4"
25	Burn Treatment	1/32oz
2	Cold Pack	
2	Eye Covering	
1	Eye Wash	4oz
1	First Aid Guide	
10	Hand Sanitizer	.9g
4	Pair Exam Gloves	
2	Roller Bandage	2"x4yds
1	Roller Bandage	3"x4yds
1	Scissors	
1	Splint	4"x24"
4	Sterile Pad	3"x3"
1	Tourniquet	
4	Trauma Pad	5"x9"
2	Triangular Bandage	40"x40"x56"

For workplace with more than 40 employees

Accident Investigations

Accident Investigation

Accident Investigation Procedures

An accident investigation will be performed by the supervisor at the location where the accident occurred. The safety coordinator is responsible for seeing that the accident investigation reports are being filled out completely, and that the recommendations are being addressed.
Supervisors will investigate all accidents, injuries, and occupational diseases using the following investigation procedures:
• Implement temporary control measures to prevent any further injuries to employees.
• Review the equipment, operations and processes to gain an understanding of the accident situation
• Identify and interview each witness and any other person who might provide clues to the accident's causes.
• Investigate causal conditions and unsafe acts; make conclusions based on existing facts.
• Complete the accident investigation report.
• Provide recommendations for corrective actions.
• Indicate the need for additional or remedial safety training.
Accident investigation reports must be submitted to the safety coordinator and HR contacted within 24 hours of the accident.

Accident Investigation Report

Name of Injured:
Sex:
Age:
Date of Accident:
Time of Accident: AM PM
Day of Accident:
Employee's Job Title:
Length of Experience on Job:
Address of Location where Accident Occurred:

Nature of Injury, Injury Type & Part of Body Affected:

Describe the Accident & How it Occurred:

Cause of Accident:

Was Personal Protective Equipment Required? Y N
Was it Provided? Y N
Was it Being Used? Y N
If 'No' Explain:

Witness(es):

Interim Corrective Actions Taken to Prevent Recurrence:

Permanent Corrective Actions Taken to Prevent Recurrence:

Date of Report: Prepared By:

Supervisor (Signature):
Date:

Status & Follow-Up Action Taken by Safety Coordinator:

Safety Coordinator (Signature)
Date:

Include pictures, if possible.

Instructions For Completing the Accident Investigation Report

An accident investigation is not designed to find fault or place blame but is an analysis of the accident to determine causes that can be controlled or eliminated.
Identification: This section is self-explanatory.

Nature of Injury: Describe the injury, e.g., strain, sprain, cut, burn, fracture.

Injury Type: First aid -injury resulted in minor injury/ treated on premises.

Medical - injury treated off premises by physician; Lost time - injured missed more than one day of work; No Injury - no injury, near-miss type of incident.

Part of the Body: Part of the body directly affected, e.g., foot, arm, hand, head.

Describe the accident: Describe the accident, including exactly what happened, and where and how it happened. Describe the equipment or materials involved.

Cause of the accident:
Describe all conditions or acts which contributed to the accident:
- Unsafe Conditions - spills, grease on the floor, poor housekeeping or other physical conditions.
- Unsafe Acts - unsafe work practices such as failure to warn, failure to use required personal protective equipment.

Witness(es): List name(s), address(es) and phone number(s).

Interim Corrective Action: Measures taken by supervisor to prevent recurrence of incident, i.e., barricading accident area, posting warning signs, shutting down operations.

Follow-up: Once the investigation is complete, the safety coordinator shall review and follow-up the investigation to ensure that corrective actions recommended by the safety committee and approved by the employer are taken, and control measures have been implemented.

Record Keeping Procedures

The safety coordinator will control and maintain employee accident and injury records. Records are maintained for a minimum of three (3) years and include:

Accident Investigation Reports
Workers' Compensation Notice of Injury Reports
Log & Summary of Occupational Injuries and Illnesses

General Safety Section

All Employees

SECTION 7 - General Safety

LIFTING PROCEDURES

1. Plan the move before lifting; ensure that you have an unobstructed pathway.
2. Test the weight of the load before lifting by pushing the load along its resting surface.
3. If the load is too heavy or bulky, use lifting and carrying aids such as hand trucks,
dollies, pallet jacks and carts, or get assistance from a co-worker.
4. If assistance is required to perform a lift, coordinate and communicate your movements
with those of your co-worker.
5. Position your feet 6 to 12 inches apart with one foot slightly in front of the other.
6. Face the load.
7. Bend at the knees, keep your back straight.
8. Get a firm grip on the object using your hands and fingers. Use handles when they are present.
9. Hold the object as close to your body as possible.
10. While keeping the weight of the load in your legs, stand to an erect position.
11. Perform lifting movements smoothly and gradually; do not jerk the load.
12. If you must change direction while lifting or carrying the load, pivot your feet
and turn your entire body. Do not twist at the waist.
13. Set down objects in the same manner as you picked them up, except in reverse.
14. Do not lift an object from the floor to a level above your waist in one motion.
Set the load down on a table or bench and then adjust your grip before lifting it higher.
15. Never lift anything if your hands are greasy or wet.
16. Wear protective gloves when lifting objects that have sharp comers or jagged edges.
17. Slide materials to the end of the tailgate before attempting to lift them off of a pick-up truck.

HOUSEKEEPING

1. Do not place materials such as boxes or trash in walkways and passageways.
2. Sweep up shavings from around equipment such as drill presses, lathes or planers
by using a broom and a dustpan.
3. Mop up water around drinking fountains, drink dispensing machines and ice machines.
4. Do not store or leave items on stairways.
5. Do not block the walking surfaces of elevated working platforms, such as scaffolds,
with tools or materials that are not being used.
6. Straighten or remove rugs and mats that do not lie flat on the floor.
7. Remove protruding nails or bend them down into the lumber by using a claw hammer.
8. Return tools to their storage places after using them.
9. Do not use gasoline for cleaning purposes.
10. Use caution signs or cones to barricade slippery areas such as freshly mopped floors.
11. Place soiled rags in the appropriate container.
12. Empty trash containers at the end of every day.

ELECTRICAL

1. Do not use frayed, cut or cracked electrical cords.
2. Do not plug multiple electrical cords into a single outlet.
3. Do not use extension or power cords that have the ground prong removed or broken off.
4. Use a cord cover or tape the cord down when running electrical cords across aisles, between desks or across entrances or exits.

FORKLIFTS

Pre-Use Inspection

• Only certified forklift operators may operate the forklift!

Do not use the forklift if any of the following conditions exist:

1. The mast has broken or cracked weld-points.
2. The roller tracks are not greased, or the chains are not free to travel.
3. The forks are unequally spaced, or cracks exist along the blade or at the heels.
4. Hydraulic fluid levels are low.
5. The hydraulic lines and fittings have excessive wear or are crimped.
6. Fluid is leaking from the lift or the tilt cylinders.
7. The hardware on the cylinders is loose.
8. The tires are excessively worn, split or have missing tire material.
9. Air filled tires are not filled to the operating pressure indicated on the tire.
10. The batteries have cracks or holes, uncapped cells, frayed cables, broken cable insulation, loose connections or clogged vent caps.

MARINA FORKLIFT SAFETY

1. Care should be taken while turning as the boat is much longer than the lift and the bow of the boat is traveling at a speed which could seriously injure someone or damage equipment.
2. Clean up oil spills when sighted.
3. Do not exceed the rated capacity of the lift at the rated load center. Too much load can cause loss of control with possible personal injury and property damage. If in doubt, check the capacity plate on the machine.
4. When operating the lift, engage the controls in a smooth manner.
5. Do not stop suddenly, especially with the load raised as this may cause the forklift to pitch-pole.
6. Do not leave the operator's seat with the forks in the raised position.
7. Before changing direction, bring the lift to a complete stop.
8. When the mast is raised, do not tilt them past the vertical position.
9. Do not operate the lift within ten feet of high voltage power lines.
10. Do not use bare forks as a man-lift platform.
11. Steer tl1e forklift wide when making turns.
12. Sound the forklift horn when approaching blind comers, doorways or aisles to alert other operators and pedestrians.
13. Make sure the forks are on the ground before shutting down and leaving the lift.

MARINA FORKLIFT SAFETY (continued)
14. Operate the lift only in well illuminated areas.
15. Clean the tires if they become covered with oil.

BOAT STAND SAFETY
1. Only authorized and properly trained personnel may move or adjust boat stands.
2. Use boat stands on stable, firm ground. If the ground is soft, use plywood under the boat stands.
3. Use the boat stand only for the job it was intended for.
4. Use the safety chains on all sailboat stands to chain the pairs together from port to starboard.
5. Do not place blocks on top of boat stands to increase their height.
6. Do not use boat stands to hold up boats when in transit.

MARINE TRAVELIFT SAFETY
1. Only trained and authorized employees may operate the travelift.
2. Do not surpass the travelift's load rated capacity.
3. A communication system between the operator and the signalman must be known
and understood.
4. Do not transport passengers on the boat being lifted.
5. Only the operator should be on the travelift when it is moving.
6. Keep travelift clear of electrical wires by a minimum distance of 10 feet.
7. Before operating the travelift, visually inspect the tires, the slings,
and the surrounding area for loose tools, oil spills, etc.
8. The signalman must wear an orange reflective vest.
9. Do not operate the travelift during thunderstorms or lightning storms.
10. Face the ladder when ascending or descending the travelift.
11. Do not operate the travelift on soft or sloped surfaces.
12. Do not exceed the manufacturers recommended speed for the travelift.
13. Do not leave the travelift unattended while it is in operation.
14. Do not walk under a suspended load.
15. When hoisting a load, visually inspect the load gauges. If load gauges differ by more than 10%, lower the load and move hoist slings and repeat the procedure.

TRAILERING SAFETY

1. Only trained and authorized employees may operate a trailer.
2. Read and follow the manufacturer's speed recommendations.
3. Inspect tire pressure and bearings prior to loading the boat onto the trailer.
4. Fold canvas top down and strap to boat before trailering.
5. Secure tie downs by hooking them to each side of the trailer and tightening the strap around the boat.
6. Do not stand behind the boat while it is being launched. Stand on the dock and use the boat lines to guide the boat.
7. Make sure you have enough ton-weight on the trailer in order to reduce the possibility of jack-knifing.

SHOP SAFETY

PPE

1. Do not drill holes in or paint your hard hat.
2. Do not wear hard hats that are dented or cracked.
3. Wear your safety glasses, goggles or the face shield while operating chippers, grinders, lathes or sanders.
4. Wear the face shield over your goggles or safety glasses during open furnace, hot dipping, metal plating or gas cutting operations.
5. Wear the chemical goggles when using, applying or handling chemical liquids or powders from containers labeled "Caustic" or "Corrosive".
6. Do not continue to work if your safety glasses become fogged. Stop work and clean the glasses until the lenses are clear and defogged.
7. Wear the welding helmet or welding goggles during welding operations.
8. Wear the dielectric gloves when working on electric current.
9. Wear your ear plugs or ear muffs in areas posted "Hearing Protection Required".

MACHINE GUARDING

1. Replace the guards before starting machines, or after making adjustments or repairs to the machine.
2. Do not remove, alter or bypass any safety guards or devices when operating any piece of equipment or machinery.

3. Do not wear loose clothing or jewelry in the shop area.
4. Long hair must be contained under a hat or hair net, regardless of gender.
5. Read and obey safety warnings posted on or near any machinery.
6. Do not try to stop a workpiece as it goes through any machine. If the machine becomes jammed, unplug it before clearing the jam.

GRINDERS

1. Safety goggles must be worn when operating the grinder.
2. Do not use grinding wheels that have chips, cracks or grooves.
3. Do not use the grinding wheel if it wobbles. Tag it “Out of Service”.
4. Do not try to stop the wheel using your hand, even if you are wearing gloves. To prevent your gloves from getting caught by the grinding wheel, hold the work-piece by using vice grip pliers, clamps, or a jig.
5. Adjust the work rest so that it is no more than 1/8 inch from the grinding wheel.

GENERAL POWER SAW SAFETY

1. Wear the prescribed personal protective equipment such as goggles, gloves, dust masks and hearing protection when operating the power saw.
2. Turn the power switch of the saw to “Off’ before making measurements, adjustments or repairs.
3. Keep your hands away from the exposed blade.
4. Operate the saw at full cutting speed, with a sharp blade, to prevent kickbacks.
5. If the saw becomes jammed, tum the power switch of the saw to “Off” before pulling out the incomplete cut.
6.Do not alter the anti-kickback device or blade guard.

ELECTRICAL POWER TOOLS

1. Do not use power equipment or tools on which you have not been trained.
2. Keep power cords away from the path of drills, saws, vacuum cleaners, floor polishers, mowers, slicers, knives, grinders, irons and presses.
3. Do not use cords that have splices, exposed wires, or cracked or frayed ends.
4. Do not carry plugged in equipment or tools with your finger on the switch.
5. Do not carry equipment or tools by the cord.
6. Disconnect the tool from the outlet by pulling on the plug, not the cord.
7. Tum the tool off before plugging or unplugging it.
8. Do not leave tools that are “On” unattended.
9. Do not handle or operate electrical tools when your hands are wet or when you are standing on wet floors.
10. Do not operate spark inducing tools such as grinders, drills or saws near containers labeled
“Flammable” or in an explosive atmosphere such as a paint spray booth.
11. Tum off the electrical tool and unplug it from the outlet before attempting repairs or service work. Tag the tool “Out of Service”.
12. Do not use extension cords or other three-pronged power cords that have a missing prong.
13. Do not remove the ground prong from electrical cords.
14. Do not use an adapter such as a cheater plug that eliminates the ground.
15. Do not plug multiple electrical cords into a single outlet.
16. Do not run extension cords through doorways, through holes in ceilings, walls or floors.
17. Do not drive over, drag, step on or place objects on a cord.
18. Do not use portable power tools unless they have color-coded green bands taped to the handles. These green labeled tools have ground Fault Circuit Interrupters incorporated into the plug end of the power cord. The use of these power tools is required when working in older buildings or temporary work locations where the work environment is often damp,
and the available electrical outlets may not meet our wiring standards.
19. Do not stand in water or on wet surfaces when operating power hand tools or portable electrical appliances.
20. Do not use a power hand tool to cut wet or water-soaked building materials or to repair pipe leaks.

21. Do not use a power hand tool while wearing wet cotton gloves or wet leather gloves.
22. Never operate electrical equipment barefooted. Wear rubber-soled or insulated work boots.
23. Do not operate a power hand tool or portable appliance that has a frayed, worn, cut, improperly spliced or damaged power cord.
24. Do not operate a power hand tool or portable appliance if a prong from the three-pronged power plug is missing or has been removed.
25. Do not operate a power hand tool or portable appliance that has a two-pronged adapter or a two-conductor extension cord.
26. Do not operate a power hand tool or portable appliance while holding a part of the metal casing or while holding the extension cord in your hand. Hold all portable power tools by the plastic hand grips or other non-conductive areas designed for gripping purposes.

HAND TOOL SAFETY

1. Do not continue to work if your safety glasses become fogged. Stop work and clean the glasses until the lenses are clear and defogged.
2. Use tied off containers to keep tools from falling off of scaffolds and other elevated work platforms.
3. Carry all sharp tools in a sheath or holster.
4. Tag worn, damaged or defective tools “Out of Service” and do not use them.
5. Do not use a tool if its handle has splinters, burrs, cracks, splits or if the head of the tool is loose.
6. Do not use impact tools such as hammers, chisels, punches or steel stakes that have mushroomed heads.
7. When handing a tool to another person, direct sharp points and cutting edges away from yourself and the other person.
8. When using knives, shears or other cutting tools, cut in a direction away from your body.
9. Do not chop at heights above your head when you are working with a hand axe.
10. Do not carry sharp or pointed hand tools such as screwdrivers, scribes, aviation snips, scrapers, chisels or files in your pocket unless the tool or your pocket is sheathed.
11. Do not perform “makeshift” repairs to tools.

12. Do not carry tools in your hand when you are climbing. Carry tools in tool belts or hoist the tools to the work area using a hand line.
13. Do not throw tools from one location to another, from one employee to another, from scaffolds or other elevated platforms.
14. Transport hand tools only in tool boxes or tool belts. Do not carry tools in your clothing.

FILES/ RASPS
1. Do not use a file as a pry bar, hammer, screwdriver or chisel.
2. When using a file or a rasp, grasp the handle in one hand and the toe of the file in the other.
3. Do not hammer on a file.

CHISELS
1. Use the chisel that has been sharpened; do not use a chisel that has a dull cutting edge.
2. Do not use chisels that have “mushroomed” striking heads.
3. Hold a chisel by using a tool holder if possible.
4. Clamp small workpieces in the vise and chip towards the stationary jaw when you are working with a chisel.

HAMMERS
1. Use a claw hammer for pulling nails.
2. Do not strike nails or other objects with the “cheek” of the hammer.
3. Do not strike a hardened steel surface, such as a cold chisel, with a claw hammer.
4. Do not strike one hammer against another hammer.
5. Do not use a hammer if your hands are oily, greasy or wet.
6. Do not use a hammer as a wedge or a pry bar, or for pulling large spikes.
7. Use only the sledge type hammer on a striking face wrench.

SAWS
1. Keep control of saws by releasing downward pressure at the end of the stroke.
2. Do not use an adjustable blade saw such as a hacksaw, coping saw, keyhole saw or bow saw, if the blade is not taut.

3. Do not use a saw that has dull saw blades. Oil saw blades after each use of the saw.
4. Keep your hands and fingers away from the saw blade while you are using the saw. Do not carry a saw by the blade.
5. When using the hand saw, hold the workpiece firmly against the work table. Use the circular saw guard when using the circular saw.

SCREWDRIVERS

1. Always match the size and type of screwdriver blade to fit the head of the screw.
2. Do not hold the workpiece against your body while using a screwdriver.
3. Do not put your fingers near the blade of the screwdriver when tightening a screw.
4. Use a drill, nail, or an awl to make a starting hole for screws.
5. Do not force a screwdriver by using a hammer or pliers on it.
6. Do not use a screwdriver as a punch, chisel, pry bar or nail puller.
7. When you are performing electrical work, use the screwdriver that has the blue handle; this screwdriver is insulated.
8. Do not carry a screwdriver in your pocket.
9. Do not use a screwdriver if your hands are wet, oily or greasy.
10. Do not use a screwdriver to test the charge of a battery.
11. When using the spiral ratchet screwdriver, push down firmly and slowly.

WRENCHES

1. Do not use wrenches that are bent, cracked or badly chipped or that have loose or broken handles.
2. Do not slip a pipe over a single head wrench handle for increased leverage.
3. Do not use a shim to make a wrench fit.
4. Use a split box wrench on flare nuts.
5. Do not use a wrench that has broken or battered points.
6. Use a hammer on striking face wrenches.
7. Discard any wrench that has spread, nicked or battered jaws or if the handle is bent.
8. Use box or socket wrenches on hexagon nuts and bolts as a first choice, and open end wrenches as a second choice.

PLIERS

1. Do not use pliers as a wrench or a hammer.
2. Do not attempt to force pliers by using a hammer on them.
3. Do not slip a pipe over the handles of pliers to increase leverage.
4. When you are performing electrical work, use the pliers that have the blue rubber sleeves covering the handle; these pliers are insulated.
5. Do not use pliers that are cracked, broken or sprung.
6. When using the diagonal cutting pliers, shield the loose pieces of cut material from flying into the air by using a cloth or your gloved hand.

VISES

1. When clamping a long workpiece in a vise, support the far end of the workpiece by using an adjustable pipe stand, saw horse or box.
2. Position the workpiece in the vise so that the entire face of the jaw supports the workpiece. Do not use a vise that has worn or broken jaw inserts, or has cracks or fractures in the body of the vise.
3. Do not slip a pipe over the handle of a vise to gain extra leverage.

CLAMPS

1. Do not use the C-Clamp for hoisting materials
2. Do not use the C-Clamp as a permanent fastening device

SNIPS

1. Wear your safety glasses or safety goggles when using snips to cut materials.
2. Wear your work gloves when cutting materials with snips.
3. Do not use straight cut snips to cut curves.
4. Keep the blade aligned by tightening the nut and bolt on the snips.
5. Do not use snips as a hammer, screwdriver or pry bar.
6. Use the locking clip on the snips after you have finished using them.
7. Do not lift compressed gas cylinders by the valve protection cap.
8. Do not store compressed gas cylinders in areas where they can come in contact with chemicals labeled “Corrosive”.
9. Hoist compressed gas cylinders on the cradle, sling board, pallet or compressed gas cylinder basket.
10. Do not place compressed gas cylinders against electrical panels or live electrical cords where the cylinder can become part of the circuit.

USE OF COMPRESSED GAS CYLINDERS

1. Do not use dented, cracked or other visibly damaged cylinders.
2. Use only an open ended or adjustable wrench when connecting or disconnecting regulators and fittings.
3. Do not transport cylinders without first removing the regulators and replacing the valve protection caps.
4. Close the cylinder valve when work is finished, when the cylinder is empty or at any time the cylinder is moved.
5. Do not store oxygen cylinders near fuel gas cylinders such as propane or acetylene, or near combustible material such as oil or grease.
6. Stand to the side of the regulator when opening the valve.
7. If a cylinder is leaking around a valve or a fuse plug, move it to an outside area away from where work is performed, and tag it to indicate the defect.
8. Do not hoist or transport cylinders by means of magnets or choker slings.
9. Do not use compressed gas to clean yourself, equipment or your work area.
10. Do not remove the valve wrench from acetylene cylinders while the cylinder is being used.
11. Open cylinder valves slowly. Open the valves fully when the compressed gas cylinder is being used, in order to eliminate possible leakage around the cylinder valve stem.

WELDING/ CUTTING/ BRAZING

1. Obey all signs posted in the welding area.
2. Do not leave oily rags, paper or other combustible materials in the welding, cutting or brazing area.
3. Use the red hose for gas fuel and the green hose for oxygen.
4. Do not use worn or cracked hoses.
5. Do not use oil, grease or other lubricants on the regulator.
6. “Blow Out” hoses before attaching the torch.
7. “Blow Out” the cylinder valve before attaching or reattaching a hose to the cylinder.
8. Do not use a cigarette lighter to ignite torches; use friction lighters only.
9. When welding, wear welding gloves, a long sleeve shirt, long pants, a welding apron and the welding helmet that has filter plates and lenses.
10. Do not change electrodes using your bare hands; use the dry rubber gloves.
11. “Bleed” oxygen and fuel lines at the end of the workshift.

12. Use the welding cart that has a safety chain or cable when transporting cylinders used for welding.
13. Always have a fire watch while welding.
14. Make sure appropriate PPE is worn when welding.

OXYACETYLENE WELDING

1. Do not use oxygen cylinders in areas where oils or any combustible liquids such as diesel fuel or motor fuel are present.
2. Turn the valve on the torch clockwise to tum off the gas before putting down the welding or cutting torch.
3. Never allow pressure to remain in the hoses over night:
a. Turn the valve knobs located at the base of the torch handle, clockwise, to close the valves.
b. Turn the valve knobs on the oxygen and acetylene cylinders, clockwise, to close the valves on these cylinders.
c. Reduce the pressure on the regulator diaphragms by pulling back on the T-handles, out from the regulator, until the T-handles tum easily; do not completely back the T-handles out from the regulator.
d. Turn the valve knobs at the base of the torch, counterclockwise, to open the valves; leave the valves open for only two seconds, then tum the valve knobs clockwise to close the valves again. If you do not observe a drop-in pressure on the regulator gages, repeat steps ab-.
4. If the cylinder has been transported in a horizontal position, do not use it until it has been stored upright for two hours.

Ladder Safety & Inspection Procedures

The following safety precautions shall be observed in connection with the use of ladders:

1.Portable rung and cleat ladders shall, where possible, be used at such a pitch that the horizontal distance from the top support to the foot of the ladder is one-quarter of the working length of the ladder (the length along the ladder between the foot and the top support). The ladder shall be so placed as to prevent slipping, or it shall be lashed, or held in position. Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.

2.Ladders for which dimensions are specified should not be used by more than one man at a time nor with ladder jacks and scaffold planks where use by more than one man is anticipated. In such cases, specially designed ladders with larger dimensions of the parts should be procured.

3.Portable ladders shall be so placed that the side rails have a secure footing. The top rest for portable rung and cleat ladders shall be reasonably rigid.

4.Ladders shall not be placed in front of doors opening toward the ladder unless the door is blocked open, locked, or guarded.

5.Ladders shall not be placed on boxes, barrels or other unstable bases to Obtain additional height.

6.Ladders with broken or missing steps, rungs, or cleats, broken side rails or other faulty equipment shall not be used; improvised repairs shall not be made.

7. Short ladders shall not be spliced together to provide long sections.

8. Ladders shall not be used as guys, braces, or skids, or for other than Their intended purposes.

9. Tops of the ordinary types of stepladders shall not be used as steps.

10. On two-section extension ladders the minimum overlap for the two sections in use shall be as follows:

Size of Ladder (feet)	Overlap (feet)
Up to and including 36	3
Up to and including 48	4
Up to and including 60	5

11. No ladder should be used to gain access to a roof unless the top of the ladder shall extend at least 3 feet above the point of support, at eaves, gutter or roof line.

12. Step ladders longer than 20 feet shall not be used.

13. Step ladders longer than 20 feet shall not be used.

14. Step ladders longer than 20 feet shall not be used.

15. A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.

16.A simple rule for setting up a ladder at the proper angle is to place the base a distance from the vertical wall equal to one-fourth the working length of the ladder.

17. Ladders must not be tied or fastened together to provide longer sections. They must be equipped with the hardware fittings necessary if the manufacturer endorses extended uses.

18. The length of single ladders or individual sections of ladders shall not exceed 30 feet.

19. Extension ladders shall not exceed 48 feet in length

20. All procurement and disposal of ladders will be performed through or with the knowledge of the Safety Officer. Ladders will be destroyed beyond use prior to disposal to prevent further use by anyone.

General Housekeeping

Housekeeping at Work

Housekeeping at work is as important as it is at home, especially if you want a safe workplace. People who must function every day in a messy, disorderly work environment have a lower morale, however, they may not be aware of the cause. But the safety ramifications of poor housekeeping are even more important. Housekeeping practices are part of the workplace safety program. Poor housekeeping may result in employee illness, injuries or even citations by OSHA.

In addition, good housekeeping practices generally reflect good management practices and pride in the workplace, signaling that the company cares about safety. Work sites that have poor housekeeping practices with rubbish, waste and broken items around the grounds and a general appearance of poor maintenance do not instill confidence in our customers about the quality of the services that we provide.

How can such a seemingly “minor” issue such as housekeeping have such serious consequences?

Poor Housekeeping practices can result in:
• Injuries when employees trip of fall and are struck by out-of-place objects
• Injuries from using improper tools because the correct tools could not be found
• Lowered production because of the time spent maneuvering over and around someone else’s mess and time spent looking for tools and materials
General Housekeeping rules to remember:
• Housekeeping is everyone’s responsibility
• Clean up after yourself. Pick up all trash and debris and dispose of it properly. Keep our work areas clean throughout the day, minimizing time needed to clean up a larger mess at the end of the day.
• Stack materials and supplies in an orderly manner and secure them so they won’t topple over.
• Conducting regular workplace inspections that include housekeeping
• Cleaning up spills on floors immediately and locating and fixing the cause of spills or leaks
• Keeping walkways clear of obstructions
• Storing materials and equipment neatly and out of the way

- Regular removal of waste
- Repairing damaged plant and equipment quickly
- Repair or mark cracked or uneven floors
- Beware of hoses and extension cords laying on ground

As a supervisor, what are my responsibilities?
As a supervisor your responsibilities are at two levels. You have responsibilities as a manager and as an employee. At the supervisor level of management, you are responsible for your area. You implement the systems, policies and procedures in your area and with the team that you manage. As an employee you are responsible to set an example for your own team. Good housekeeping is the responsibility of everyone in the workplace. It is important that you set an example for your workers always demonstrating good housekeeping practices and encouraging your workers to do the same.

Emergency Preparedness & Procedures

Emergency Preparedness Checklist

To PREVENT emergencies, do all employees:

• Check SDS & container labels regarding potential dangers of fire, explosions, toxic vapors or other emergencies

• Strictly obey "No Smoking" rules

• Recognize faulty or damaged electrical equipment & refrain from using it

• Understand the danger of accidental sparks from metal objects near flammable substances

• Promptly clean up small spills of flammable substances.

If they must RESPOND to emergencies, do all employees:

• Recognize the sound of the emergency alarm

• Know how and to whom to report a fire, spill or other incident

• Know how to shut down operations or systems in an emergency

• Know the locations of fire extinguishers, the appropriate ones to use for each classification of fire and how to use them

• Know the locations of first-aid supplies

• Know the locations of emergency exits, evacuation routes and designated gathering places

• Understand the importance of staying calm and following emergency procedures exactly

Emergency Preparedness

EXIT ROUTES

Employers must provide exit routes (continuous and unobstructed paths of exit within a workplace to a place of safety) that are designed, constructed, and maintained to provide immediate escape for all employees at a facility during an emergency.

EMPLOYEE ALARM SYSTEM

The employee alarm must be audible and visible above ambient noise or light levels by all employees in the affected portions of the workplace. Touch-sensitive devices may be used to alert those employees who would not otherwise be able to recognize the audible or visual alarm. It must be distinctive and recognizable as a signal for evacuating the work area or for performing actions designated under the EAP. The employer must establish procedures for sounding alarms in the workplace. For those employers with 10 or fewer employees in a particular workplace, direct voice communication is an acceptable procedure for sounding the alarm, provided all employees can hear the alarm. Such workplaces need not have a backup system.

EMPLOYEE REPORTING AN EMERGENCY

The employer must explain to each employee the preferred means of reporting emergencies, such as manual pull-box alarms, public address systems, radio, or telephones. The employer must post emergency telephone numbers near telephones, employee notice boards or other conspicuous locations when telephones serve for reporting emergencies. Where a communication system also serves as the employee alarm system, all emergency messages must have priority over all nonemergency messages.

MEDICAL SERVICES & FIRST AID

Employers must ensure that employees receive medical attention when it is needed. In particular, an employer must ensure that either the workplace has immediate access to staffed medical facilities, or personnel trained to

perform first aid. First-aid supplies must also be available.

HAZARD COMMUNICATION

Employers must protect employees during the workplace's normal operating conditions and in foreseeable emergencies. See the Hazard Communication for more information.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Emergency situations often require responders and cleanup personnel to wear PPB. Employers must meet the general requirements for PPE when they are not addressed in a hazard- or industry-specific standard. General PPB standards apply to protection for the eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers. See the PPE-General analysis for more information.

HAZWOPER

HAZWOPER standards, cover employers with one or more employees and who engage cleanup operations required by federal, state or local governments at uncontrolled hazardous waste sites, treatment, storage and disposal facilities; and emergency response operations for release, or substantial threats of release, of hazardous substances.

While HAZWOPER covers hazardous materials incidents, it does not cover most types of emergency incidents, such as fires, technical rescue, structural collapse, or natural disasters. State and local employees in states without an OSHA-approved regulatory program are covered under an Environmental Protection Agency standard (40 CFR 311) that incorporates OSHA HAZWOPER requirements by reference. See the HAZWOPER analysis for more information.

Hazard Communication

SDS Sheets
Hazard Communication Program
Legendary Marina

The management of Legendary Marina is committed to preventing accidents and ensuring the safety and health of our employees. We will comply with all applicable federal and state health and safety rules. Under this program, employees are informed of the contents of the OSHA Hazard Communications Standard, the hazardous properties of chemicals with which they work, safe handling procedures and measures to take to protect themselves from these chemicals. These chemicals may be physical or health related. This written hazard communication plan is available at the following location for review by all employees: Book is located by the "Right to Know Board".

Identifying Hazardous Chemicals

A list is attached to this plan that identifies all hazardous chemicals with a potential for employee exposure at this workplace. Detailed information about the physical, health, and other hazards of each chemical is included in a Safety Data Sheet (SDS); the product identifier for each chemical on the list matches and can be easily cross-referenced with the product identifier on its label and on its Safety Data Sheet.

The labeling system to be used by Legendary Marina will follow the requirements in the 2012 revision of the OSHA Hazard Communication Standard to be consistent with the United Nations Globally Harmonized System (GHS) of Classification of Labeling of Chemicals. The label on the chemical is intended to convey information about the hazards posed by the chemical through standardized label elements, including symbols, signal words and hazard statements.

All hazardous chemical containers used at this workplace will have:

1. The original manufacturer's label that includes a product identifier, an appropriate signal word, hazard statement(s), pictogram(s), precautionary statement(s) and the name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

2. A label with the appropriate label elements just described

3. Workplace labeling that includes the product identifier and words, pictures, symbols, or combination that
provides at least general information regarding the hazards of the chemicals
The Safety Coordinator will ensure that all containers are appropriately labeled. No container will be released for use until this information is verified. Workplace labels must be legible and in English.

4. Keeping Safety Data Sheets
The manufacturer or importer of a chemical is required by OSHA to develop a Safety Data Sheet (SDS) that contains specific, detailed information about the chemical's hazard using a specified format. The distributor or supplier of the chemical is required to provide this SDS to the purchaser. SDS's are readily available to all employees during their work shifts. Employees can review SOS for all hazardous chemicals used at this workplace. The SDS books are located on the "Right to Know Board".
The SDS's are updated and managed by the Safety Coordinator. If a SDS is not immediately available for a hazardous chemical, employees can obtain the required information by calling the Safety Coordinator.

5. Training Employees about Chemical Hazards
Before they start their jobs or are exposed to new hazardous chemicals, employees must attend a hazard communication training that covers the following topics:
• An overview of the requirements in OSHA's Hazard Communication Standard.
• Hazardous chemicals present in their workplace.
• Any operations in their work area where hazardous chemicals are used.
• The location of the written hazard communication plan and where it may be reviewed.
• How to understand and use the information on labels and in Safety Data Sheets.

• Physical and health hazards of the chemicals in their work areas.
• Methods used to detect the presence or release of hazardous chemicals in the work area.
• Steps we have taken to prevent or reduce exposure to these chemicals.
• How employees can protect themselves from exposure to these hazardous chemicals through use of engineering controls/ work practices and personal protective equipment.
• An explanation of any special labeling present in the workplace.
    o What are pictograms?
    o What are the signal words?
    o What are the hazard statements?
    o What are the precautionary statements?
• Emergency procedures to follow if an employee is exposed to these chemicals.

The Safety Coordinator is responsible to ensure that employees receive this training. After attending the training, employees will sign a form verifying that they understand the above topics and how the topics are related to our hazard communication plan. Prior to introducing a new chemical hazard into any department, each employee in that department will be given information and training as outlined above for the new chemical hazard.

6. Informing Employees who do Special Tasks

Before employees perform special (non-routine) tasks that may expose them to hazardous chemicals, their supervisors will inform them about the chemicals' hazards. Their supervisors also will inform them about how to control exposure and what to do in an emergency. The employer will evaluate the hazards of these tasks and provide appropriate controls including Personal Protective Equipment.

Globally Harmonized System

Lock Out / Tag Out Procedures

Program for
Control of Hazardous Energy

The Control of Hazardous Energy (Lock out / Tag out)

The following lock out / tag out program is provided only as a guide to assist employers and employees in complying with the requirements of 29 CFR 1910.147, as well as to provide other helpful information. It is not intended to supersede the requirements of the standard.
An employer should review the standard for particular requirements which are applicable to their individual situation and make adjustments to this program that are specific to their company. An employer will need to add information relevant to their particular facility in order to develop an effective, comprehensive program.

I. OBJECTIVE
The objective of this procedure is to establish a means of positive control to prevent the accidental starting or activating of machinery or systems while they are being repaired, cleaned and/or serviced. This program serves to:
A. Establish a safe and positive means of shutting down machinery, equipment and systems.
B. Prohibit unauthorized personnel or remote control systems from starting machinery or equipment while it is being serviced.
C. Provide a secondary control system (tagout) when it is impossible to positively lock out the machinery or equipment.
D. Establish responsibility for implementing and controlling lock out / tag out procedures.
E. Ensure that only approved locks, standardized tags and fastening devices provided by the company will be utilized in the lockout/tagout procedures.

II. ASSIGNMENT OF RESPONSIBILITY
A. Lance Brown/ Safety Coordinator will be responsible for implementing the lockout/tagout program.
B. Marina Management is responsible for enforcing the program and insuring compliance with the procedures in their departments.
C. Lance Brown/ Safety Coordinator is responsible for monitoring the compliance of this procedure and will conduct the annual inspection and certification of the authorized employees.
D. Authorized employees (those listed in Attachment A) are responsible for following established Lockout/Tagout Procedures.

E. Affected employees (all other employees in the facility) are responsible for insuring they do not attempt to restart or re-energize machines or equipment which are locked out or tagged out.

III. PROCEDURES

The ensuing items are to be followed to ensure both compliance with the OSHA Control of Hazardous Energy Standard and the safety of our employees.

A. Preparation for Lockout or Tagout

Employees who are required to utilize the lockout/tagout procedure must be knowledgeable of the different energy sources and the proper sequence of shutting off or disconnecting energy means.

The four types of energy sources are:

1.Electrical (most common form); Control of Hazardous Energy (Lock out / Tag out)

2. Hydraulic or pneumatic.

3. Fluids and gases; and

4. Mechanical (including gravity).

More than one energy source may be utilized on some equipment and the proper procedure must be followed in order to identify energy sources and lockout/tagout accordingly.

B. Electrical

1. Shut off power at machine and disconnect.

2. Disconnecting means must be locked or tagged.

3. Press start button to see that correct systems are locked out.

4. All controls must be returned to their safest position.

5. Points to remember:

a. If a machine or piece of equipment contains capacitors, they must be drained of stored energy

b. Possible disconnecting means include the power cord, power panels (look for primary and secondary voltage), breakers, the operator's station, motor circuit, relays, limit switches and electrical interlocks.

c. Some equipment may have a motor isolating shut-off and a control isolating shut-off.

d. If the electrical energy is disconnected by simply unplugging the power cord, the cord must be kept under the control of the authorized employee, or the plug end of the cord must be locked out or tagged out.

C. Hydraulic/ Pneumatic
1. Shut off all energy sources (pumps and compressors). If the pumps and compressors supply energy to more than one piece of equipment, lockout or tag out the valve supplying energy to the piece of equipment being serviced.
2. Stored pressure from hydraulic/ pneumatic lines shall be drained/ bled when release of stored energy could cause injury to employees.
3. Make sure controls are returned to their safest position (off, stop, standby, inch, etc..).

D. Fluids and Gases
1. Identify the type of fluid or gas and the necessary personal protective equipment.
2. Close valves to prevent flow, and lockout/ tagout.
3. Determine the isolating device, then close and lockout/ tagout.
4. Drain and bleed lines to zero energy state.
5. Some systems may have electrically controlled valves. If so, they must be shut off and locked/ tagged out.
6.Check for zero energy state at the equipment.

E. Mechanical Energy
Mechanical energy includes gravity activation, energy stored in springs, etc.
1. Block out or use die ram safety chain. Control of Hazardous Energy (Lock out / Tag out)
2. Lockout or tagout safety device.
3. Shut off, lock out or tag out electrical system.
4. Check for zero energy state.
5. Return controls to safest position.
F. Release from Lockout/ Tagout
1. Inspection: Make certain the work is completed and inventory the tools and equipment that were used.
2. Clean-up: Remove all towels, rags, work-aids, etc.

3. Replace guards: Replace all guards possible. Sometimes a particular guard may have to be left off until the start sequence is over due to possible adjustments. However, all other guards should be put back into place.
4. Check controls: All controls should be in their safest position.
5. The work area shall be checked to ensure that all employees have been safely positioned or removed and notified that the lockout/tagout devices are being removed.
6. Remove locks/tags. Remove only your lock or tag. Then notify the Safety Coordinator to come and perform final inspection and then remove the final lock. Make sure to return the lock out tag to the Safety Coordinator.

G. Service or Maintenance Involving More than One Person
When servicing and/or maintenance is performed by more than one person, each authorized employee shall place his own lock or tag on the energy isolating source. This shall be done by utilizing a multiple lock scissors clamp and then a lockout tag, signed by both parties, should be placed on the equipment stating the problem.

H. Removal of an Authorized Employee's Lock out / Tag out by the Company
Each location must develop written emergency procedures that comply with 1910.147(e)(3) to be utilized at that location. Emergency procedures for removing lockout/tagout should include the following:
1. Verification by employer that the authorized employee who applied the device is not in the facility.
2. Make reasonable efforts to advise the employee that his/her device has been removed. (This can be done when he/she returns to the facility).
3. Ensure that the authorized employee has this knowledge before he/she resumes work at the facility.
4. Once removed, the lockout tags should be given to the authorized person.

I. Training and Communication
Each authorized employee who will be utilizing the lock out / tag out procedure will be trained in the recognition of applicable hazardous energy sources, type and magnitude of energy available in the workplace, and the methods and means necessary for energy isolation and control.

Each affected employee (all employees other than authorized employees utilizing the lockout / tag out procedure) shall be instructed in the purpose and use of the lockout / tag out procedure, and the prohibition of attempts to restart or re-energize machines or equipment that are locked out or tagged out.

List of Authorized Personnel for Lock Out / Tag Out Procedures

Name	Job Title
TBD	VP/ Marine Operations
TBD	Marina Manager
TBD	Equipment Maintenance Supervisor
TBD	Asst Marina Manager
TBD	Asst Marina Manager
TBD	Physical Maintenance Director
TBD	Facilities Director

All deckhands / marina employees that have been trained on how to perform our lock out / tag out procedures. Their names will be on file and listed below:

1. TBD - Facilities Custodian

2.

3.

4.

Certification of Training
(Authorized Personnel)

I certify that I received training as an authorized employee under Legendary Marina's Lockout / Tag out program. I further certify that I understand the procedures and will abide by those procedures.

_____ _____

Authorized Employee Signature Date

Spill Containment & Clean Up

Spill Containment & Clean Up

Workplace spills are hazardous for a variety of reasons. Obviously, the danger of inhaling chemicals and other corrosives is high whenever there is a spill. A spill can also have far reached effects on our environment and wild life, especially if the spill happens over water or on bare ground and is allowed to reach the water table or is allowed to reach a storm drain.
Spills can also cause injuries from falls due to slippery walking surfaces. Many of the chemicals used are oil based making them harder to clean up. If these spills are not fully cleaned up, the risk of someone slipping or falling increases, posing a big risk of injury to our employees.
In addition to the dangers of injury to employees through falls or inhalation, there are many other risks associated with spills. Some chemicals are highly flammable and containment procedures must include steps that eliminate the threat of explosions or fire.
The first line of defense against spills is a workplace training program. The aim of our training program is to educate all of our employees about the chemicals that they will be using, and the potential dangers or threats posed. All materials used must have a SDS sheet filed in our book which outlines the correct procedures for handling a spill.
Some of the most important training for spill safety is prevention. By using the right storage techniques, you can easily avoid many spills.

Some key points on storage of chemicals:
• Materials should be stored in appropriate containers for that chemical make up
• The area where these items are going to be stored should have appropriate signage so there is no question about the identity of the chemical
• Store only the minimum amount needed
• The storage location should be out of the flow of traffic, both pedestrian and mechanical
• The storage location should also be away from sewer drains and any exterior doors

Spill Kit Contents

A well-stocked spill kit is essential for anyone that works with any kind of chemical or potential pollutant. These kits should be located in a place such that they are accessible to all employees as well as being near areas where spills are likely. Spill kits are very important for the protection of people and property in the event of a spill. As such, it should be a regular task to inspect and restock all spill kits. The spill kit should contain the following items and in quantities sufficient to handle the volume of any potential spill:

• Absorbents - pads, pillows and socks

• Granular absorbent

• If needed, a boom for encasing the spill when on water

• Personal Protection Equipment- eye ware, gloves, face protection, booties, disposable jump suit, respirator, broom and shovel as well as bags for disposing of soiled items and used granular absorbent.

• Plastic bucket

Regular scheduled training will be in place for all new employees and refresher classes for existing employees so that everyone is very familiar with the correct procedures for spill cleanup.

Step-by-step Spill Clean

* Risk Assessment *

1. Evaluate the type of material spilled and identify the source
2. Determine whether or not there is a need for assistance from fire or medical personnel. If needed, call 911
3. Alert your supervisor and employees in the area
4. lf the chemicals that have been spilled are flammable, alert everyone to this fact and ventilate area

If needed, call 911
3. Alert your supervisor and employees in the area
4. If the chemicals that have been spilled are flammable, alert everyone to this fact and ventilate area
* Retrieve the spill kit *

PPE
Wear the appropriate protective gear for the situation. If the source or the material is not known, assume the worst. If respiratory protection is deemed necessary, make sure the equipment is put on correctly. Again when in doubt, opt for the respiratory protection

Containment
Contain the liquid and seal the drains

Stop the source
Close valves, rotate punctured drums and plug leaks where it is possible and safe to do so

Begin Clean Up
Use sorbents to absorb spilled liquids. To use them correctly, first remove any large pieces of debris or other
solid materials from the area. Then place the absorbent directly on the area in which the spill has occurred.
Once the absorbent material is completely full, remove it and dispose of it properly.

Decontaminate
Clean the spill area with mild soap or de-greaser and water. Clean all tools used so that they are ready to be
reused

Restock
Replace absorbent materials and safety equipment used in any clean up operation

Dock Rescue Procedures

Procedures For Removing Someone From Water That Has Fallen Off Of Docks:

• Assess the situation-determine whether the person is drowning

• Shout for help-no matter of your experience level, having someone to assist is a good idea

• Decide which rescue method to use
- If person is close (within 12 feet) use a Shepherd's hook
- If more than 12 feet, use a lifebuoy

• Proceed with rescue
- When performing a reaching assist, lay down on docks with legs spread apart (this ensures that you are in a stable position). Then reach out (use your

dominant arm which will be your strongest and shout to the person to grab on and then pull them towards dock.
Direct them to dock ladder, if possible, if not be careful to keep them off of the sides of the dock when lifting them up out of the water (have someone assist you if possible).

** Detailed directions on how to throw a lifebuoy as well as how to use a Shepherd's crook are included in our training and written directions are posted on each dock.

How To Throw A Lifebuoy

Bend your knees maintaining your balance and hold the line with one hand

Aim your throw so that the lifebuoy will fall just past the swimmer and is within reach. Make sure not to hit swimmer with buoy

Slowly pull the rope, making sure to lean your body weight away from the swimmer

If swimmer is wearing a life jacket, hold the collars of the jacket & pull out the swimmer

Procedures For Using A Shepherd's Crook

• People can struggle, when in a drowning situation, and stay on the surface for only 20 to 60 seconds. With this in mind, anyone who is going to assist must move quickly.

• You should yell for help

• Warn others on the dock to stay clear of the back of the shepherd's crook and be careful that you do not strike anyone behind you.

• Stand away from edge of dock and brace your legs so that you won't fall in water when the person grabs the crook.

• Dip the crook down in the water and place the curved section where it can be reached by the person in the water.

• If the person can not grab the crook, or do not see or feel it, dip the crook deeper in the water and swing it around the back of the person's chest just under the armpits.

• Slowly pull them to the dock. Have assistance when removing the person from the water not come in contact with the sides of the dock (barnacles).

Company Protocols & Procedures for OSHA Inspections

Why would there be an OSHA inspection?

Because there was an issue that caused a breach of the OSHA General Duty Clause. This simply states the it is the responsibility of the employer to provide a safe and healthy work environment. The breach results in one of the following:
imminent danger - any conditions or practices that could reasonably cause death or serious physical harm. (investigations within 24 hours)

fatality - must be reported to OSHA within 8 hours

complaints - made by employees or customers
regular scheduled inspections in high hazard industries

What to expect?

First, the compliance officer will show their credentials and describe the scope of the inspection.
Even though the inspection may be limited, if the inspector finds another violation that is in plain
view during walk around, a citation could be issued.

The compliance officer is required to conduct the inspection during normal business hours. The
establishment being inspected has the right to deny access and request that OSHA obtain a warrant.
If you do not object or ask for a warrant this constitutes voluntary consent.

Certain documents have to be made available to OSHA. These include the Illness and Injury log,
hazard communication program, SDS sheets and a lock out / tag out program. Under federal law the OSHA form 300 and the 301 logs have to be produced within 4 hours.

If the inspector is there for a limited inspection, such as answering a complaint, the employer can object to widening the scope of the inspection. If the compliance officer is allowed to enter but is denied access to any portion of the workplace or if any part of the inspection is hindered such as
taking pictures or questioning employees, this will constitute a refusal of entry.

Representatives of the employer and employees are entitled to accompany the OSHA inspector on the walk around. The officer may interview employees privately during the course of the inspection.

Here is a good example of less is more. If asked questions, be truthful but precise. Do not guess or ramble on. Just state facts and remember, when dealing with OSHA, there is never anything “off the
record”.

Inspections are intended to result in the abatement or correction of any violations of the Occupational Safety and Health Act of 1970.

What happens if we get a violation?

Citations are only issued to the employer regardless of whether the violation was caused or committed by an employee. If you receive a citation, you need to:
• Correct the violation
• Negotiate with OSHA to have the citation or penalties amended or withdrawn.

• Contest the citation

If the employer is going to contest the citation, this must be done by the 15th day after receiving the citation. Then when OSHA review commission files a formal complaint, there is a 30-day window in which to respond.

General timeline for abatement of the violations:

No citation may be issued after 6 months following any violation.

Abatement is simply the correction of the safety or health hazard. A reasonable amount of time must be given to correct or abate any problems or violations. The date that is given to have issues resolved is the abatement date.
If this does not give enough time for the correction of the violation, then a petition to modify Abatement date (PMA) must be filed. Employers must post this petition for 10 days.

Once the employer is notified that a penalty is proposed, you have 15 days to file an intent to contest with the Area Director in writing.

Once a violation is issued and not contested, the employer has 10 days from the Abatement date to
send documentation that the violation has been fixed. Employer has to post any violations for 3 days or until corrected.

Employees must ask for the abatement documents (evidence to show that the violation was corrected) within 3 days of notification that they have been submitted to OSHA. Then the employer then has 5 days to comply and must post the documentation for 3 days.

THINGS TO REMEMBER ABOUT AN OSHA INSPECTION

• Be cooperative

• Do not evade questions or try to hide anything

• Answer questions truthfully, but do not speculate

• Do not be sarcastic or argumentative

• Take notes, measurements and photos

• If possible, fix any violations immediately

• Do not volunteer information, answer only the questions asked

12.5 APPENDIX C – TURBIDITY MONITORING FORM AND SCHEDULE

Form 12.1 Turbidity Monitoring Form

Date: _____

Name: _____ Position: _____

Weather Description: _____

Description of Area: _____

PARAMETER	BACKGROUND SAMPLE	COMPLIANCE SAMPLE
Location (Station ID)		
Weather		
Conditions (eg. clear, rainy, cloudy, overcast, etc.)		
Air Temperature (°F)		
Wind Speed (mph)		
Wind Direction		
Sea Conditions		
Tidal Stage (eg. High, low, incoming, outgoing, slack, etc.)		
Wave Height (ft)		
Turbidity (Depth of sample to be taken at mid-depth below water surface)		
Time at Sample Analysis		
Instrument Calibration (Date)		
Turbidity (NTU) **First Reading**		
Difference (= Compliance – Background)		
Time at Sample Analysis		
Instrument Calibration (Date)		
Turbidity (NTU) **Second Reading**		
Difference		

(= Compliance – Background)		
Average Difference		
If the Average Difference between the Compliance Sample and Background Sample is greater than 20 NTUs (i.e., the Compliance Sample is more than 20 NTUs above the Background Sample), the CONTRACTOR shall immediately cease construction activities until corrective measures have been taken and the turbidity has returned to acceptable levels.		

Table 12-1 Turbidity Monitoring Schedule

TIMELINE	ACTIVITY DESCRIPTION
2 Weeks Before Construction	Check background turbidity levels
1 Week Before Construction	Re-check background turbidity levels
1 Week Before Construction	Submit background turbidity results to DEPP
During Construction (Twice Daily)	Conduct turbidity testing twice daily to confirm levels are less than 20 NTUs above background levels
During Construction (Daily)	Inspect turbidity curtains, moorings, etc.
During Construction (Weekly)	Submit weekly turbidity monitoring reports to DEPP
Post Construction (Weekly for 1 Month)	Continue turbidity testing once a week for 1 month after completion of construction activities.

12.6 APPENDIX D – DOMESTIC WATER & SANITARY SEWER DESIGNS

The full document will be made available upon request.

SPECIFICATION FOR SUPPLY AND INSTALLATION OF WATER DISTRIBUTION PIPES AND SEWER COLLECTION SYSTEMS IN SUBDIVISIONS AND OTHER REAL ESTATE DEVELOPMENTS

1 MATERIALS

1.1 GENERAL

All Pipes and fittings used for water distribution shall be Class 'C' or better and shall conform to the following AWWA Standards (latest revision):

Ductile Iron AWWA - C100
PVC AWWA C900 - 89
HDPE AWWA C906

Pipes and fittings of B.S., Canadian, International Standard (ISO) or other manufacture to equivalent specification may be used where the outside diameters are equal to those of AWWA C100 pipes. Specifications and dimensional data for pipes of such manufacture shall be submitted for approval to the Water and Sewerage Corporation along with the proposal.

Prior to ordering materials the Developer shall submit to the Water and Sewerage Corporation for approval, Shop Drawings - specifications and/or relevant information for all pipes, fittings and other materials that are to be installed in the Subdivision

1.2 DUCTILE IRON PIPE

Where Ductile Iron pipe is used it shall be cement lined and in accordance with specifications AWWA-C104, C110, C111, and C151.

Where Ductile Iron Pipes are to be laid in or at the surface of brackish ground water the pipes shall be protected with polyethylene encasement in accordance with AWWA C105, from the adverse external aggressive soil and or ground water conditions.

1.3 PVC

1.3.1 JOINTS

Joints in PVC pipes shall be of the rubber-ring push-fit type, either spigot and socket, or double bell coupling.

1.3.2 SERVICE CLAMPS

Service clamps shall be of a type recommended for use with PVC pipe by PVC pipe manufacturers.

1.4 High Density Polyethylene (HDPE, PE) Pipe and Fittings

A. Materials: Materials used for the manufacturer of polyethylene pipe and fittings shall be PE4710/3408 high density polyethylene with a cell class of 445474C, specifically calls out: a density falling between 0.947 and 0.955 g/cm3, a PENT value of 500 hours (for slow crack growth resistance) and an HDS of 1000psi (with a design factor of 0.63).
B. Polyethylene Pipe: HDPE Pipe shall conform to AWWA C906, DR11, IPS diameter and NSF 61 Standard. Polyethylene pipe shall be manufactured in accordance with ASTM F714, Polyethylene (PE) Plastic Pipe (SEDR-PR) Based on Controlled Outside Diameter and shall be so marked.
C. Service Identification Stripes: NOT REQUIRED
D. Polyethylene Fittings and Custom Fabrication: Polyethylene fittings and custom fabrications shall be molded or fabricated by the pipe manufacturer or trained personnel. Butt fusion outlets shall be made to the same outside diameter, wall thickness, and tolerances as the mating pipe. All fittings to be DR 9 fabricated fittings. Fittings are to be plain end to allow butt fusion except where otherwise noted on the drawing.
E. Molded fittings: Molded fittings shall be manufactured in accordance with ASTM D3261, Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing, and shall be so marked. Each production lot of molded fittings shall be subjected to the test required under ASTM D3261.
F. Fabricated Fittings: Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings. Fabricated fittings shall be rated for internal pressure service equivalent to the full service pressure rating of the mating pipe. Directional fittings 16" IPS and larger such as elbows, tees, crosses, etc., shall have a plain end inlet for butt fusion and flanged directional outlets. Part drawings shall be submitted for the approval of the Engineer.
G. Polyethylene Flange Adapters: Flange adapter shall be made with sufficient throughbore length to be clamped in a butt fusion joining machine without the use of a stubend holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooved to provide gasketless sealing, or to restrain the gasket against blow-out.
H. Back-up Rings and Flange Bolts: Flange adapters shall be fitted with lap joint flanges pressure rated equal to or greater than the mating pipe. The lap joint flange bore shall be chamfered to provide clearance to the flange adapter radius. Flange bolts and nuts shall be 316SS or higher. The flange adapter bolt rings and MJ glands are to be factory epoxy coated. Field applied coal tar epoxy DI is to be applied if there are any chips in the factory coating during handling or installation of the pipe.
I. The MJ adapters require Stainless Steel stiffeners.
J. Manufacturer's Quality Control: The pipe and fitting manufacturer shall have an established quality control program responsible for inspecting incoming and outgoing materials. Incoming polyethylene materials shall be inspected for density, melt flow rated, and contamination. The cell classification properties of the material shall be certified by the supplier, and verified by Manufacturer's Quality Control.

1.5 PIPE SIZES

All pipe sizes shall conform to the standard sizes used by the Water and Sewerage Corporation i.e. 2", 4", 6", 8", 10" etc.

2" diameter pipes shall be the minimum size used for distribution and their use shall be limited to:

1) Lengths not exceeding 300' if dead-ended.
2) Lengths not exceeding 600' if supplied from both ends.
3) Lengths servicing not more than 16 single family houses.

The use of the 4" diameter pipes shall be limited to:-

1) Lengths not exceeding 1,200' if dead-ended,
2) Lengths nor exceeding 2,000' if supplied both ends,

6" diameter pipes shall be the minimum size provided where the installation of fire hydrants is required.

2 INSTALLATION

2.1 ALIGNMENT AND GRADE

All pipes shall be laid and maintained to the required line and gradients with fittings, valves and hydrants at the required locations.

2.2 DEPTH OF PIPES

All pipes shall be laid to such depth as will provide the minimum cover over them as follows: -

New Providence Family Islands
ALL PIPE IS TO BE LAID WITH
A 3' 0" MINIMUM COVER

ALL PIPE IS TO BE LAID WITH
A 2' 6" MINIMUM COVER

2.3 TRENCHING

Trenches shall be excavated to a minimum width of 12" plus the nominal pipe diameter (6" each side), and to a depth 4" deeper than the pipe invert for 4" diameter pipe or less, and 6" for all others. The bottom of the trenches shall be properly cleaned and leveled, and selected granular material (to the Corporation's approval), ¾" pea rock or sand provided under the pipes. The Corporation's Engineer may approve the use of alternative fine material for bedding in certain circumstances.

Bell holes shall be provided at each joint to permit proper jointing and to avoid the possibility of bridging between joints.

2.4 PIPE LAYING

Every precaution shall be taken to ensure that no foreign material enters the pipe while being laid and that rubber-rings are properly in the pipe bell.

2.5 VALVES

Gate or butterfly valves may be used and variety shall be provided where shown on the plan. Valves shall be provided on all branch mains at their junctions with principal mains. The following standards apply:

AWWA C-509 - Resilient seated gate valves for water and sewerage system.
AWWA C-504 - Rubber seated butterfly valves.
All valves must be square-nut operated, non-rising stem fitted with O-Ring seals.
All standards refer to the latest revision unless otherwise noted.

2.6 WASHOUT

Dead-end lines must be avoided where possible. Where dead-ends cannot be avoided, a wash-out shall be provided.

The outlet of a washout valve shall be placed so that no damage can occur in the valve chamber, or to the road surface, and that no flooding of private property can take place when the wash-out valve is opened.

2.7 VALVE BOXES

All buried valves shall have cast iron two- or three-piece valve boxes with cast iron covers. Valve boxes shall be provided with suitable heavy bonnets and to extend to such elevation at or slightly above the finished grade surface. The barrel shall be one- or two-piece, screw type, having 5 ¼ inch shaft. Covers shall have "WATER" cast into the top for all water mains. All valves shall have actuating nuts extended to within six inches of the top of the valve box cover.

Valve boxes shall be provided with concrete bases.

2.8 FIRE HYDRANTS AND WELLS

2.8.l Fire wells of approved Ministry of Works design shall be provided where indicated on the plans (at 800' to 1,000' apart). Where ground water levels permit, firewells shall be used except where the Corporation's Engineer considers hydrants necessary.

2.8.2 Fire hydrants must be in accordance with AWWA C502. Hydrants should have 2-2 ½" outlet nozzles and 1-4 1/2", pumper nozzle with standard hose threads. Caps must be provided on nozzles and attached by chains. A standard AWWA operating nut with O-Ring type seal is required. Hydrants should also be installed with break-away flange at base. Two operating keys shall be provided with each hydrant installed.

2.9 ANCHORAGE

Concrete anchor blocks shall be provided at all tees, bends, caps, plugs etc. to prevent reaction movements. The concrete shall be placed between solid ground and the fitting to be anchored. In conditions where modifications are necessary, alternative proposals may be made to the Corporation's Engineer for consideration.

2.10 BACKFILLING

Backfilling shall be carried out with suitable fine material in order to provide a firm and continuous support for the pipe, shall be placed by hand fully compacted; in layers not exceeding 6" thick for the first 12" over the pipe. Approved mechanical methods may be employed for backfilling the remainder of the trench.

If suitable fine material is not available in sufficient quantity from the trench, the necessary material shall be imported to complete backfilling.

Where PVC pipe is being laid, sand or other approved material shall be used for bedding and surround, and for the first 12" above the pipe. It shall be placed by hand and be fully compacted in 6" layers before the remainder of the trench is backfilled in the usual manner.

2.11 SERVICE CONNECTIONS

2.11.1 MATERIALS

The polyethylene service pipe shall be PEX (cross-linked polyethylene) pipe (PEXGOL), class 15, SDR11. Saddles shall be made from brass DZR, with bolts and straps from stainless steel 316 and thread according to FBSPT (Female British Standard Pipe Tapered.).The couplings shall be ISIFLO SPRINT composite-push-fittings and the Meter valve and Ball valve and brass fittings shall be DZR brass, by BUGATTI.

2.11.2 CONNECTIONS

The service line shall be connected to the mains by brass DZR saddles and valves, and couplings of a type approved by the Corporation.

2.11.3 SIZES

A ¾" (DN25) diameter service shall be used for a single residential connection. For serving two houses a 1" (DN32) diameter service shall be used. For serving Multi-Family and Quadruple house connections a 1-1/2" (DN 50) diameter service shall be used.

2.11.4 LOCATION

The service line to each lot shall terminate in a meter box with a corporation stop at a point 2'0" inside the lot boundary, 3'0" from the boundary of the adjacent lot, and with a minimum of 12" cover.

2.11.4 INSTALLATION/LOCATION

The new service connection shall be installed perpendicular (a deviation of +/-3° is permitted) to the main. The service line to each lot shall terminate in a meter box with a Meter valve brass DZR at a point 2'0" inside the lot boundary, 3'0" from the boundary of the, and with a minimum of 12" cover.

Regarding the bedding of the service line, a 2" layer of suitable bedding (sand) shall be used for bedding. Initial backfilling shall take place by using suitable material up to 6" above pipe. Selected excavated material (not saturated) can be used for backfilling, however it has to be screened to eliminate anything over 1".

2.11.5 COVER

Service lines shall have a minimum cover of 2 feet in the carriageway and be protected by 2" PVC ducting

SEWERAGE REQUIREMENTS FOR SUBDIVISIONS AND OTHER DEVELOPMENTS

3. TECHNICAL REQUIREMENTS

3.1 SEWERS

Sewer pipes and fittings shall be PVC SDR 35 with factory bonded, resilient joints which shall attain water tightness by compression of the gasket material around the entire periphery of the pipe.

3.2 LEAKAGE

Leakage for new construction, or systems that have never been commissioned, must be zero. Leakage inward or outward from existing sewers shall not exceed 300 gallons per inch diameter per mile per day.

3.3 SIZE

The minimum allowable size of sewers other than house connections shall be eight (8) inches diameter.

3.4 GRADES

The following minimum grades be provided: _

8" diameter sewers		0.40%
10" "	"	0.28%
12" "	"	0.22%
15" "	"	0.15%
18" "	"	0.12%
21" "	"	0.10%
24" "	"	0.08%

3.5 ALIGNMENT

Sewers shall be laid with uniform slopes and alignment between manholes and on completion shall show a full circle of light when lamped between manholes.

3.6 MANHOLES

Manholes shall be installed at all changes of grade, alignment or size of sewer, at all intersections and at distances not greater than 400 feet. The minimum inside diameter of manholes shall be 48 inches.

3.7 FLOW CHANNEL

The manhole floor shall have a flow channel made to conform in shape and carrying capacity to that of the sewers.

3.8 FORCE MAINS

Force mains shall be ductile iron or PVC pressure pipe with rubber_ring, push fit joints. Minimum velocity in the force main shall be 2.5 feet per second. The following standards will apply:

Ductile Iron _ AWWA C100
PVC _ AWWA C900
HDPE _ AWWA C906

3.9 PUMPING

3.9.1 PUMPING STATION

Sewage pumping stations shall be concrete wet well pumping station incorporating easily removable close-coupled submersible pumps.

3.9,2 PUMPS

Two or more pumps compatible with the standard models (FLYGT) used by the Corporation, shall be provided in each pumping station. Where only two pumps are provided each must be capable of handling twice the peak flow and be the same model and impeller size.

3.9.3 METERING

At all pumping stations devices for measuring sewage flows and power consumption shall be installed.

3.9.4 POWER SUPPLY

Approved standby power equipment or facilities to allow the quick connection of standby power equipment shall be provided at pumping stations.

3.10 AS_BUILT PLANS

The designer shall be engaged to prepare as_built drawings which shall be available for viewing during construction and submitted to the Water and Sewerage Corporation within seven (7) days of project completion. Final inspections and approvals will not be granted without the same

3.11 CONSTRUCTION & INSTALLATION

All construction works shall be carried out by competent contractors experienced in the construction of sewerage works and all machinery installation shall be supervised, tested and/or certified by the manufacturer's representative.

TESTING PROCEDURES

4. WATER DISTRIBUTION PIPES

HYRDOSTATIC (PRESSURE) TEST

4.1 Before a length of pipeline is tested, each pipe shall be securely anchored. All thrust and anchor blocks shall have been constructed and, when the pipeline is in the trench , at least the barrel of each pipeline shall be covered with not less than 36 inches of backfill material or be backfilled to ground level where the cover is less than 36 inches. Normally all joints shall be left exposed until the pressure testing has been satisfactorily completed. Should circumstances make it necessary to backfill a pipeline completely before pressure testing it shall be the Contractor's responsibility to excavate joint holes during pressure testing in the event that this is necessary to locate leaks.

4.2 Pressure testing shall be carried out as the work proceeds in such lengths of pipeline as are convenient and meet with the approval of the Engineer (Water and Sewerage Corporation). Such lengths shall not exceed 2000 feet. The ends of the length of pipeline under test shall be closed by means of securely anchored caps, blank flanges or valves. (*Test pressure shall not exceed the rated pressure of the valves when the pressure boundary of the test section includes closed, resilient seated gate valves or butterfly valves (maximum 150 psi.)).*

4.3 Service lines shall be shown to be free from leaks before backfilling is carried out and on completion of the work the Corporation cock at the main shall be left in the open position.

4.4 All mains shall be tested to a minimum of 100 psi and shall maintain the test pressure (zero drop) for the test period. The test period shall be at minimum, two hours. In any event the test period shall be as indicated by the Engineer. Should the main not maintain the test pressure for the test period, then all leaks must be located and repaired, and the main retested.

4.5 *Pressurization of Water Main:* The hydrostatic test pressure should be a minimum of 100 psi. The pressure in the pipeline shall be slowly raised to the test pressure, based on the elevation of the highest point of the line or section under test and corrected to the elevation of the test gauge. The test pump shall then be disconnected and the pipeline left charged under pressure with air valves opened for a period of not less than 24 hours to allow air in the pipeline to be expelled and the pressure in the main to stabilize. At the end of this period of time the test pump shall be reconnected and the pressure in the pipeline raised again to the test pressure and this pressure maintained for a period of 24 hours or such other periods as directed by the Engineer (The minimum required time shall be two hours.).

4.6 HDPE TEST PROCEDURE

1) Maximum duration for any test including initial pressurization, initial expansion, and time at test pressure, must not exceed twenty-four (24) hours. If the test is not completed due to leakage, equipment failure, etc., depressurize the test section, then allow it to "relax" for at least eight (8) hours before bringing the test section up to test pressure again.
2) The test procedure consists of initial expansion, and test phase. During the initial expansion phase, the test section is pressurized to the test pressure (100 psig) and enough make-up liquid is added as required to return to test pressure.
3) The test phase shall be five (5) hours made up as follows:
4) Gauges will be read at the beginning and then again at the end of the first two hours. If the pressure changes in the first two hours then the pressure will be read after the next hour up to a maximum of 3 hourly readings. If there is no pressure change during the gauge reading periods then the pressure test is successful and leakage is not indicated. If a pressure change is recorded during the 5 hour test phase then the test fails. The test section is depressurized and the test has to redone after a minimum eight (8) hour period. The contractor is to check for any leaks and make necessary repairs before the pipe is retested.

4.7 Notices (written) for all testing are to be received and confirmed, within 48 hours (96 hours for Family Islands), of proposed test, and date and times are to be confirmed by the Corporation. All tests are to start within 15 minutes of the agreed time.

4.8 The following requirements also apply:
(i) Gauges are to be a maximum of 150 to 200 psi. (oil filled) and graduated in a maximum of 2 psi. increments.
(ii) A minimum of 2 gauges are required for all sections. Sections longer than 1,000 feet should have a minimum of one gauge per 1000feet or any part thereof.
(iii) Road base course and survey/lot markers must be in place prior to commencing.

4.9 If further construction works are believed to have affected the integrity of a previously tested section, that section shall be re-tested at the Developer's expense in accordance with the procedure outlined above.

4.10 Confirmation of in-house testing in the presence of the EOR along with clear indication of the extent of test area must be received by the Corporation prior to the requests for official testing.

DISINFECTION (BACTERIOLOGICAL TEST)

4.11 The water mains must be disinfected after passing the hydrostatic test. Water from the existing distribution system must be used to fill the water main. At a point not more than 10 ft downstream from the beginning of the new water main, a dose of chlorine feed must be provided such that the water will not have less than 25 mg/l free chlorine.

4.12 The main must be super-chlorinated for a period not less than 24 hours. After 24 hours the line must be flushed with water from the existing water distribution system until such time as the concentration in the water leaving the main is not higher than what is acceptable for domestic use.

4.13 After the line is flushed samples must be collected by the Environmental Health Public Analyst Lab and, the Water and Sewerage Corporation Lab personnel, at points decided by the Corporation and the Engineer_of_Record. The samples shall be tested for bacteriological quality, and shall show the absence of coliform organisms.

4.14 The water used for bacteriological testing must be metered and the cost of the connection and water borne by the developer. For smaller systems, the Corporation will complete the chlorination and bacteriological testing as a part of the water distribution system tie-in.

5. SEWERAGE SYSTEM TESTING

SEWER ALIGNMENT TEST

5.1 Sewers when lamped between manholes must show a full circle of light. During the test, manholes will be inspected for evidence of dampness, proper benching and channel sweeps, internal painting, and other features.

INFILTRATION_EXFILTRATION TESTING

5.2 *Infiltration:* Where the water table is above the top of the sewer, and there is evidence of possible leakage during the lamp test and inspection of the manholes, an infiltration test is required.

5.3 *Exfiltration:* An exfiltration test is required for all sewers where the water table is below the invert. The test would be conducted by an air pressure or water test. The sections between each manhole should be closed with a rubber stopper and that section filled with air to approximate 5 psi. The line should maintain the gauge pressure for 30 minutes. Alternatively, isolated sections can be filled with water and the level in the manhole checked over a -hour period.

6. INSPECTION AND TESTING

All works shall be open to inspection by the Water and Sewerage Corporation Engineers throughout construction. Final testing of all elements and commissioning shall be carried out in the presence of and to the satisfaction of the Water and Sewerage Corporation.

7. AS-BUILT DRAWINGS:

7.1 An electronic copy (both PDF and AutoCad formats) of the as-built drawings shall be supplied to the Corporation prior to the commencement of any testing by WSC.

ISSUED FOR PERMIT

BRON
POSSIBILITIES UNLIMITED

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PROJECT NAME: BLUE WATER CAY DEVELOPMENT
LOCATION: NEW PROVIDENCE, BAHAMAS

DRAWING DESCRIPTION: WATER AND SEWER SPECIFICATIONS

REV. NO.	DATE(mm/dd/yy)	ISSUE DESCRIPTION
0	08-04-2022	PRELIMINARY DESIGN ISSUE
1	10-07-2022	DESIGN DEVELOPMENT ISSUE
2	12-12-2022	UPDATED DESIGN DEVELOPMENT ISSUE
3	01-13-2023	CONSTRUCTION DRAWINGS ISSUED FOR APPROVAL
4	01-28-2023	UPDATED CONSTRUCTION DRAWINGS ISSUED FOR APPROVAL
5	02-22-2023	UPDATED CONSTRUCTION DRAWINGS- UPDATED SITE ACCESS

Drawn PD
Checked KAS
Appr. KAS
Date
Proj. No. 2021.064

C601-BWC

12.7 APPENDIX E – HAZARD ASSESSMENT CHECKLIST

Location: _____

Inspected by: _____

Date and Time: _____ Time: _____

To use this form correctly, you must look at each item and tick the appropriate box. If corrective action is required then select Yes by placing a check mark in the box (☑ Yes). If corrective action is not required then place a check mark in the No box (☑No).

If the item is not relevant to the type of project activity or phase of the project during the inspection, place a check mark in the Not Applicable box (☑ N/A).

If a corrective action is required, you must describe the required corrective action.
The person responsible for ensuring the corrective action is completed should be listed by First and Last name.

HEALTH HAZARDS			
Chemical Hazards			
Review Material Safety Data Sheets (MSDS) and product labels to identify chemicals in your workplace that have low exposure limits, are highly volatile, or are used in large quantities or stored in unventilated spaces. Identify activities that may result in skin exposure to chemicals.			
	Corrective Action Required	Describe Corrective	Person responsible
Chemicals are correctly labelled and stored	☐Yes ☐ No		
Emergency numbers are displayed	☐Yes ☐ No		
Adequate ventilation for fumes and dust	☐Yes ☐ No		
Person protective equipment and clothing are available	☐Yes ☐ No		
Emergency eyewash, showers are available	☐Yes ☐ No		

MSDS are available	☐Yes ☐ No		
Physical Hazards			
Identify any exposures to excessive noise (areas where you must raise your voice to be heard by others), elevated heat (indoor and outdoor), or sources of radiation (radioactive materials, X-rays, or radiofrequency radiation).			
	Corrective Action Required	Describe Corrective Action, if necessary	Person responsible
	☐Yes ☐ No		
	☐Yes ☐ No		
	☐Yes ☐ No		
BIOLOGICAL HAZARDS			
Determine whether workers may be exposed to sources of infectious diseases, molds, toxic or poisonous plants, or animal materials (fur or scat) capable of causing allergic reactions or occupational asthma.			
	Corrective Action Required	Describe Corrective Action, if necessary	Person responsible
Do workers work garbage, soils, waste?	☐Yes ☐ No		
Is there a possibility of cuts, abrasions?	☐Yes ☐ No		
	☐Yes ☐ No ☐		
ERGONOMIC HAZARDS			
Examine work activities that require heavy lifting, work above shoulder height, repetitive motions, or tasks with significant vibration.			
	Corrective Action Required	Describe Corrective Action, if necessary	Person responsible
Is there high rates of repetitive motion?	☐Yes ☐ No		
Are workers exposed to vibrations?	☐Yes ☐ No		
Do workers have to maintain the same position for extended periods of time?	☐Yes ☐ No		

Is there adequate space around machines?	☐Yes ☐ No		
Are worked involved in manual lifting, carrying, pushing, pulling?	☐Yes ☐ No		
QUALITATIVE EXPOSURE ASSESSMENTS			
When possible, using air sampling or direct reading instruments.			
	Corrective Action Required	Describe Corrective Action, if necessary	Person responsible
	☐Yes ☐ No		
	☐Yes ☐ No		

12.8 APPENDIX F – INCIDENT INVESTIGATION REPORT FORM

This incident (accident, illness, exposure, etc.) investigation record shall be kept on file for at least 1 year after the date of occurrence. All affected employees and applicable third parties shall be provide a copy of incident records upon request.

Incident Information	
Name(s) of Affected Employee(s):	Date of Incident:
Work Area of Affected Employee(s):	Date Investigation Began:
Describe Nature of Incident:	
Part(s) of Body Affected:	
Describe Medical Treatment Administered:	
Witness Information	
Witness #1 Name:	Phone:
Witness's Description of Incident:	
Witness's Signature:	
Witness #2 Name:	Phone:
Witness's Description of Incident:	
Witness's Signature:	

Investigation Results		
List contributing factors/root causes:		
Was a mandatory safe work practice violated?	Yes	No
Was the unsafe condition, practice or protective equipment problem corrected immediately? If no, what has been done to ensure correction?	Yes	No
Do additional mandatory safe work practices need to be implemented? If yes, please describe safe work practice:	Yes	No
List corrective actions taken and date implemented:		
Signature of Investigator:	Date:	
Signature of Person Responsible for Corrective Actions:	Date:	

12.9 APPENDIX G – PUBLIC CONSULTATION REPORT

PUBLIC CONSULTATION REPORT

LEGENDARY MARINA RESORT AT BLUEWATER CAY

NEW PROVIDENCE, THE BAHAMAS

Submitted to:

Department of Environmental Planning and Protection

Ministry of Environment and Natural Resources

Charlotte House, 1st Floor

Charlotte & Shirley Street

Nassau, The Bahamas

Prepared by:

BRON Ltd.

On behalf of:

Legendary Marine Bluewater Cay Ltd.

New Providence, The Bahamas

BRON File No.: 2021.064.24

January 19, 2023

Table of Contents

1. Introduction

The purpose of this report is to document the public consultation meetings that were conducted on November 23rd and December 14, 2022, related to the Environmental Impact Assessment (EIA) for Legendary Marina Resort at Bluewater Cay in New Providence, The Bahamas (the Project). The presentations were made the Developer's representative, Mr. Rodney Chamberlain, Vice-President, Legendary Marine. The public consultation report, like the EIA, is submitted to the Government of The Bahamas through the Department of Environmental Planning and Protection (DEPP) for evaluation of the project's application for a Certificate of Environmental Clearance (CEC).

This report includes a recap of the virtual public meeting 0n Nov 23, 2022, physical in-person meeting on Dec 14, 2022, and a follow-up site visit by the Director of DEPP on Dec 15, 2022, and responses to questions received.

2. Public Consultation

In accordance with the Environmental Planning and Protection Act (2019), the meeting was advertised in a local newspaper, that being The Nassau Guardian, at least 14 calendar days prior to the date of the meetings. The EIA was made available to the public in two ways. Electronic copies were available for download from the website Legendary Marina Resort at Bluewater Cay https://legendarybluewatercay.com/environmental-submission/ , and hard copies were available for reading at the Island Administrator's Office in New Providence. The purpose of these activities were to notify the public about the project, allow them the opportunity to review the EIA, invite them to the public consultation meeting(s), and identify e-mail addresses to submit questions or concerns in regards to the Project EIA directly to the developer at https://legendarybluewatercay.com/environmental-submission/ and/or DEPP at inquiries@depp.gov.bs or by phone: (242)-322-4546 or (242) 397-9390.

3. Virtual Meeting

The official virtual public consultation meeting for Legendary Marina Resort at Bluewater Cay was conducted via Zoom at 6 p.m. ET November 23rd, 2022. The meeting, which was moderated by DEPP Director, Dr. Rhianna Neely-Murphy, had 23 participants. The agenda for the meeting included introductions to the project team, review of the project site plan and EIA highlights, remarks from the developer, and a question-and-answer period. Comprehensive audio and chat

transcripts were prepared from a video recording of the meeting and are provided in the appendices of this report. There were no questions or concerned raised during the meeting.

At the conclusion of the virtual public consultation meeting, Director Neely-Murphy advised that a second public consultation meeting be held in person at a location within the Yamacraw Constituency, to increase public participation in the consultation process for the Project.

4. In-Person Meeting

The second public consultation meeting for Legendary Marina Resort at Bluewater Cay was held at Thelma Gibson Primary School, Commonwealth Blvd, Elizabeth Estate, Yamacraw, New Providence, The Bahamas, on December 14th, 2022. The meeting, which was moderated by DEPP Director Dr. Rhianna Neely-Murphy, had 13 participants (7 signed the attendance sheet).

The agenda for the meeting included introductions to the project team, review of the project site plan and EIA highlights, remarks from the developer, and a question and answer period. There was a total of 8 questions asked during this meeting. A transcript of the meeting including the questions and answers are provided in the appendices of this report.

5. Emails

Following the public meetings, the public was given an additional 21 business days to submit questions or concerns in regard to the EIA directly to the developer and/or DEPP at the e-mail addresses aforementioned or the Project website, or directly by phone. The purpose of this was to allow the public the opportunity to review the EIA documents and submit their comments or concerns. This allotted time expired on December 22nd, 2022, which is 21 business days from the date of the official public consultation meeting. To date, two e-mail comments in support of the Project were received by the developers and DEPP during the Public Consultation period. See Appendix F for Letters of Support received via email.

6. Follow Up Site Visit

A follow up site visit was conducted by DEPP with the BRON Ltd. team on December 15th, 2022, at the Legendary Marina Resort at Bluewater Cay site. This visit was attended by Director DR. Rhianna Neely-Murphy, Assistant Director Mr. Pyfrom, Project Manager Ms. Tamika McFall, and Assistant Environmental Officer Ms. Lauren Miller (DEPP), Dr. Bassem Eid, and Ms. Kelli Armstrong (BRON), and Mr. Phillip Robinson, Sr. Project Manager (Legendary Marine Bluewater Cay Ltd.).

The following are the notes of importance in regard to impact and mitigation of the Project and public concerns expressed:

- The proposed culvert to flush the mangrove swamp (north-west of the Project site) is a positive contribution of the project
- Climate resilient design of infrastructure is positive
- Some concerns about the resort peninsula (breakwater is ok, but the large infill will be addressed in the EMP).
- Noise impacts on residents on northside of Yamacraw Lake – although most will be on the marina side, it is recommended by the director to start plantation of trees on the northern side of the property at early stage of the construction
- Address impact on Turtles and other marine mammals during dredging and breakwater construction – e.g., underwater low frequency Sonar technology required and endorsed by DEPP to deter marine life from site during construction to be investigated by BRON and should be addressed in the EMP.
- Letters of recommendation from residents in support of the project to be collected and included in Public Consultation Report
- No impact of Project on flooding issues in the low-lying areas north of the Project site.
- Residents' concerns about the impact of the development on increasing property value , and the "tax free zone" classification will be reclassified by Ministry of Finance.

7. CONCLUSION

The official public consultation meetings for Legendary Marina Resort at Bluewater Cay were carried out in accordance with DEPP regulations and guidelines.

The objectives of the Public Consultation process and associated meetings were met, wherein all questions related to the EIA were appropriately addressed by the Legendary Marina Resort at Bluewater Cay project team, and to the satisfaction of participants.

Since the meetings, no further communications were received via e-mail by the developer or DEPP, except two (2) letters (e-mail) of support (Attached in Appendix F).

As a result, the Legendary Marina Resort at Bluewater Cay project team looks forward to continuing their work with DEPP to obtain a CEC. Following the publication of this report on the Legendary Marina Resort at Bluewater Cay website, the Environmental Management Plan (EMP) will be prepared by BRON to present in detail the identified mitigation measures, and guide best management practices for the Project as it moves into the construction permitting phase.

8. Appendix A – Recorded Audio Transcript

Legendary Marina Blue Water Cay and DEPP Zoom Meeting
November 23, 2022

Transcript File: Dept of Enviro Planning LBWC 23-11-22 pt 1

January 16, 2022 – First Draft

Dr. Rhianna Neely-Murphy, Director of the Department of Environmental Planning and Protection (DEPP):

…A hotel club resort, bar, pools, restaurants, retail, fuel dock, workforce, housing, oceanfront villas, condos and residences, and a post for Bahamas customs and immigration.

We are here to discuss the environmental impacts associated with this proposed development. And I would like to remind that there may be an opportunity in the future to discuss the possible aspects of this project.

So, the project component... Mr. Chamberland will come in a few minutes to give a presentation on the project. And after that time, we will open the floor questions. All environmental documents are actually posted on the website already – legendary blue Marina key.com slash environmental submissions (correction: legendarybluewatercay.com/environmentalsubmissions) and they are available for review at the Department of Environmental Planning and Protection with an appointment. Please call the department at 322-4546. If you are interested in reviewing those documents, and we will set a time and a place for you to do so.

So, after this meeting, as I said earlier, there will be a 21-business day period for members of the general public to submit questions, as well as for the Department to continue to submit questions on any other government agencies, that will have questions concerning this development. And the developer is obliged to respond to those questions that are relevant to the environmental impacts of this project.

So, without further ado, I will turn the floor over to Mr. Chamberlain who will give the presentation on legendary Marina. Mr. Chamberlain. You have the floor.

Mr. Rodney Chamberlain – Legendary Marina at Blue Water Cay

Thank you, Dr. Neeley-Murphy. Let me share my screen.

Let's see the presentation.

This is Legendary Marine and I'm here at this evening to present on legendary Marina Resort at Bluewater Cay and in Nassau. I thank you for your time and look forward to explaining more about our project. I'll begin by showing the project location is it's in the south-east corner of New Providence Island near the Palm Cay Marina. And it's at the end of Fox Hill Road near the Yamacraw area. Just past the intersection of Fox Hill and Hanna Road where Fox Hill dead ends into the water.

The current site conditions… the previous developer dredged this area. This is a previously disturbed site where the previous developer came in and dredged this area and created this peninsula with seawalls and bulkheads. As far as we can tell, probably 15 to 20 years ago it was with the intent on selling home sites in this area. Since then, the project was abandoned and now the land lays derelicts in disrepair. A lot of the infrastructure is crumbling and is a site for a lot of various illegal activities. We've used some pictures of what's going on the site currently you can see it's overgrown and unkept. There's a lot of illegal dumping trash dumping on the site. A lot of trespassing, drinking, littering. We've talked to residents that live at in the Yamacraw area and they have complained about seeing activity and hearing human noises out there all hours of the night. And as I mentioned the seawalls are crumbling, the infrastructure is in poor condition and there's several boats sunk right at the site.

So, what we intend to do with this site instead is to make it into a world-class marina with a lot of social-economic benefits for locals, as well as The Bahamas as a whole. Our project centers around as a marina centric project with a few hospitality and food and beverage entities as well.

Our vision for this property includes oceanfront villas, a 100-slip marina in the wet basin, as well as we feel is the key component of our facility is the dry stack towards you see there in the middle. This is where boats are actually lifted out of the water with a forklift and placed inside for storage.

So, a couple of views and in this view, you can see on the bottom left corner. You can see our intention is to provide a new creation of a new neighborhood beach on the western boundary for public access.

These views are of a line-of-sight study that we did, showing the building and correct proportions and size from the distance across from the Yamacraw Lake. So, you can see that our plan is to include a very robust landscaping plan with native and bird friendly vegetation.

So, we'll begin with the environmental component by talking about what's there on site currently, from a biological standpoint. We've conducted several different surveys starting with the benthic survey, you know for the entire area, including the current existing dredge channel that you see there indicated in purple and white extending…

Some of the species are encountered the benthic diversity underwater in the area was included managing internal seagrass and in various locations, including some density populated areas where we would not be having any marine activity.

You can see in this previous slide this this sort of aqua color is a dense area a densely populated area for the most part the site includes manatee and turtle seagrass in fairly sparse condition. Some of the hard salt corals that exist included Corky sea finger in various locations and the rest of the majority of the property. I'm sorry. The underwater ecology is Sandy C bottom including a rocky title intertidal zone.

Additionally in the underwater area is a lot of signs of human influence. There's a lot of trash in areas as you can imagine including a car on the basin side. So, there's quite a bit of trash to be picked up as we move forward with development.

Our approach to mitigation, you know includes the activities, obviously you see there are land clearing, dredging, seawall construction, riprap replacement. Beach creation is all other areas of where we intend to conduct as we've as we develop the property and these activities lead to impacts - such habitat disturbance, turbidity in the water. The construction activity itself will have a dispersal activity on avian and other wildlife and of course, then there's human activity in the north associated with that. So, we recognize all these impacts and activities are necessary. And so now we look at ways that we can engage and mitigation. Our primary form of mitigation is avoidance. An example of that is we can take the dredge channel out to the sea work, and we can make sure that's in a direction that minimizes any impacts to any benthic ecology such as hard, soft and spiny corals.

It also includes transplanting and replanting new plantings that's not just for the benthic ecology. But also, for the flora as well, you're talking specifically of seagrass. And/or mangroves are intention to mitigate. Our impacts would be to either, you know, find a way to replant. It was their transplant or bring on new plantings on the site.

Beside several construction methods that are mitigative in nature and the sense that we provide as little as the service to the ground as possible by using for instance a backhoe instead of hydraulic pump for dredging methodology. And we also incorporate best protection best methods such as turbidity barriers and some instance to keep the turbidity of the water as low as possible.

And another big area where we mitigate our influences as to restorative concept, you know by selecting land that was previously disturbed and not a pristine piece of property.

We are taking what's there? And in fact, as you'll see we have opportunities to correct the wrongs of previous development. And as we move forward our development.

Additionally, we intend to coordinate with nonprofit organizations to figure out how we can be active and proactive environmental stewards.

No one, you know some of the other surveys we've done where the ABA survey and you can see here. We have some total species kind of 32 including some commonly seen birds in the Bahamas - the great cat bird, laughing goal. We also have a couple of birds that were in the conservation status including the White Crown pigeon was encountered on the property, which is a near threatened status as well as six species of concern including the Prairie Warbler.

The survey also encountered 32 different species on site. This includes nine different species of invasive plants, including the Hawaiian lettuce, the Casuarina, which is the property's completely overgrown with Brazilian pepper is found throughout but we also found six species of protected plants including the black and red mangroves as well as buttonwoods.

I want to talk a little bit about our approach to corporate responsibility which centers on three main principles on the first being environmental stewardship, you know, wherever we go. We're developing something. So, we always try to minimize our environment impacts through thoughtful planning and this can be achieved by building something that's context-sensitive and/or incorporating landscaping that that enhances the development by including species that are nest friendly for birds as well as food choices for birds and other animals. We also incorporate sustainable practices in our process such as utilizing recycled water. We have a lot of water demand this property for washing boats and irrigation and flushing motors and that

type of thing and we intend to use recycled water for those activities, and we also incorporate resilient building construction for various hurricanes for category 5 for instance.

We have a lot of social economic benefits with our property. We obviously want to create a prosperous development and we want those that prosperous development to be to have benefits for many that live around our development. So, we make sure that we're returning back to the community our social economic benefits start with the community outreach to sort of understand local concerns. We're always open-minded and have open ears to what's going on in the community as we move into it and become Neighbors in that community and it's a good idea. We try and do our outreaches early and as often as possible.

(11:26)
And ultimately our project has unique ability to create long-term jobs for your career-minded employees in a sense that you know, we have a lot of very specialized technicians that are involved in marine service repair forklift operation and maintenance as well as Hospitality management and these create career paths for people that include promotions and intensive training. So, these are these are very long-term careers.

And our economic impacts are obvious for the media area. But we also enhance the tourism which Bahamas is known for by including a new market of boaters. Some folks have both don't want to leave them outside in the salt water. And so, they will never bring into The Bahamas for that reason. There's nowhere to put them. By offering the first of its kind, you know, dry storage building like we intend to build - that makes it very attractive for somebody to bring our boat over and leave it in a hurricane-proof building while they go home. So, it's available when they need it, and it's safe when they don't need it (their boat). And that will attract a different market than what's there now.

(12:32)
We also created development that will generate long-term local income through they're obvious job creation. Not just locally and, I'll show later in family Islands as well and we create an environment on the property that invests in anybody who wants to come and be an entrepreneurial in our facility. We have a lot of opportunities for this type of spin-offs.

So, I'll start a zero in on the environmental stewardship because this is what this meeting is about. We have a multifaceted approach that takes an account a lot of proactivity on our part. But we have a central core belief that we don't just sell a service to people to store their boat. We also sell an experience on the water. It's our best interest to keep the water and as pristine and eco-friendly condition as possible because that is what draws people to The Bahamas. So, we know this. You know in our company, we're having boaters as well and we have all been coming to The Bahamas for a long time, and the reason is because of the water so we have a vested interest in making sure that our development incorporates environmental stewardship.

(13:44)
So go by each one is points, you know, I start with the one that we feel is sort of the big impact - that we can have a big positive impact that will show a tidal flow to the mangrove estuary to the Western development. This has a lot of downstream effects. After talking with folks in the in the local area. There are a lot of mosquitoes. We think that flushing that Mangrove out will have a lot of positive impact on reducing mosquito breeding areas.

Now I'll go a little more detail on this you can see here on this aerial - our development is on the right-hand side, but that Mangrove swamp to the left hand-side was originally a large mangrove swamp that was titled influenced. It looks like over time with a couple poorly timed developments have done is they cut off the natural flow the natural title flow that goes into the estuary.

And so what's happened is that water over time (it) has stagnated and it's caused a stunting of the growth of the mangroves. But beyond that, it doesn't allow fish near anymore so the normal nursery kind of properties of mangroves and this sort of shallow water areas we have, is kind of lost because it's cut off.

So, what we intend to do is in our first phase of our project is to cut a covert into the north side of the development underneath Fox Hill Road, and this reestablished a title flow between the Yamacraw on the right-hand side and the stagnant mangroves on the left-hand side. You see here. So, once we get this culvert in place and we properly designed, it that we restore natural tidal flow. We anticipated it revitalizes mangroves and as well as brings out a whole host of new fishes in there. You know the bottom the bottom end of the food chain, they can really use that area as a nursery and have a positive overall impact.

The mangroves, you know provide a lot of benefits and that's why we think this is such a crucial part of our Environmental Management Plan. Obviously, they provide filtration. A lot of people don't realize these are freshwater plants. So, the living in saltwater is the first thing they do is filter the salt water so that natural filtration property. They have filters out, you know phosphates and nitrates there are otherwise consider pollutants. Roots also provide this sort of labyrinth of an area for smaller fishes to utilize as a nursery. Which in turn has a lot of positive impact on critical fish species that are also important to a palenthonomy (16:12) and the roots by their very nature, provide a great shelter for I'm sorry a great protection against storm surge as not only is it attractive, it's also zero cost and zero maintenance once you're established. It's something a lot of people don't realize is mangroves provide an excellent carbon sink. They absorb carbon dioxide into their tissues like their leaves and their roots and store them throughout the plant.

And we recognize that this development is about six miles away from Bonefish Pond National Park so that and we've talked to the locals and there's a lot of bone fishing areas. So we want to throw this in there from the Bahamas Bonefish Conservation Action Plan of 2021, you know, it's stated there that restoring degraded (mangrove) creeks will increase the amount of habitat that's available to bonefish and other economically important species. So we feel we agree with that. We feel very strongly that this is a really key part of our approach to environmental stewardship.

We also intend to clear the land which will have the impact of removing invasive vegetation and we'll replace that with the landscaping plan that looks to native plants obviously, but also bird friendly plants.

(17:20)
And to give you an idea what I mean by this you can see I have two pictures here; you know one from 2016 you can see the banks was fairly barren and not a whole lot growing on it. And then the aerial in the drone shot on the right, in 2021, five years later. You can see it's just about completely overrun with Casuarina and other ones other invasive species, including Brazilian Pepper.

And as we know these plants as they begin to proliferate, they don't stop at the property boundary, then we'll continue to proliferate throughout the neighborhoods and adjacent properties as well. So, with us coming in and taking these over and replant it with data species. We have a large positive impact as well.

So we also in addition to revitalizing the mangroves swamp, we also intend to replant and incorporated replanting and incorporate impact in mangroves, wherever possible, you know, we will make every effort to replant what was there but in addition, we've already begun to have discussions with the locals on bringing in established mangroves. In other words, not just to see things that you see here, the transplants and seedlings but also bringing in already established mangroves that are already programmed to begin turning off seedlings that the day they're put in the ground, so we can help reestablish them and proliferate is even more rapidly. They just planning seedlings alone.

(18:46)
We can create eco-friendly break waters. We've had a lot of experience with creative break waters and through careful selection of rock size and placement. It has an additional benefit not just to protecting good storm surge, but also can create nooks and crannies for luck or better word, you know crevices for or fish habitat for the smaller and the food the food chain again helping that Nursery aspect of critically important fish species. So it's just another way of careful Planning and Development. We can enhance the environment.

As I mentioned before, we use recycled water from our operations. We have a lot of boat washdowns will do so it doesn't make sense for us to use potable water for those activities. So we'll capture that. We use rainwater and recycle water where we can. We have state of the art fueling systems. These include double wall tanks, double wall lines everywhere as well as at the dispensers are outfitted with capture devices so that any accidental leakage will be captured before making it to the water.

We also intend to incorporate in renewable energy sources - our barn has a large roof. So we obviously have a lot of place where you can play solar panels. And so, we intend to do that. We know it's very expensive to have power in the promise. So, this only makes sense from a business standpoint.

(20:10)
And I mentioned our building is category five rated and we're all going to utilize some specialized docks. It's you know, people ask me if it's possible to design a category 5 where you're building. I always answer, you know, 20 years ago, we were designing buildings for a wind speed of 120 miles an hour and now we're clearly into the 185 range. So, the answer is yes, just a matter of technology and willingness and we have both. Our docks at the same time are floating docks. These are a lot we believe are a lot more attractive, a lot more safer, pleasing, a lot easier to tie up to for boaters. But beyond that by their very nature, they can float and articulate with tides and it's a proper design - they also articulate where storm surge so they they're more a more sustainable design.

(20:58)
Beyond that though, as part of our EIA, we did extensive coastal modeling study where we looked at not just the surging from worst case scenario storms. And what we did was we looked

at a 50-year event and we based our finished world elevation uses for design basis for our occupy buildings.

We also make a great effort to capture stormwater for work areas as the forklifts go back and forth, and we capture that and we manage it, and all this is in an effort to prevent pollutant discharge into the surrounding water. Our forklift machines are equipped with the latest and emissions of technology, which has the byproduct of becoming a quieter forklift. In other words, the emissions filters are placed on the exhaust are there to reduce particulate and carbon emission, but at the same time, they inevitably in making the forklifts a quieter machine. So, we're happy to introduce that as well.

(21:58)
All our buildings will utilize the latest green technology from energy efficient electric equipment and fixtures to the installation needs. I mentioned it's very expensive to get power The Bahamas as we all know, so it only makes sense that we make our buildings as insulation is as possible.

We also intend to raise the grade of the entire site because we recognize the underground water resources are fairly close to service in areas of possibility if we have the if we have utilities going in deep enough we could impact those underground water resources. So, we raise this site to make sure that we mitigate or avoid those impacts all together.

We also aim to remove the sunken vessels in (the) Yamacraw (lake) and provided that they don't break apart. When as we begin to pull them up. We'll take the ones that are in intact enough and relocate them somewhere offshore and use them as additional artificial reefs and additional marine habitat. This has an additional property of potentially all setting some of the impacts to this finding and soft coral that we encounter in our dredging activities.

(23:15)
I mentioned we have a lot of socioeconomic benefits with our project, and I wanted to include this slide to demonstrate that our Marina in New Providence is very well positioned and if somebody lives in the states for Florida or North Carolina for instance can catch a flight to Nassau get off the plane, and their boat will be waiting in the water for them at our marina; with gas, ice, water, provisions, whatever they requested, and they could get their boat and within you know a two-hour ride, they could be at Staniel (Cay) or Highborn (Cay) or Governor's Harbour or Chief Cay. So what it does, it brings a lot of people from different areas and connects them with these family Islands so that they may keep their boat in Nassau, but they end up coming and spending their vacation time and vacation money in some place like Black Point. In which could really use a sort of economic boost.

So, we see this as a way that obviously we're adding an economic impact to the Marina itself in a direct and even indirect way but something I think that really needs to be mentioned is the fact that a lot of our members will in fact get their boat and travel to other outer Islands - the family islands and spend their money there.

So, in summarizing some key points of the EIA, the project will account enhance the environment, you know in a couple different ways and but not the least of which is bringing a security presence that area and putting a world-class Marina on what now is easily considered a blighted site.

We will construct a culvert. We're very proud of this this idea. We have this opportunity to right the wrong of a previously poorly managed development. We'll restore the natural flushing to mangroves to the west and we foresee a lot of really great environmental benefits that will come out of that.

Also dredge at the shallow entrance into the Yamacraw Lake which will not just help the flushing characteristics of the new culvert will be added. But we'll also provide easy access for residents that use Yamacraw. Right now, they can only get through there at the highest of tides and even then it's probably two or three feet deep. So, when we dredge that area, it will improve recreation for that area for the locals, but also have the byproduct of increasing circulation.

Also remove all the invasive species and that's going to have a great impact on the proliferation. You know that Australian pine or Casuarina, once it gets started that stuff that takes over. So, removing it will have a great impact on wildlife activity in the area. And as we go in back and put your nest friendly avian-friendly trees and plantings that also serve as a food source.

In our goal is always to add mitigation strategies that that will reduce our environmental impacts and we see a lot of potential here where we can really focus on some areas that that we can really make a difference and have a positive impact of these mitigation strategies. Once employed, we see this the development coming forward and allowing the full socioeconomic benefits would be realized not just by folks on New Providence in the game required in southeast corner of the island as well. But additionally, you know folks in the outer Island so that people are coming and keep their boat at our way to get our boat and drive away and go spend their money on one of the family Islands.

That concludes my presentation. I've included some contact information here on the bottom for anybody has any inquiries or any comments or any suggestions you want to make related to this project. Mark Daniels or myself are more than eager to listen to them. We'll add this this presentation to the to our website so people can click this and download it as well and that concludes our presentation. I'll open up for any questions or comments.

(27:24) END

NOTE: There were no questions.

Dr. Rhianna Neely-Murphy, Director of the Department of Environmental Planning and Protection (DEPP)

Questions - please raise your hand and we will call on you

(silence)

It's not this early in the night that I usually have to do my going once, going twice spiel. Are there any questions for Mr. Chamberlain?

Okay. I will post the question one last time. Are there any questions for Mr. Chamberlain concerning the environmental impacts of this project?

(Silence. There were not questions).

Okay. Thank you very much Mr. Chamberlain. Thank you very much participants for your attention. As indicated earlier due… sorry, one second…

Okay, as I said earlier, the Developer and the Department agreed that we would like to conduct this public consultation in good faith, and I would like to remind that this presentation has been officially recorded as Public Consultation for this proposed development legendary Marina. The 21 days will begin tomorrow. (November 24, 2022). The 21-day period will end on 30th of December 2022. But we will host another In-Person public consultation within the Yamacraw area or somewhere on Providence within the next two weeks, as well, so that we will ensure that we would have done everything that we could, to make sure that the public is aware of this project and understands potential environmental impacts of this project.

Mr. Chamberlain has also advised that he and his team will run a social media campaign to garner questions and interest in responses to the question and the department appreciates that. And so, we will end this public this section of this public consultation and the Department of Environmental planning and protection will be in in further contact with Mr. Chamberlain and the environmental consultants BRON concerning the scheduling of an in-person public consultation meeting.

Thank you very much for your attention have a pleasant evening.

END

9. Appendix B – Physical Meeting Transcript

Legendary Marina at Blue Water Cay
Presentation – Thelma Gibson Primary School.
December 14, 2022

Recording: Thelma Gibson Primary School 2

Dr. Neely-Murphy:

This is the public consultation requirement for the development of Legendary Marina Resort. The proposed development is set in the Eastern District of New Providence. And it would entail the redevelopment of an existing area. There is some work that has been started and that has been left abandoned for quite some time.

The Marina will service up to 136 and accommodate docks up to 120 feet. The Marina village with hotel these are all the proposed activities of Legendary Marina…hotel, residences, restaurants, pool, bar, beach and convenience store… with dry dock facility with the ability to accommodate up to 600 boats, dry dock storage, both maintenance and repair and all the necessary site infrastructure.

A virtual meeting was held already in relation to this project on the 23rd of November 6:00 PM and we are at the public consultation stage at this point in time consistent with the regulations the Environmental Impact Assessment environments among some regulations for 21 business day. The period started on the 24th of November, so we are now within that. And so, the last day to submit comments on this project publicly is the 22nd of December – is that right? (Yes)…. Twenty second of December and that's within a few days, so we expect that at the end of this presentation that you would ask as many questions as possible.

The information is also available on the website for the development, and I do believe that you have a Facebook page with links to the information. The environmental impact assessment up to this point is available for review at the Department of Environmental planning protection as well if you would like to visit the office and have a look at those documents and pose any questions at the office you are more than welcome to do that. We are the government. We do not close unless it's the public holiday so we are we will be open outside of the recognized holidays for Christmas and Boxing Day. I think those would be which holidays between now and the end of the public consultation process. So, we're open nine to five - if you would like you can call us at 322-4546 or send an e-mail to inquiries@DEPP.gov.bs

The developer will make a presentation in a few short minutes, and they will also post their contact information. You can post questions to the perspective pages, and they are mandated to respond. To any questions that come to the DPP will also be forwarded to the developers for their response, and we hope that you ask questions and these will form a part of the environmental impact assessment completed document which is a live document - it's working and - they will also be uploaded at the end of this public consultation process so that you can see your questions that were posed and see the responses to them. So get your questions in as early as possible so that we can ensure that the there's a good quality of the response. I think that you can get we can get going now this Chamberlain. So, I'll hand the floor over to Mr. Rodney Chamberlain who is the vice president of Marina development and he's going to give us an overview of the project and its environmental impact.

Rodney Chamberlain:

Rodney Chamberlain:

Thank you everyone for coming. My name is Rodney Chamberlain. I'm with Legendary Marina Development and I'm here tonight to present on the Legendary project development at Bluewater Cay.

The project location is on the southeast corner of New Providence island it is at the end of Foxhill Road and just past Hanna Road at the end to the water. It was a previously disturbed site as far as we can tell, about 20 years ago a previous developer came in and dredged the area in hopes of creating a new residential community on the peninsula and it was abandoned after a failed attempt of residential sales.

Currently, the site is in disrepair. It's a site with a lot of dumping. A lot of illegal activity. Residents complained about lights and noises and fires being started at night.

You can see some trash dumped here which of course causes rain runoff which causes contaminated water to get into the Yamacraw Lake. More illegal activity, broken bottles. The infrastructure that was there has the retaining wall crumbling and in disrepair and there's several sunken boats.

What we intend to do is build a world class marina in this area. The key feature of this would be the large area in the middle of the peninsula. It is the large rectangle here. This is our dry section so this is where boats will be stored in a dry building. It actually lifts onto the water by a forklift. Inside the building we store many boats, various sizes up to 55 feet. And we have forklifts large enough to actually pick those up and inside there will also have a large service component, so one thing we always pride ourselves on is we bring service, marine service together with marine storage and this acts as the indirect effect of creating a lot of long-term jobs. These are not easy jobs; they require a lot of training so this is one area we are committed to fulfilling and creating a lot of long term career minded jobs.

Just some various views of the project. These are from the Atlantic side and one of our commitments is to build a public beach... and it's here along the southwest corner of the development there will be a public beach created with unfettered public access. These are views from the across the intercross to what we call a line of site study or maximum review showing the backside development.

And so, the main purpose of the EIA is to do a study of the ... *in situ* conditions to see what's there, what in terms of biology is existing on the site now and so I'll go into a bit of detail what we found on the site. We started with the basic survey showing what was found underwater. You can see in the marina basin itself, is a lot of sparse seagrasses and (Missing word) some variation of soft and hard corals with a lot of sandy bottom around the existing breakwater.

So, some of the flora and fauna was found underwater, includes that turtle grass and manatee grass you see there on the left and corky sponge in the middle and a lot of the remainder is sandy bottom with the rocky intertidal zone.

There is obviously a lot of evidence of human presence. You know this area is derelict so it's not cleaned up or anything, lots of trash and debris is blown through the wind into the water, fishnets, obvious trash, there's even a car there which of course didn't belong there. Moving

onto the Avian survey, there were 32 species found on site including a lot of common birds you expect to see in The Bahamas: Grey Catbird, Mockingbird, some of the birds that were found along have the conservation status including the White Crown Pigeon and the Warbler among others.

The survey also found 32 species of tree varieties on site; they include 9 species of invasive including Casuarina, Brazilian Pepper, Hawaiian Lettuce. As well as several species of protected species including red and black mangroves, including Buttonwood and Mahogany. (5:09)

So our first mitigation is a highlight, we take it very seriously, it's something we consider ourselves good environmentalists here at Legendary. We have a lot of developments where we prove ourselves into a natural environment. So, in looking at the activity we plan - our land dredging, construction activity, and what impacts we cause by these activities and then how our approach to mitigation would be.

One obvious attempt for us is to see that there is avoidance, for instance our drench channel has been specifically chosen so that we can minimize the amount of impacts we have to underwater and fauna. As well as, we have a process of looking at increases of developed sites such as this one that is a really good candidate where we are attempting to brand the development to pristine areas instead as a development and this particular one has another benefit of being one that was poorly planned and so we have a lot of opportunity to correct some features, as I will show later on.

I want to also highlight our approach to corporate responsibility of course you know our, we sell experiences, that experience is highly dependent on the quality of environment that we operate in. So our approach to corporate responsibility, really comes as three key benefits or three key areas, and one of course is environmental stewardship. We do this through managing how we plan our developments and make sure context fits where we plan our developments and organize our developments.

We also bring resilient designs to our construction methods. We use sustainable technology. For instance, we have a lot of water demand in our marinas: boats washed down, engine flushing, that kind of thing. So, I (missing part at 7:08), but we can use a lot of captured water, recycled, recirculated/recycled water.

We also focus on a set of economic benefits. This starts for us, with, we understand that we see ourselves as when we move into an area we become neighbors, with whoever is there before we get there, so one thing we tried to do is to try to speak to the neighbors that are going to be our neighbors and try to find out what their concerns are and the problems they've been having and what their issues would be.

We also bring a lot of opportunities for long-term job creation. Obviously the groundskeepers and that type of thing but we also do a lot of long-term job creation in areas like hospitality, Marine service technicians, and the forklifts that operate in these marinas that lift these boats out of the water require very highly skilled operators so we invest a lot in training.

And of course, there is an economic impact and we think this marina is very special in the sense that, The economic impacts won't be generated just locally by the marina. So, we have

a lot of ability to be projected far beyond the shore of just where the marina is and the local economic impact comes from the idea that we provide a pathway for anyone who wants to be trained in the Marine service industry where they can come in not really knowing how to do anything but change oil And we can bring them to master technician level within a few short years.

So environmental stewardship I will spend some time on that. We have a multi-point, multifaceted approach that highlights certain key areas. One of our biggest areas were most proud of is the ability to recirculate water and revitalize the mangroves swamp that is just to the west of the development. so just west of our development you can see that there's Mangrove swamp on the left hand side of the screen and when a previous developer came in, and over years and over different attempts they essentially damned off the mangrove swamp to where it doesn't circulate the natural flushing anymore. so what you're left with is a very large area of stagnant water that creates two problems. Well three really, there's an inability for an ecosystem to really survive and thrive in the area, number two it prevents subsequent draining from the surrounding areas, and number three it's a mosquito breeding ground, which if you talk to anybody there's a really bad problem with mosquitoes in this probably has a lot to do with that.

So our initiative is to install a covert here at the end of Fox Hill Road where we reestablish a flushing characteristic between Yamacraw on the right and the stagnant Mangrove swamp on the left. And we follow it up with a dredge at the end of Yamacraw where it (Missing word at 10:07) into the Atlantic. And you can see that there's a lot of opportunity for a lot of flushing to return and revitalize the mangrove swamp.
They're spending a little bit of time on how that benefits much more than just the marina itself, it's a direct and indirect impact. Mangroves have a lot of ability to filter water there of course freshwater plants the filter saltwater so in that process they also filter phosphates nitrates and other pollutants that occur in the water due to human activity so they're a natural filter.

Secondly their roots create a labyrinth for juvenile fish can live and grow if you will, so they are good for the ecosystem and it's all spectrums of the food chain. But they also provide a lot of storm surge protection. There's a lot of areas that do not have mangroves where the planting areas just solely for the purpose of creating a resilient storm tarp.

A lot of people don't realize that mangroves are in fact great carbon sinks. they absorb carbon dioxide, and they utilize and metabolize the oxygen and store the carbon in their tissues so they are actually good carbon sinks.

But also you know that Bonefish is a big sanctuary we recognize that we are about 6 miles from Bonefish, so I included this extra from the Bahamas Bonefish action plan their 2021, which states that revitalizing degraded mangrove creeks has a positive benefit on Bonefish and other economically important fish species. So, we feel like this is a really good really easy fix for us with really high impact and the effort we can do to show environmental stewardship.

So we also obviously already cleared the land where we intend to build our Marina, But in that land just wanted to point out that there are a lot of species Of non-native invasive plants found and so what I do is I've included two pictures of a project about 5 years apart so you can see the Drone shot on the left from 2016 versus the Drone shot on the right from 2021.

The left here is very barren not a lot of vegetation going on, but now it is completely overrun with Casuarina and Brazilian pepper and other non-native invasive species.

So that short time you can see How quick those non-natives can propagate and of course they don't know where the property boundary is and they are propagating beyond these boundaries, so when we come in and remove that we would be doing a favor for everybody.

We are going to have some impacts on some existing mangroves on the end of the existing breakwater. We intend to replenish and restore those as much as possible. To the point where we have already started engaging in folks that actually grow mangroves, currently so when we do go to plant these we are not planting seedlings, we will plant seedlings as well but we will also plant mature trees that are pre-programmed, that are already programmed to start throwing off seed sprouts immediately so it makes a propagation statue period that much shorter, because else (Missing part 13:19)

So, we also have to create breakwaters in developing to provide storm surge protection and overall resiliency. In the past we have recognized we can choose the right size and shape very thoughtfully and create a labyrinth of ecosystems. And we have a development that, We have a lot of (Missing word 13:45) in that development and we have a lot of snorkeling trips to the breakwaters and actually see enough fish diversity where it makes sense for people to come down and pay money to actually snorkel around the breakwater. We see this as one area we can create its own ecosystem.

As i mentioned before we also intend to capture in our design, we will have systems to capture and store rainwater, so we are using rainwater for irrigation and boat washing. We also have systems that are the latest technology so double (Missing word 14:27) tanks, double the hoses everywhere and our dispensers will be outfitted with a capturing device to prevent accidental (Missing word 14:36)

To also have an idea to incorporate renewable energy sources in our move for our dry storage building to be very large, so there's a lot of ample space to place solar panels and possibly wind. As I mentioned before our building is Category 5 rated and our docks are floating docks. All of this creates a sense of resiliency and provides safety in a storm. I just want to point out with the doc resiliency that so these are floating docks, which I just want to articulate that with tides but when properly designed they can articulate with certain levels of storm surge.

So as part of our EIA we did a pretty extensive coastal modeling analysis, and we show what we anticipate will be storm surge and we use that value to set our design basis for occupy ability as well as our docks.

We also capture our (Missing words 15:39) water and make sure we manage it properly to prevent polluted water from discharging overboard into adjacent waters.

And why large forklifts? To of course take the boats out of the water and store them in the building and these forklifts are what is known in the industry as tier 4 forklifts. which have extra Environmental EPA, Environmental Protection measures to prevent particularly from entering the atmosphere. And in so doing that, they essentially have two mufflers and so that brings down the noise level of these machines tremendously.

And of course, we will outfit our buildings with ductless insulation and windows and doors that are energy efficient. We will also use energy efficient electrical devices as well as plumbing fixtures.

We intend to raise a grate on the entire site and one concern if we did trenches to place utilities underground, utilities, We can impact the underground water resources so we by raising the grate first and then placing our utilities we then avoid those impacts.

And of the sunken vessels that are in Yamacraw we intend to remove them and if we could salvage them, we intend to put them offshore and use them as artificial reefs and create additional Marine habitats.

So, I will go through a couple of our socio economic benefits that I wanted to highlight. First off the area is derelict now as there were security issues, bringing up the presence of the marina in this area will go a long way in making it a more secure environment, it will increase property values and give overall security to the neighborhood.

by judging that area where Yamacraw Lake enters into the Atlantic that basically means that people can use their boats not just in high tide but at other times as well, that in the long run will increase recreational activity in that area.

And I mentioned we will create a neighborhood beach access to the west of the development where we have public access to a beach where we create on the west side.

Environmental stewardship I went through those points as well, but one thing the reason I include our socioeconomic benefits, because I see that the path that we create between Fox Hill and the neighborhood Beach we can put a boardwalk there or something like that or we could have young kids go out and measure mangrove trees Year after year and sort of get involved in witnessing revitalization and the importance of properly Planning Development.

Resiliency is a big deal nowadays of course everybody knows by creating a project that keeps resiliency in mind is very responsibly, not just from a corporate standpoint but from an environmental standpoint as well. We also have quality job creation, we have Marine Service techs in a lot of our marinas now these are very high paying very long-term career jobs. and we are committed to creating training opportunities where people can come into our facility at any existing knowledge level and we will get them into a program that trains them wherever they are To a Master text a certified Master Tech which they can use that certification anywhere.

We have a lot of remittances and we offer a lot of our other developments such as the rain boats and (missing word at 19:16) troops and stuff. These are entities that we offer are developments but we don't necessarily do them so we, have we create an environment where someone can come in and be their own entrepreneur, so entrepreneurship is also another possibility by providing. Things I can see here would be charters, fishing charters, snorkeling trips, day trips to the Exumas and that sort of thing.
And you know I mentioned before that by stimulating the economy of course every time you bring a development there's going to be some stimulation of the economy but I see this as an opportunity of not just impacting the local area but also as people come in and grab their boat and they travel across to Staniel or to Chub or to Governors harbor or something in a distant place, we can bring that tourism to the out islands. So what I did was I kind of had a map

made to show these distances in today's console the average console will cross these distances in under 2 hours. So we people see coming in, grabbing their boat and then leaving and spending a week somewhere else other than Nassau.

So in summary the EIA summarizes by saying we will enhance the surrounding area by providing security to the area, we will have a lot of opportunities for providing mitigation, and as well we will have overall economic activity Supportive and being in large amounts of bringing in local jobs.

So our goal of course always in any environment stewardship, we implement mitigation steps in a way and combine that with the development program that can lessen or even remove the Environmental impacts on our project as we construct it. and obviously if we go through with this and we build this development then we can realize all of the socio economic benefits that I mentioned at the beginning of the discussion.

and that concludes our presentation we have our email addresses up there, and I will be here for questions.

-end of first recording-

Thelma Gibson Meeting

Audio File: Thelma Gibson Primary School 3

Questions

Attendee:

… any other water and one of my concerns is currently we already have that traffic for persons coming to put their boats in the water and the ramp. We're not exactly sure who's in the neighborhood so I wanted to know how is that going to impact that general area? Because you know I'm hearing you talk about increased activity which is not necessarily a bad thing - however, in the community within you know where I am so close to the water; So it was the concern for me - the traffic. What is going to be the traffic impact with this development in the east? Because we already have very bad traffic problems in the east side. If you try to navigate these scenarios in the evenings. So, what is the traffic impact?

During Hurricane Matthew we had a lot of flooding in that area. What is going to be that type of environment in the area with the dredging that's going to come along with this project? How is that going to affect us because we already have a water problem that began no one seem to do anything about it.

And, last but not least, I think they're in a free zone, so we are not covered with real property taxes. While I appreciate the increase in property value, does that mean that I am now going to be impacted by having to pay taxes with this development?

So, those were a few of the important things that which is why I came because I wanted to know while negotiations are going on for this project, how is that going to affect my pocket? How is that going to affect my day-to-day living in terms of traffic and all these different things possibility of flooding in these things like that's going to you know it's good but how is it going to on the back end in residence of the…

Rodney Chamberlain:

Let me try to address it one at a time.

So first you asked about storm surge. You can see the color the heat map that we've developed across the model. You see once you get inside here, the breakwater and the peninsula itself provide a buffer to anybody who is beyond there. And there to provide just imagine what percentage was numbered on top if you just have some sort of table - this is very carefully and a call for design to absolutely absorb the storm surge to protect our development. But the benefit, the collateral benefit is that if anybody lives above us obviously shares a benefit as well….It won't make the taskbar in other words that first blue… yeah.. people here would be the same color… provide some protection.

Attendee question (tall lady):
3:30
What was the height of storm surge … See this right here… we have a draining problem …. I have drainage problems different situation all by itself (Hanna Road). I must wear rubber boots to deal with it. When it rains, water settles. You're dredging… so you can only go so deep.

Rodney Chamberlain:
(4:09)
The dredging will alleviate all this area right here… is almost certainly served at 4 1/2 feet. There's very little on the area but the dredging will actually help a lot.

Attendee (man in khaki shirt):
…I went out there…. Because right over here on this side…. We had four elderly people (who live there) and two just came out of the hospital, and two are 100 years old. The music was vibrating off of their house. You're going to put a development over here you say you want to put ??? and stuff. What impact is that going to have? Because this is a retirement area. The majority of the people that live in this area are retired. They moved in the back here to get away from New Providence and the hustle and bustle. When Yamacraw drivers in this traffic - people cut through our neighborhood! That's a problem. We have elderly people that don't walk the streets no more because of the impact traffic flow has. So I'm asking what impact does this have on the senior citizens that live there now.

Rodney Chamberlain / Attendees

RC: Traffic comes up Fox Hill Road…

Attendee: It doesn't work that way. You would think the traffic direct that way (Foxhill Road) so because getting around and navigating in the backyard of the east is still limited… people are taking short cuts…they come through our community …

RC:
??

6:27
Attendee:
When it rains…when it pours… right at Foxhill Road. When it rains… there is a little drop along the …. The bottom of Foxhill…. That's so serious in our neighbourhood… That's the impact that you have to go through when it rains.

So, I am asking again… what is this dredging and everything and when the wave comes and we got to deal with more water. And you know what else happens in our area? The ground gets saturated with water. And you know what happens to us? We have to turn the power off. Because then you'd be electrocuted. And we have to wait until it dries out. So, you do a dredging… you're adding more water to our problem.

RC:
Dredging will not impact your (problem) that's just engineering…

Attendee:
Okay... alright…

Attendee:
Well, that's the question that needs to be answered because if the project is going to approved…and it's going to impact the person who currently lives there… because you have persons who are now not paying real property tax and now $6,000 every year in property tax as a result of development of development …how will it affect the residents…. My mother cannot afford the thousands of dollars in her retirement… it's something you should negotiate…

RC:

The property tax, I cannot imagine that… I can't speak for that. Are there any other questions?

Attendee:
Traffic impact.

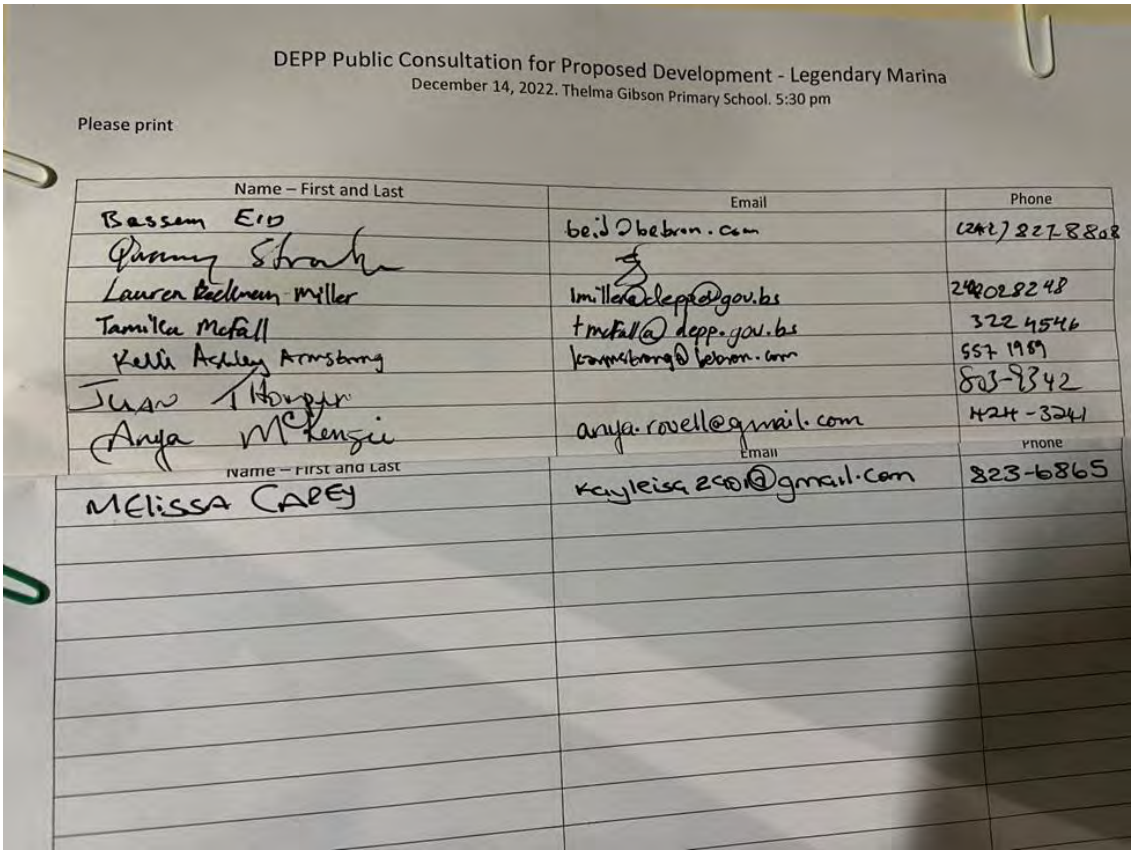
Note: above is half of recording and there is a small one to complete (sending to BRON)

-third recording-

10. APPENDIX C – VIRTUAL MEETING ATTENDANCE LIST

- Mark Daniels
- Ag pyfrom
- A lundy
- Anna armbrister
- Azaleta and co
- Azaleta ishmael newry
- Bassem Eid
- Brittney Culmer
- Dr Neely
- Fran Palomino
- Garbrielle Neely Collie
- Anthony ferguson
- HK
- Khaalis Rolle
- Khadejah Thompson
- Latesha Gibson
- Leah Knowles
- Myrlande Fortune
- R Chamberlain
- SF
- Scott
- Coach G
- Lknowles

11. APPENDIX D – PHYSICAL MEETING ATTENDANCE LIST



DEPP Public Consultation for Proposed Development - Legendary Marina
December 14, 2022. Thelma Gibson Primary School. 5:30 pm

Please print

Name – First and Last	Email	Phone
Bassem Eid	be.id@bebron.com	(242) 2278808
Quincy Strachan		
Lauren Beckman Miller	lmiller@depp.gov.bs	24202828 48
Tamika Mcfall	tmcfall@depp.gov.bs	322 4546
Kelli Ashley Armstrong	karmstrong@bebron.com	557 1989
Juan Thorpe		803-9342
Anya McKenzie	anya.rowell@gmail.com	424-3241
Name – First and Last	Email	Phone
Melissa Carey	kayleisa2508@gmail.com	823-6865

13. APPENDIX E – LETTERS OF SUPPORT

Two (2) E-mails received in support of the development:

1. E-Mail from Mr. Ian M Bethell (ianbethel1967@hotmail.com, TEL: 242-457-3640):

EIA for Bluewater Cay.msg

EIA for Bluewater Cay

IB IAN BETHELL <ianbethel1967@hotmail.com>
To: inquiries@depp.gov.bs; Rodney Chamberlain <rchamberlain@legendaryinc.com>; Mark Daniels
Wed 12/21/2022 10:15 PM

Hello

I am writing to state that I read and listened to the presentation made by Mr Chamberlain I am.familiar with the area and the project

It is a good one that will Improve the area, is beneficial for The Bahamas and offers a needed service

This area has been an eyesore and harboured garbage causing an infestation of rodents. The new development will eliminate the criminal activities as well

Thank goodness the culvert will be installed that will help with the mosquito problems, flooding and cleaning the stagnant water.

Sincerely,
Ian M Bethel
242-457-3640

Get Outlook for Android

Reply Reply all Forward

2. P+E-Mail from Mr. Peter Goudie (petermyakt@gmail.com – TEL: 242-393-2545 / 242-422-0231):

Blue Water Cay.msg

Blue Water Cay

PG peter goudie <petermyakt@gmail.com>
To: Rodney Chamberlain <rchamberlain@legendaryinc.com>
Sat 12/17/2022 3:16 PM

This is an amazing project that will be truly beneficial for this part of New Providence, restore a true eyesore and provide more meaningful employment!!

Peter

Peter Goudie
petermyakt@gmail.com
242-393-2545
242-422-0231

Reply Forward

13. APPENDIX F – PROJECT PRESENTATION

Legendary® MARINA RESORT

AT BLUE WATER CAY
Nassau, Bahamas

Presentation By:
Rodney Chamberlain, P.E.
Vice President of Marina Development
Legendary, LLC

Wednesday, November 23, 2022
Environmental Impact Assesment

Project Location


Project Location
Yamacraw Hill Rd.
Fox Hill Rd.
Hanna Rd.
Blue Water Cay
BAYWATER ESTATE
Freedom Farm Baseball Park
Checkers Cafe
New Dimension Ministries
Solomon's Yamacraw
Tamdelore Cakes
Calypso House Ocean Villas
St Andrew's School
Break Fix & Maintain Cellphone Repairs
Legendary
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas

Current Site Conditions

Current Site Conditions

Illegal dumping ground for trash

Current Site Conditions

Trespassing, drinking and littering

Current Site Conditions

Crumbling walls and multiple sunken vessels

Legendary MARINA RESORT AT BLUE WATER CAY Nassau, Bahamas

Project Master Plan

Legendary MARINA RESORT AT BLUE WATER CAY Nassau, Bahamas


Legendary®
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas

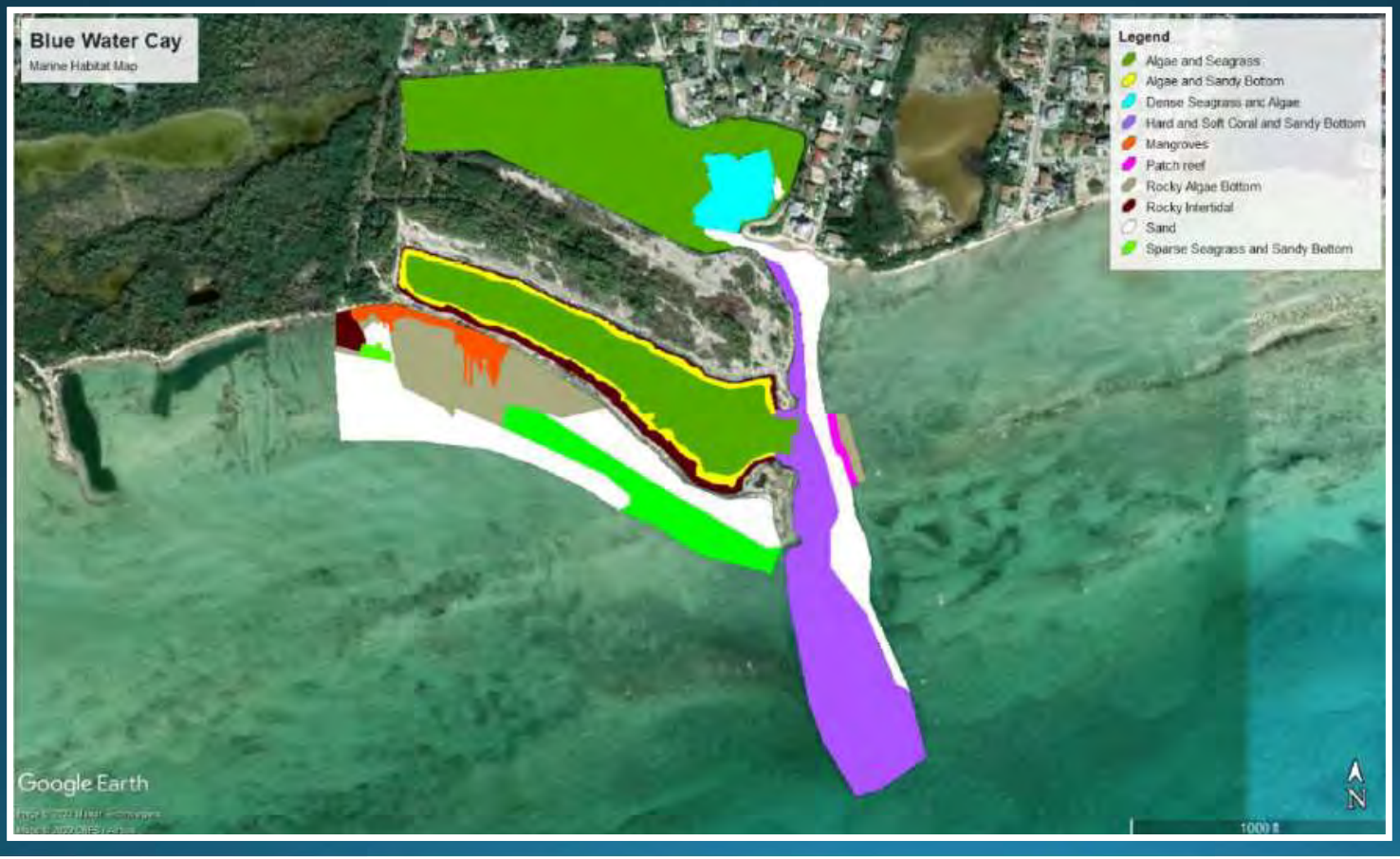

Legendary®
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas


Legendary
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas


Legendary
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas

BENTHIC SURVEY

Benthic Descriptions



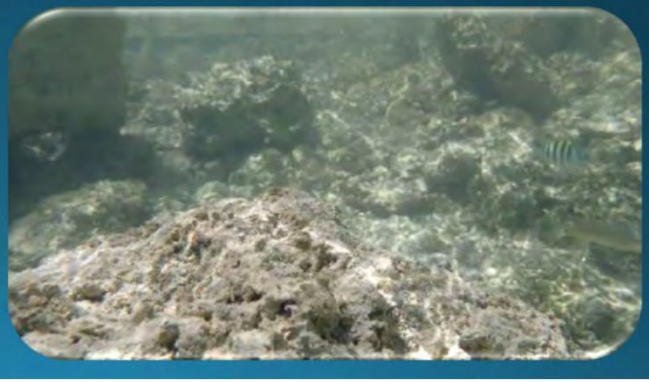
BENTHIC SURVEY

Benthic Diversity

Manatee and Turtle Seagrass

Corky Sea Finger

Sandy Sea Bottom & Rocky Intertidal Zone



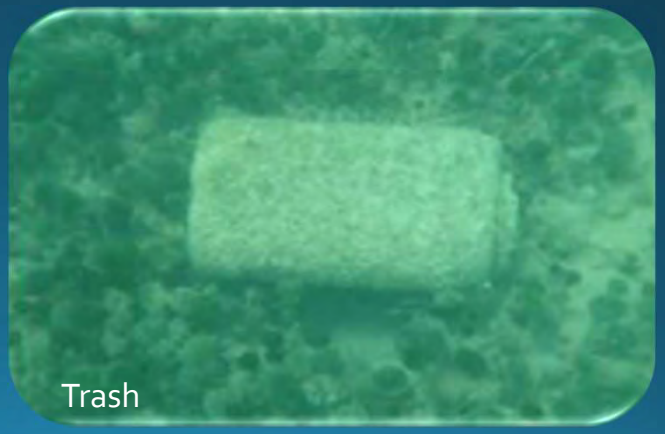
BENTHIC SURVEY

Examples of Human Influence
Fishing traps, nets, car, garbage


Car


Fishing Trap


Fishing Trap


Trash

AVIAN SURVEY

Total Site Species Count: 32

Wilson's Plover

Gray Catbird

Laughing Gull

Conservation Status

Near Threatened: 1

White-Crowned Pigeon

Species of Concern: 6

Prairie Warbler

BOTANICAL SURVEY

Total Site Species Count: 32

Invasive Species Count: 9

Hawaiian Lettuce

Casuarina

Brazilian Pepper

Protected Species Count: 6

Black Mangrove

Buttonwood

Approach to Mitigation

Activity	Impacts	Mitigation
Land Clearing	Habitat Disturbance	Avoidance
Dredging	Turbidity	Replanting / Transplanting / New Plantings
Seawall Construction	Construction Activity	Mitigating Construction Methods
Rip Rap Placement	Human Activity / Noise	Restorative Concept –Using Previously Disturbed Land
Beach Creation		Coordination with non-profit Organizations

Approach to Corporate Responsibility

Environmental Stewardship

Minimizing environmental impacts through thoughtful planning

Sustainable practices such as recycled water, alternative energy sources

Resilient building construction

Socio-Economic Benefits

Community outreach to understand and address local concerns

Create a prosperous development that maximizes benefits for many

Long term job creation for career-minded employees

Economic Impacts

Enhancing tourism by engaging different markets

Create a development that will generate long-term local income

Create an environment that fosters entrepreneurial spin-offs

Environmental Stewardship

- Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality
- Remove invasive vegetation and incorporate native and avian-friendly vegetation into landscaping plan
- Replant and incorporate impacted mangroves where possible
- Create eco-friendly breakwaters to encourage marine life habitation
- Use recycled water for many operations such as irrigation and boat washdowns
- State-of-the-art fueling systems to prevent leaks and capture spills at dispensers
- Incorporate renewable energy sources where possible, such as solar
- Category 5 –rated building and specialized floating docks combine to create marina resiliency
- Stormwater from work areas will be responsibly managed to prevent pollutant discharge
- Forklift machines will be equipped with latest in emissions and noise reducing technology
- Latest green technology in building construction – energy efficient electrical equipment and fixtures
- Raise the grade of the entire site to ensure no disturbance to underground water resources
- Remove sunken vessels and relocate to create artificial marine habitat

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosqu[illegible] breeding areas, and improving wate[illegible]

Remove invasive vegetation and incorpo[illegible] avian-friendly vegetation

Replant and incorporate in[illegible] poss[illegible]

Create eco-friendly breakw[illegible] life hab[illegible]

Use recycled water for n[illegible] irrigation and boat[illegible]

State-of-the-art fueling systems to prevent leaks and capture spills at dispensers

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Category 5 –rated building and specialized floating docks combine to create marina resiliency

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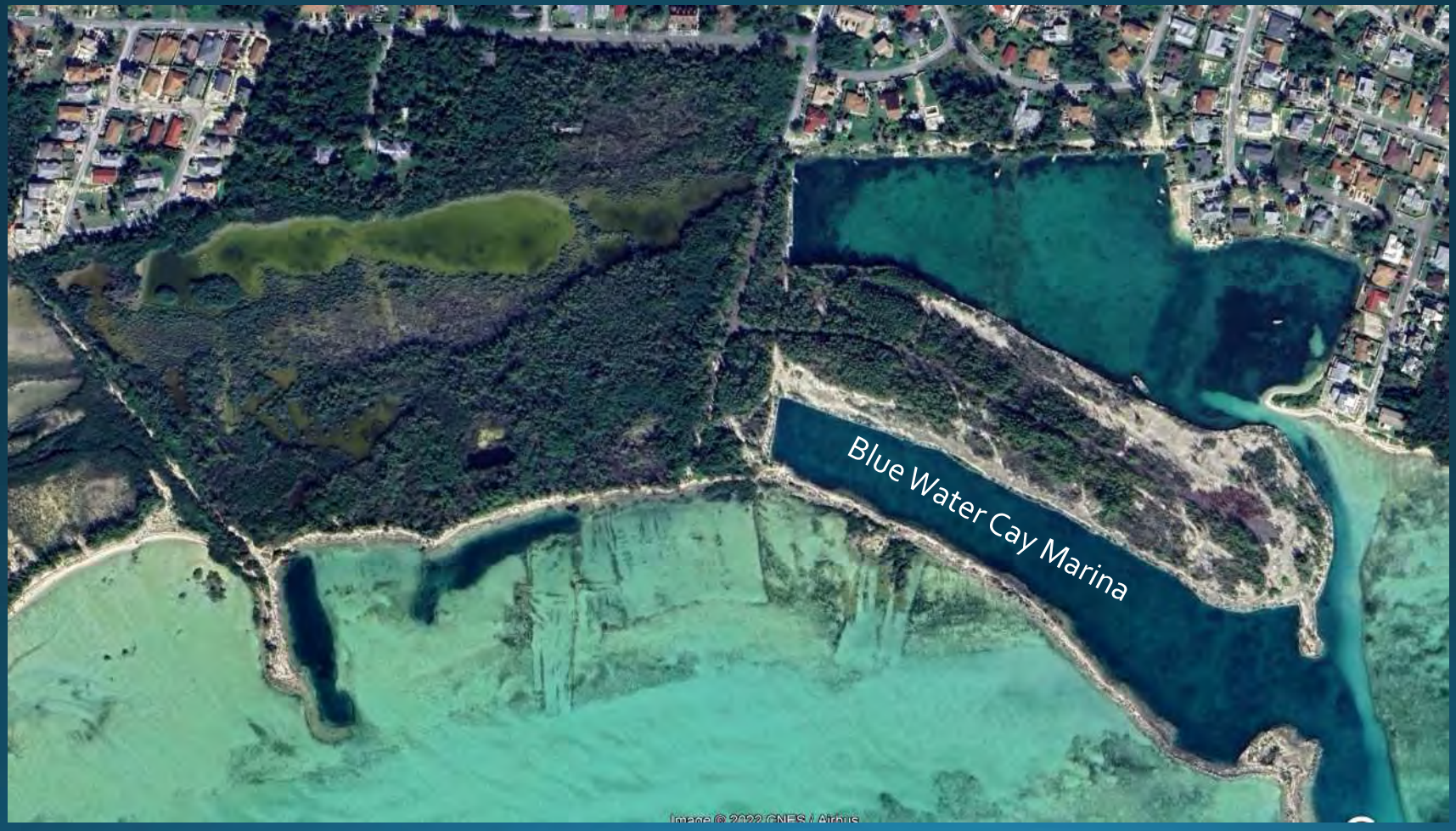
Raise the grade of the entire site to ensure no disturbance to underground water resources

Remove sunken vessels and relocate to create artificial marine habitat

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

Restoring Tidal Flows To Mangroves



Restoring Tidal Flows To Mangroves

Restoring Tidal Flows To Mangroves

Restoring Tidal Flows To Mangroves

Restoring Tidal Flows To Mangroves

Revitalizing Mangroves

Healthy Mangroves Provide Many Benefits

Roots provide natural filtration of pollutants

Roots provide natural barrier against Storm Surge

Roots provide underwater nurseries for critical fish species

Revitalizing Mangroves

Healthy Mangroves Provide Many Benefits

Mangroves provide an excellent carbon sink

Critical habitat for native bonefish

From the Bahamas Bonefish Conservation Action Plan of 2021:
"Restoring degraded [mangrove] creeks will increase the amount of habitat available to bonefish and other economically important species."

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

Remove invasive vegetation and incorporate native and avian-fri dly veg

Replant and incorp

Create eco-friendly b
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Incorporate renewable energy sources where possible, such as solar

Category 5 –rated building and specialized floating docks combine to create marina resiliency

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Latest green technology in building construction – energy efficient electrical equipment and fixtures

Raise the grade of the entire site to ensure no disturbance to underground water resources

Remove sunken vessels and relocate to create artificial marine habitat

Remove invasive vegetation and incorporate native and avian-friendly vegetation into landscaping plan

Non-Native Plant Growth

Rapid Non-native Invasive Plant Growth

Peninsula Dominated by Casuarina and Hawaiian Lettuce

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

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Replant and incorpo

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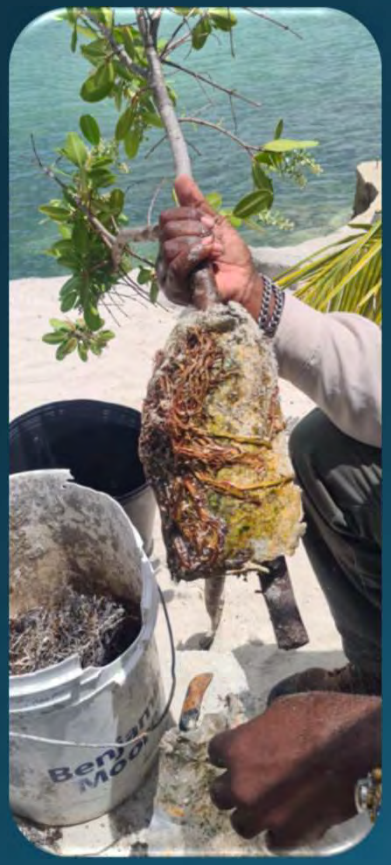
Latest green technology in building construction – energy efficient electrical equipment and fixtures

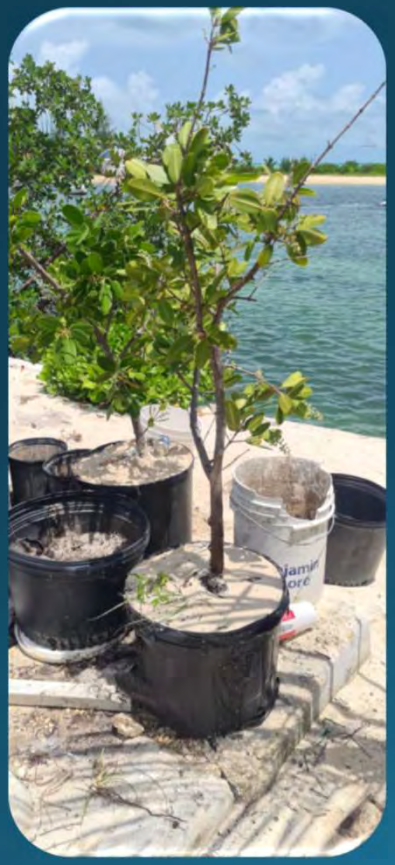
Raise the grade of the entire site to ensure no disturbance to underground water resources

Remove sunken vessels and relocate to create artificial marine habitat

Replanting and Transplanting Mangroves

Planting Mature Trees for Rapid Establishment





Transplanting Seedlings and Established Mangroves

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

Remove invasive vegetation and incorporate native and avian-friendly vegetation into landscaping plan

Replant and incorpor

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Eco-Friendly Rock Jetties

Environmental Stewardship

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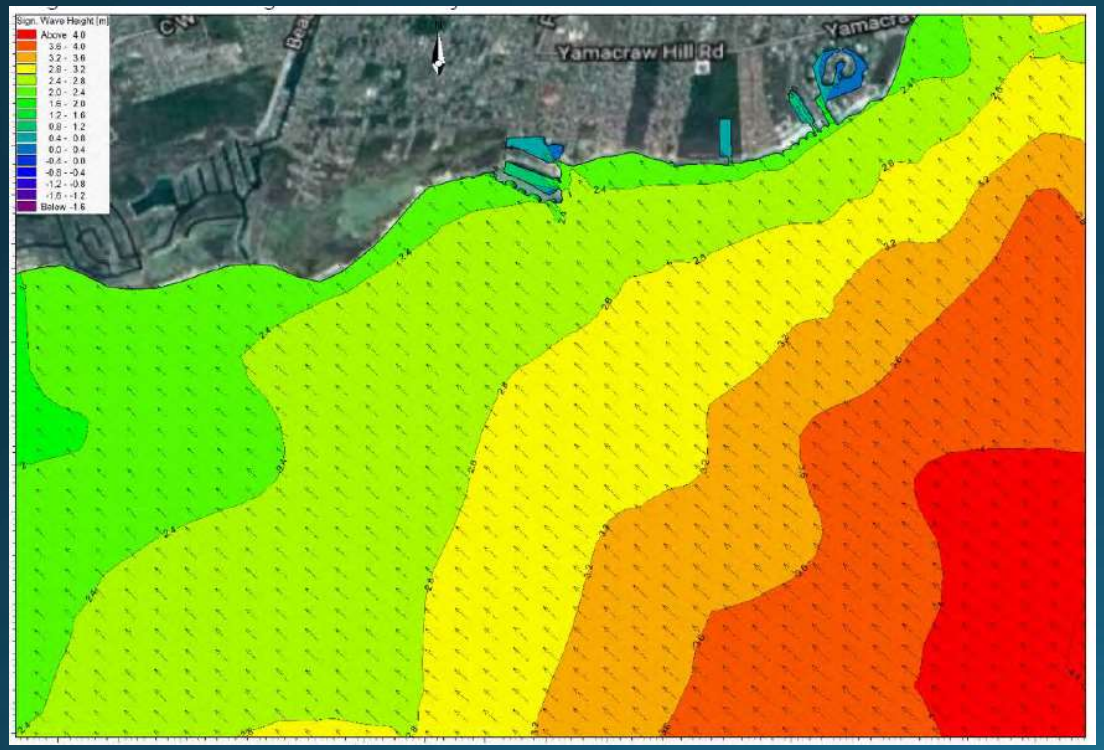
Category 5 –rated building and specialized floating docks combine to create marina resiliency

Premium Aluminum Floating Docks

Legendary
MARINA RESORT
AT BLUE WATER CAY
Nassau, Bahamas

Creating Hurricane Resiliency

100-Hurricane Wave Distribution due to SE Wind



Event	Surge Elevation (ft)
5-Year	7.4
10-Year	8.2
25-Year	9.2
50-Year	10.0
100-Year	10.6

+10.0 Finished Floor Elevation will be used as a design basis for occupied buildings

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

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Incorporate renewable energy sources where possible, such as solar

Category 5 –rated building and specialized floating docks combine to create marina resiliency

Stormwater from work areas will be responsibly dis ge

with latest in echnology

Latest green technology in building construction – energy efficient electrical equipment and fixtures

Raise the grade of the entire site to ensure no disturbance to underground water resources

Remove sunken vessels and relocate to create artificial marine habitat

Stormwater from work areas will be responsibly managed to prevent pollutant discharge

Environmental Stewardship

Restore tidal flow to the mangrove estuary west of the development, improving vitality of the mangroves, reducing mosquito breeding areas, and improving water quality

Remove invasive vegetation and incorporate native and avian-friendly vegetation into landscaping plan

Replant and inco

Create eco-frien

Use recycled water for many operations such as irrigation and boat washdowns

State-of-the-art fueling systems to prevent leaks and capture spills at dispensers

Incorporate renewable energy sources where possible, such as solar

Category 5 –rated building and specialized floating docks combine to create marina resiliency

Stormwater from work areas will be responsibly managed to prevent pollutant discharge

with latest in

gy

construction – energy efficient electrical equipment and fixtures

Raise the grade of the entire site to ensure no disturbance to underground water resources

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Forklift machines will be equipped with latest in emissions and noise reducing technology

Environmental Stewardship

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Remove invasive vegetation and incorporate native and avian-friendly vegetation into landscaping plan

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Category 5 –rated building and specialized floating docks combine to create marina resiliency

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Socio-Economic Benefits

Neighbourhood Improvements, Increased Property Values, and Security

The presence of this marina will **increase the property values** and **security of the area surrounding the development.** The marina will have **24-hr security guards** and **closed-circuit tv cameras** throughout.

Increase Resident Recreation

During Phase 1 construction, we plan to **dredge the existing channel into Yamacraw Lake** to **create more enjoyment and easier access for residents**. Additionally, removing sunken boats will make **boating in and out of Yamacraw Lake much easier.**

Create Neighborhood Beach Access

During Phase 1 Construction, we will **create a neighborhood beach and walking path connecting to Fox Hill Road.** This ensures that the locals have unfettered **access to the ocean** - one of the country's most valued treasures.

Environmental Stewardship

Our **Environmental Management Plan** includes **revitalization of the adjacent mangrove estuary** to the west. We believe in **preservation and sharing knowledge** through partnerships with **area schools.** Students will have the **opportunity to study the importance of mangroves** by following and tracking our rehabilitation project.

Socio-Economic Benefits

Resiliency	This development will give current and **potential boat owners peace of mind** by constructing **a Category 5 rated storage building.** This will provide a hurricane plan for boat owners, making insuring their boats possible. Docks, seawalls and other structures will all be designed and constructed with resiliency and efficiency in mind.
Quality Job Creation	This development will **create Long-term, meaningful jobs in marine servicing, forklift operation and maintenance, and hospitality management.** Bahamians from all over will benefit from the success of this project.
Training Opportunities	Provide training through our affiliation with **One Water Marine** (OWM) in the repair of internationally-branded marine engines. OWN operates **over 90 dealerships in the US**. We are **working with BTVI** and others to help create a pipeline of **young men and women interested in a career in the marine service industry.**
Entrepreneurial Development	The development will provide **entrepreneurial spinoffs to Bahamian citizens such as charter fishing, scuba and snorkeling trips, boat detailing, retail ownership,** and more. The successful marina creates an environment that will **foster tourism spending**.
Stimulate the Bahamian Economy	The proposed facility will **create additional demand for existing housing, transportation, entertainment, lodging and food and beverage industries. Goods and services from Bahamian artists, musicians, cooks and specialists** will be offered in the shops, restaurants and retail areas.

Bring Tourism to the Family Islands

EIA Summary

The project will **enhance the surrounding environment by bringing a security presence to the area and cleaning up a blighted site**

Construct a culvert under the entrance road, thereby **restoring natural flushing of the mangroves to the west of the development, helping to offset incidental mangrove removal**.

Dredge the shallow entrance to Yamacraw Lake, which will allow easier access for residents with their vessels and **improve the water circulation thus enhancing the water quality of the lake**.

Removal of invasive species and replating with native vegetation will **enhance the overall wildlife activity in the area**.

EIA Summary

"These mitigation strategies have the potential to **lessen and even eradicate environmental impacts due to project activities**."

"These mitigation strategies will be employed where possible to lessen the overall environmental impact of the project, **allowing the full socio-economic benefits of the project to be realized by residents and stakeholders on the island of New Providence**."


Thank you
For comments or inquiries related to the project, please contact:
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Legendary®
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AT BLUE WATER CAY
Nassau, Bahamas

12.10 APPENDIX H – ENVIRONMENTAL MONITORING CHECKLIST

Observer: _____ Date: _____

Time Started: _____ Time Ended: _____ Air Temperature:_____

Contractor: _____

Site Description: _____

Weather: ☐ Sunny ☐ Cloudy ☐ Partly Cloudy ☐ Rainy ☐ Thunderstorm

Types of Construction Activities

☐ Land clearing ☐ Site Grading ☐ Excavation ☐ Limestone Rock Import
☐ Erosion and Sediment Control ☐ Air Pollution or Dust Control ☐ Fueling
☐Waste/Hazardous Material Water/Drains Issues ☐Oil spill
☐ Noise Pollution ☐ Perimeter Fence Secured ☐ Building Construction

1. Site Conditions

1.1. Site Safety and Health

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Appropriate usage of Personal Protective Equipment (PPE).				
ii.	Appropriate signage installed for restricted and hazardous areas.				
iii.	Sanitization station is setup and fully functional.				
iv.	Adequate freshwater drinking supplies available.				
v.	Proper disposal of spoils				

1.2. Groundwater Management

Areas of Compliance with the Approved Site EMP	*Compliance with EMP*			*Remarks*
	Yes	*No*	*N/A*	

i.	Fueling and oil storage distant from waterbodies and/dewatering.				
ii.	Adequate secondary containment for fuel and oil tanks.				
iii.	Adequate drainage system / prevention method to prevent onsite run off into nearby waterbodies.				

1.3. Air Quality Management

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Watering of construction sites to minimize dust generated.				
ii.	Equipment properly maintained to reduce emissions.				
iii.	On-site vehicles not exceeding 10 mph.				
iv.	Record Air Quality measurements	AM _____ PM _____			*Record the time measurements were taken in addition to the measurement.*

1.4. Waste Management

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Good housekeeping practices and general cleanliness of site.				
ii.	Adequate on-site sanitary facilities.				
iii.	Proper disposal of mobile toilet wastewater.				

iv.	Sewage being properly disposed of, with no drainage into marine or freshwater bodies.				
v.	Appropriate waste (ie. Used oil, chemical, hazardous, vegetative and solid waste) storage containers being used are properly labeled and sealed.				
vi.	Proper collection and disposal of construction and hazardous wastes (licensed collectors, manifests).				
vii.	Secondary equipment used to collect spills during fluid removal or transfer.				
viii.	Spill kits and absorbents easily accessible for quick spill response.				
ix.	Solid waste ticket receipts recorded for landfill disposal for onsite waste management.				

1.5. Erosion and Sedimentation Control

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Proper sorting of spoils at stockpile management site.				

2. Biological Resource Management: Terrestrial & Marine

2.1. Terrestrial Resources

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Pre-clearing vegetation assessment completed.				*List species observed.*

ii.	Protected and endemic trees identified, and GPS logged.				*List species observed.*
iii.	Identification of protected, endemic, and native botanical species				*List species observed.*
iv.	Vegetative waste collected and contained for mulching/recycling.				
v.	The stockpile of vegetative waste does not exceed 6 cubic yards.				
vi.	Removal and proper disposal of Invasive Sand Dune species of plants.				*List species observed.*
vii.	Active/Inactive bird nest discovery.				*List species observed.*
viii.	Identification of avian species observed				*List species observed.*
ix.	GPS logging of rare, endemic, and migratory bird species, and other notable fauna.				*List species observed.*

2.2. Marine Resources

Areas of Compliance with the Approved Site EMP		*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Preclearance surveys completed				
ii.	Identification commercially important or protected species on the coastline and beach.				*List species observed.*
iii.	Identification of invasive marine species.				*List species observed.*
iv.	Sea turtle nesting area identified, and GPS logged.				*List the amount observed.*
v.	Shorebird nesting area identified, and GPS logged.				*List the amount observed. Identify species, if possible.*
vi.	Marine megafauna observed on site. (☐ Shark ☐ Turtles)				

3. Environmental Incident(s) and Emergencies/Health

3.1. Accident Reporting

	Areas of Compliance with the Approved Site EMP	*Compliance with EMP*			*Remarks*
		Yes	*No*	*N/A*	
i.	Proper maintenance and availability of fire extinguishers and first aid resources.				*Add date the kits were stocked or replenished. Add the last inspection date for the fire extinguishers.*
ii.	Accident & Emergency log – Any reported Safety, Health or Environmental incidents requiring outside interference of emergency response officials.				*If yes, complete the Incident Report Form*

4. Daily EMP Compliance Code

4.1. Additional Comments

i.	Compliance Code:	☐ Green ☐ Orange ☐ Red	
ii.	Additional Comments:		
Environmental Monitor to include photos of activities happening on site.			
	Report prepared by:	*Print Name*	*Sign*
	BRON POSSIBILITIES UNLIMITED	Environmental Monitor	